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Üretken Yapay Zekâ Araçları ile Sosyal Bilgiler Öğretimi: Avantajlar ve Dezavantajlar[1]

Teaching Social Studies with Generative Artificial Intelligence Tools: Advantages and Disadvantages.

Sedat Yeşilyurt[2] Recep Dündar[3] Rümeysa Zeynep Demir[4] Ayça Gülşah Yeşilyurt[5]

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Öz
Bu araştırmanın temel amacı, Sosyal Bilgiler dersinde kullanılabilecek görsel, metin işleyen ve işitsel yapay zekâ uygulamalarının kullanılabilirliğini, bu uygulamaların öğrenme ortamlarındaki avantajlarını ve dezavantajlarını daha önceden gerçekleştirilen akademik çalışmalar aracılığıyla bir bütün olarak tespit etmektir. Bu araştırmada, nitel araştırma yöntemlerinden doküman analizi yöntemi kullanılmıştır. Bu çerçevede araştırmanın amacına uygun olarak elde edilen belgeler çeşitli kıstaslara göre sıralanmış yine amaca uygun olarak elde edilen veriler yorumlanarak sunulmuştur. Üretken yapay zekâ araçları ile türetilen materyallerin Sosyal Bilgiler öğretiminde kullanımı, avantajları ve dezavantajları hakkında yayımlanmış makalelerin incelenmesi amacıyla "Google Akademik" veri tabanında 2023-2024 yılları arasında taranan ve tam metnine ulaşılabilen makaleler tespit edilmiştir. Elde edilen veriler sonucunda doğal dil işleme sistemlerini kullanan uygulamaların, metinden görsel türeten yapay zekâ uygulamalarının, metinden işitsel materyal türeten yapay zekâ uygulamalarının öğrenme ortamlarında giderek artan oranda kullanıldığı tespit edilmiştir. Araştırma bulgularından elde edilen sonuçlar bir bütün olarak değerlendirildiğinde özellikle 2024 yılı itibari ile uygulanmaya başlanan Türkiye Yüzyılı Maarif Eğitim Modelinin uygulanabilirliğini önemli ölçüde arttıracak bu yapay zekâ teknolojilerinin, Sosyal Bilgiler dersinde etkin bir şekilde kullanılabilirliğinin olduğu söylenebilir.

Anahtar Kelimeler: Sosyal Bilgiler, Yapay zekâ, Üretken yapay zekâ, Eğitim teknolojileri

Abstract
The main purpose of this research is to determine the usability of visual, text processing and auditory artificial intelligence applications that can be used in the social studies course, the advantages and disadvantages of these applications in learning environments as a whole through previous academic studies. In this study, document analysis method, one of the qualitative research methods, was used. In this framework, the documents obtained in accordance with the purpose of the research were sorted according to various criteria and the data obtained in accordance with the purpose were interpreted and presented. In order to examine the articles published on the use, advantages and disadvantages of materials derived with generative artificial intelligence tools in social studies teaching, articles that were scanned in the 'Google Academic' database between 2023-2024 and whose full text could be accessed were identified. As a result of the data obtained, it was determined that applications using natural language processing systems, artificial intelligence applications that derive visuals from text, and artificial intelligence applications that derive auditory materials from text are increasingly used in

[1]Bu çalışma, 15-16 Kasım 2024 tarihinde **İzmir Demokrasi Üniversitesi 6. Uluslararası Eğitim Araştırmaları Kongresi (IDU-ICER'24)'nde bildiri olarak sunulmuştur.**

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learning environments when the results obtained from the research findings are evaluated as a whole, it is concluded that these artificial intelligence technologies, which will significantly increase the applicability of the Turkey Century Maarif Education Model, which started to be implemented as of 2024, can be used effectively in the social studies course.

Keywords: Social studies, Artificial intelligence, Generative artificial intellegience, Educational Technologies.

GİRİŞ

Sosyal Bilgiler, geçmişten günümüze ilköğretim düzeyindeki en önemli derslerden biridir. Sosyal Bilgiler dersi Tarih, Coğrafya, Antropoloji, Sosyoloji ve Ekonomi gibi disiplinlerin bir araya getirildiği disiplinlerarası bir yapıya sahiptir (Keskin, 2021). Sosyal Bilgilerin temel amacı, öğrencilerin dünyayı anlamalarını ve mevcut dünyaları hakkında bilinçli kararlar alabilmelerini sağlamaktır. Sosyal Bilgiler dersi içeriği, öğrencilerin diğer insanlarla, kurumlarla ve çevreyle olan ilişkilerini açıklamalarına olanak tanır ve onları geçmişe dair bilgi ve anlayışla donatır. Öğrencilere, üretken problem çözme ve karar verme becerilerinin yanı sıra sorunları değerlendirme ve değer yargıları oluşturma becerileri sağlar (Russell & Waters, 2021). Disiplinlerarası yapısı sebebiyle birçok bilim dalını bir arada barındıran Sosyal Bilgiler dersinde disiplinlerarası bağın doğru şekilde kurulması öğrenmenin kalıcılığını hiç şüphesiz artıracaktır. Sosyal Bilgiler dersi, öğretim teknolojilerinin sıklıkla işe koşulduğu bir yapıda olması sebebiyle (Erdoğan ve Şerefli, 2021), eğitim teknolojilerinin derslerde etkin bir şekilde kullanılmasının önemi büyüktür. Ayrıca bu amaçla örnek etkinlikler yapmak dersin daha çeşitlenmesine imkân sağlayacağından farklı özelliklerdeki öğrencilere hitap edebilir (Turan vd., 2020). Okullarda teknolojik araçların kullanım olanakları arttırılması ve bu araç-gereçlerin paydaşlar tarafından derslerde verimli bir şekilde kullanılmasıyla, Sosyal Bilgilerin geniş içeriğinin teknoloji entegrasyonu ile daha iyi kazandırılabileceği fark edilecektir (Güneş vd., 2021).

21. yüzyılda teknolojideki en önemli gelişmelerden biri de yapay zekâ teknolojileri olduğu söylenebilir. Aslında yapay zekânın kavramsal temellerinin 20. yüzyılın ortalarında atıldığı bilinmektedir (McCarthy, 2007; Jiang vd., 2022). İçinde bulunduğumuz yüzyılda internet teknolojilerindeki hızlı gelişme yapay zekânın da somut anlamda önemli bir yol almasını sağladı. Yapay zekâ teknolojilerinin insan hayatının hemen hemen her kısmına tesir etmektedir. Bu noktada günümüz eğitim-öğretim ortamları da bu gelişmelerden oldukça etkilenmektedir. Konuşma, tanıma, görsel algı, dil çevirisi, karar verme gibi insan zekâsının normal düzeyde gerçekleştiremeyeceği görevleri bilgisayar sistemleri aracılığı yerine getiren yapay zekânın (Güzeldemirci, 2024), bu özellikleri ile eğitim öğretim ortamlarında üretkenlik sıfatı ile önemli ölçüde kullanılmaya başlandığı söylenebilir (Forero-Corba & Benassar, 2024; Alier vd., 2024; Park & Kwon, 2024; Limna vd., 2022; Nalbant, 2021). Üretken yapay zekâ teknolojilerini geleneksel makine ve derin öğrenme teknolojilerinden farklı kılan nokta algoritmik tahminlere dayalı sonuçların ötesinde kendine özgü içerikler üretilmesidir (Bozkurt, 2023). Görüntü, video, ses ve müzik oluşturmada yapay zekâ araçlarının kullanımı, öğrencilerin görsel ve işitsel öğrenme deneyimlerini geliştirebilen çok modlu eğitim materyallerinin üretimini kolaylaştırabilir. Yapay zekâ araçları, derslerin içeriğini özel ihtiyaçlarına uyarlama ve eğitim süreci boyunca bilgileri çeşitli biçimlerde sunma fırsatlarını da sağlamaktadır (Katsouda, 2024; Rovdo, 2024).

Son yıllardaki teknolojik gelişmeler, Sosyal Bilgiler eğitiminde teknoloji kullanımının önemini belirterek yeni teknolojilerin de Sosyal Bilgiler dersine entegre edilmesinin öğretmen, öğrenci ve okul ortamı için faydalı olacağından bahsetmektedir (Karakuş, 2023; Berson & Berson, 2023; Avcı ve Günay, 2024; Burak, 2023). Alanyazın kapsamlı bir şekilde tarandığında Sosyal Bilgiler eğitiminde yapay zekâ teknolojilerinin kullanılmasının eğitim-öğretim süreçlerini olumlu etkilediği görülmektedir (Yetişensoy & Rapoport 2022; Yalçın, 2023; Berson & Berson, 2023). Özellikle, görsel ve işitsel anlamda yapay zekâ uygulamalarının eğitim-öğretim

ortamlarını zenginleştirdiği söylenebilir (Nalbant, 2021; Kenchakkanavar, 2023; Jayadurga & Rathika, 2023; Yalçın, 2023). Bu bakış açısından hareketle bu araştırmanın temel amacı, Sosyal Bilgiler dersinde kullanılabilecek görsel, metin işleyen ve işitsel yapay zekâ uygulamalarının kullanılabilirliğini, bu uygulamaların eğitim öğretim ortamlarındaki avantajları ve dezavantajlarını daha önceden gerçekleştirilen akademik çalışmalar aracılığıyla bir bütün olarak tespit etmektir. Araştırmanın temel problemi olarak ''*Sosyal Bilgiler eğitiminde üretken yapay zekâ araçlarının kullanımı nasıl gerçekleşebilir?*'' olarak belirlenmiştir. Bu çerçevede temel olarak aşağıdaki altı soruya cevap aranmıştır:

1) Çalışma grubuna yer alan araştırmalar hangi yıllarda yayımlanmıştır?
2) Çalışma grubuna yer alan araştırmalar hangi ülkelerde yayımlanmıştır?
3) Çalışma grubuna yer alan araştırmaların temel sonuçları nelerdir?
4) Sosyal Bilgiler öğretiminde hangi yapay zekâ uygulamalarından yararlanılabilir?
5) Sosyal Bilgiler öğretiminde metin tabanlı, görsel, işitsel ve yapay zekâ uygulamaları nasıl yararlanılabilir?
6) Sosyal Bilgiler öğretiminde yapay zekâ uygulamalarından yararlanılmasının avantajları ve dezavantajları nelerdir?

Araştırmanın Amacı

Bu araştırmanın temel amacı eğitim-öğretim ortamlarında giderek artan bir oranda kullanılmaya başlayan yapay zekâ uygulamalarının Sosyal Bilgiler dersindeki kullanılabilirliğini daha önceden gerçekleştirilmiş çalışmalar doğrultusunda tespit etmek ve bu çerçevede yeni bakış açıları geliştirmektir.

YÖNTEM

Araştırmanın Modeli

Bu araştırmada, nitel araştırma yöntemlerinden biri olan doküman analizi yöntemi kullanılmıştır. Doküman analizi, araştırılan konu ile ilgili dokümanların bilimsel esaslara uygun olarak incelenmesi temel alan bir yaklaşıma sahiptir (Kıral, 2020). Doküman analizi, yazılı belgelerin içeriklerini titizlikle ve sistematik bir şekilde analiz etmek için kullanılan bir araştırma yöntemi olarak da tanımlanabilir (Wach & Ward, 2013). Bu yöntem ile; belgeler, raporlar, her türlü bilimsel içerik ve benzeri yazılı kaynakları sistematik bir şekilde değerlendirmesi amaçlanmaktadır. Bu doğrultuda, mevcut bilgilerin kapsamlı bir şekilde analiz edilmesi ve araştırma kapsamında belirlenen hedeflere ulaşılması amaçlanmaktadır. Bowen (2009) doküman analizinin sürecini; dokümanları bulma, seçme, değerlendirme ve sentezleme olarak belirtmektedir. Doküman analizinde araştırmacı analiz öncesinde çeşitli kategoriler oluşturur (Fraenkel vd., 2011). Bu araştırmada oluşturulan kategoriler eğitim-öğretim ortamlarında; üretken yapay zekâ ile görsellerden yararlanma, üretken yapay zekâ ile metinlerden yararlanma, üretken yapay zekâ ile oluşturulan işitsel materyallerden yararlanma olarak sıralanabilir. Bu çerçevede araştırmanın amacına uygun olarak elde edilen belgeler çeşitli kıstaslara göre sıralanmış yine amaca uygun olarak elde edilen veriler yorumlanarak sunulmuştur.

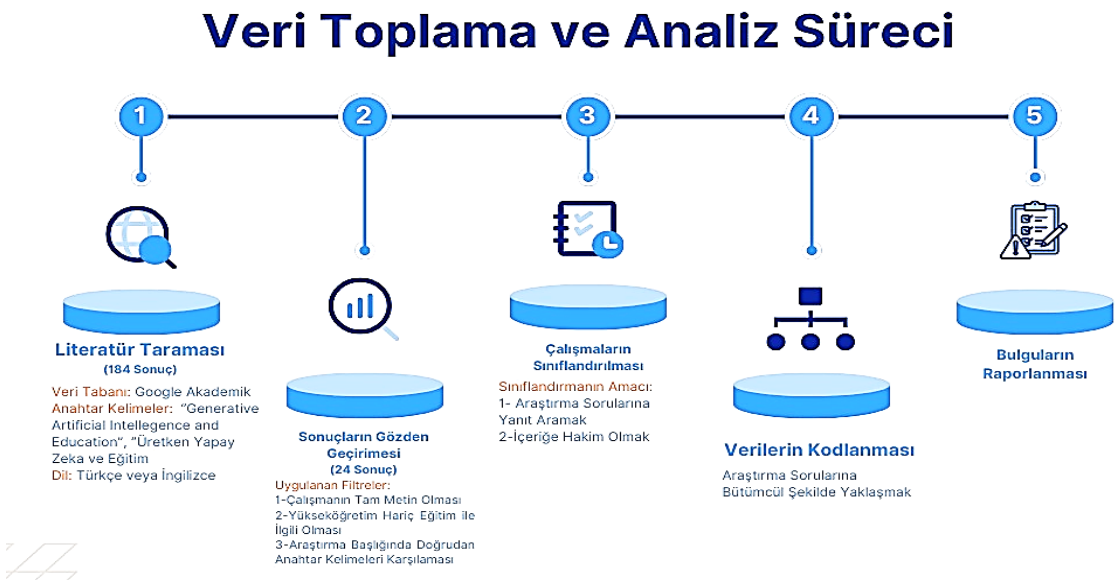
Verilerin Toplanması ve Analizi

Üretken yapay zekâ araçları ile türetilen materyallerin Sosyal Bilgiler öğretiminde kullanımı avantajları ve dezavantajları hakkında yayımlanmış makalelerin incelenmesi amacıyla *"Google akademik"* veri tabanında taranan ve tam metnine ulaşılabilen araştırmalar tespit edilmiştir. Çalışmanın örneklem seçiminde amaçlı örnekleme yöntemlerinden ölçüt örnekleme tekniği kullanılmıştır. Makalelerin seçiminde aşağıdaki ölçütlere uygunluk aranmıştır. Bu ölçütler şu şekilde sıralanmaktadır:

1. Sosyal Bilgiler eğitimi ve/veya eğitim alanında olması,

2. Tam metin ulaşılabilir makale olması,
3. *"Generative artificial intelligence and education", "Üretken yapay zekâ ve eğitim"* anahtar sözcükler ile taranma sonucunda listelenmesi,
4. Türkçe veya İngilizce olması.

Makalelerin analizi, daha önceden hazırlanan forma belirlenen başlıklar altında tasnif edilerek frekans ve yüzde tabloları ile uygun grafiklerle sunulmuştur. Elde edilen veriler Microsoft Excel programı aracılığıyla analiz edilerek ilgili grafiklerde sunulmuştur. Veri toplama ve analiz süreçleri görselleştirilmiş ve Şekil 1'de detaylı olarak sunulmuştur.



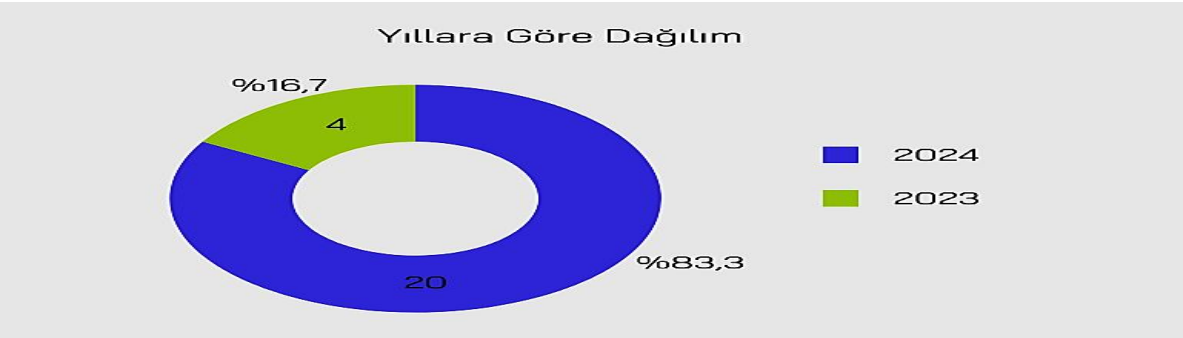
Şekil 1. Veri Toplama ve Analiz Süreci

BULGULAR

Veri analizinin ardından tespit edilen bulgular araştırma sorularını ayrı ayrı yanıtlayacak şekilde bu kısımda sunulmuştur.

Çalışma Grubunda Yer Alan Araştırmaların Yıllara Göre Dağılımı Nasıldır?

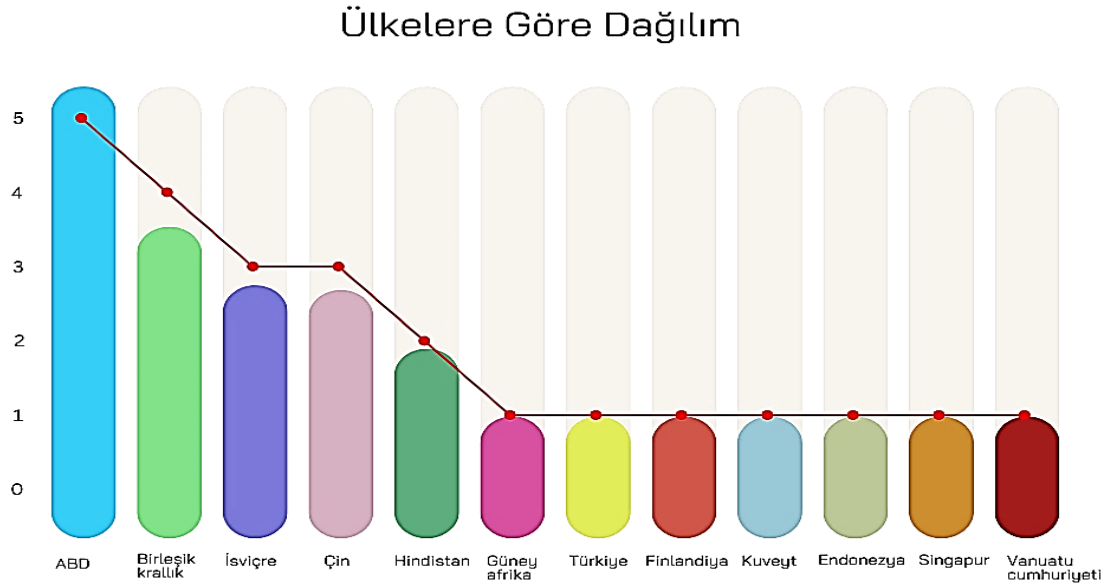
Şekil 2'de görüldüğü üzere üretken yapay zekâ ve eğitim (Generative artificial intelligence and education) konusunu temel alan toplamda 24 araştırma çalışma grubunda yer almaktadır. Çalışma grubuna dâhil edilen araştırmaların büyük çoğunluğunun 2024 yılında (f=20) yayımlandığı; buna karşın 2023 yılında (f=4) yayımlanan çalışmaların sayısal olarak sınırlı kaldığı dikkat çekmektedir.



Şekil 2. Yıllara Göre Dağılım

Çalışma Grubunda Yer Alan Araştırmaların Ülkelere Göre Dağılımı Nasıldır?

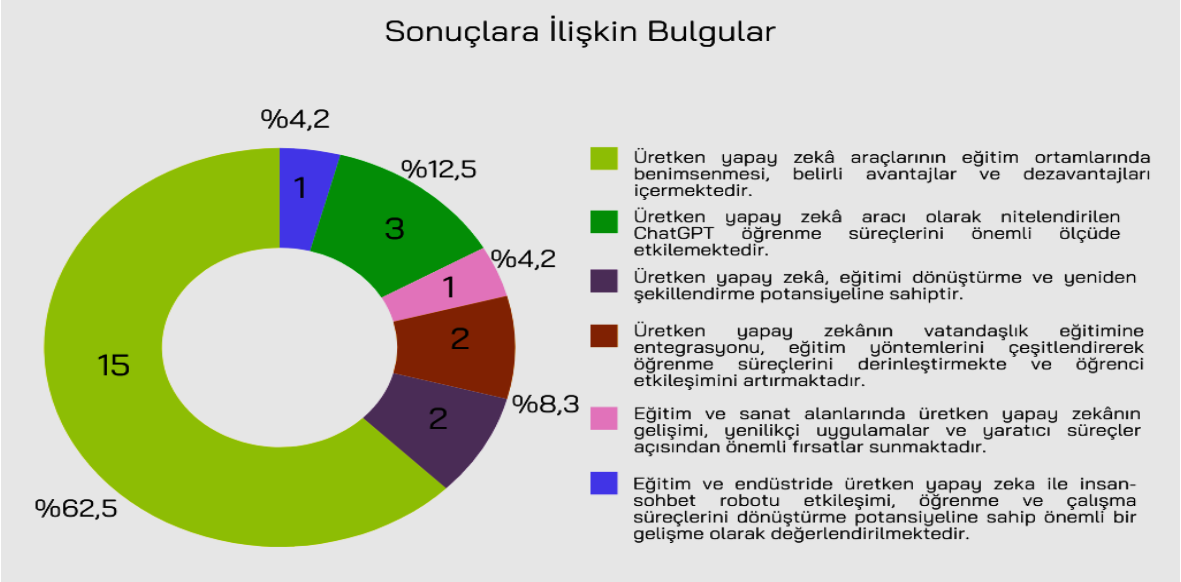
Şekil 3'te, çalışma grubunda yer alan araştırmaların ülkelere göre dağılımına yönelik bulgular yer almaktadır. Amerika Birleşik Devletleri (f=5), bu alanda sayısal olarak ön plana çıkmaktadır. Diğer yandan, Birleşik Krallık (f=4), Çin ve İsviçre'nin de (f=3) diğer ülkelere göre görece daha fazla çalışma yaptığı görülmektedir. Türkiye'de ise yalnızca bir çalışmanın yapıldığı tespit edilmiştir.



Şekil 3. Ülkelere Göre Dağılım

Çalışma Grubunda Yer Alan Araştırmaların Sonuçlara İlişkin Bulgular Nelerdir?

Şekil 4'te çalışma grubunda yer alan araştırmalarda ulaşılan sonuçlara yönelik bulgular sunulmaktadır. Üretken yapay zekâ araçlarının eğitim ortamlarında benimsenmesi, belirli avantajlar ve dezavantajları içermektedir (f=15) sonucu sayısal olarak belirgin bir şekilde öne çıkmaktadır. Özellikle, çalışma grubuna dâhil edilen araştırmalarda, üretken yapay zekânın avantajları ve dezavantajları birlikte değerlendirilmektedir. Örneğin, Rane (2023) çalışmasında, üretken yapay zekâ araçlarının öğrencilere ödev hazırlama sürecinde bir dizi fayda sağladığı, ancak bu araçlarla hazırlanan ödevlerin özgünlüğü ve kalitesinin endişe kaynağı olarak değerlendirildiği belirtilmektedir. Ngwenya (2024) tarafından yapılan çalışmada da benzer sonuçlara ulaşılmıştır. Diğer yandan, çalışmalarda üretken yapay zekâ aracı olarak nitelendirilen ChatGPT'nin öğrenme süreçlerini önemli ölçüde etkilediğine (f=3) yönelik bulgulara ulaşılmıştır. Örneğin, Baidoo ve Ansah (2023) çalışmalarında, ChatGPT'nin kişiselleştirilmiş ve etkileşimli öğrenmeyi teşvik ettiğini, ancak gizlilik ihlalleri ve yanlış bilgi üretme gibi bir dizi olumsuz özelliği de bünyesinde barındırdığını belirtmişlerdir. Bununla birlikte, sayısal olarak en az ulaşılan sonuçlar arasında eğitim ve sanat alanlarında üretken yapay zekânın gelişimi, yenilikçi uygulamalar ve yaratıcı süreçler açısından önemli fırsatlar sunmaktadır (f=1), eğitim ve endüstride üretken yapay zekâ ile insan-sohbet robotu etkileşimi, öğrenme ve çalışma süreçlerini dönüştürme potansiyeline sahip önemli bir gelişme olarak değerlendirilmektedir (f=1) yer almaktadır. Çalışma grubunda yer alan araştırmaların sonuçları genel olarak değerlendirildiğinde, çeşitli bulgulara ulaşıldığı tespit edilmiştir.



Şekil 4. Sonuçlara İlişkin Bulgular

Sosyal Bilgiler Öğretiminde Hangi Yapay Zekâ Uygulamalarından Yararlanılabilir?

Sosyal Bilgiler dersi doğası itibari ile birçok bilim dalından bir arada yararlanmaktadır. Bu özelliği ile ortaokul seviyesindeki birçok dersten farklı bir özellik taşımaktadır. Bu durum Sosyal Bilgiler dersinde birçok yapay zekâ uygulamasından yararlanılmasını kolaylaştırabilir. Sosyal Bilgilerde; dersi somutlaştırmak, yaratıcılığı arttırmak, özgün ve bireysel öğrenmeyi desteklemek, etkinlik temelli ders planlarını zenginleştirmek adına görsel, metin tabanlı, işitsel ve yardımcı diğer yapay zekâ uygulamaları kullanılabilir.



Şekil 5. Üretken Yapay Zek*â* Araçları

Metin Tabanlı Yapay Zekâ Uygulamaları

Makine öğrenimi algoritmaları ve doğal dil işleme teknikleri yapay zekâ sistemlerinin çok miktardaki eğitim verisini analiz etmesini sağlayarak öğrenme deneyimlerinin bireysel ihtiyaçlara ve tercihlere göre özelleştirilmesini sağlamaktadır. Bu durum, teknolojinin hızla ilerlemesi ve küreselleşme ile eğitim dâhi olmak üzere birçok sektörü önemli ölçüde etkilemiştir. Doğal dil işleme (natural language processing) sistemlerini kullanarak eğitim öğretim ortamlarına katkı sağlayan birçok yapay zekâ uygulaması olduğu söylenebilir.

Bunlardan en bilineni hiç şüphesiz ki ChatGPT'dir. *ChatGPT* dışında *Google Gemini, Microsoft Copilot, Jasper.ai, Claude, Perplexity* gibi uygulamalar da Sosyal Bilgiler eğitiminde faydalanılacak diğer uygulamalar arasındadır.

Yapay Zekâ Teknolojisi ile Görsel Türetilebilen Uygulamalar

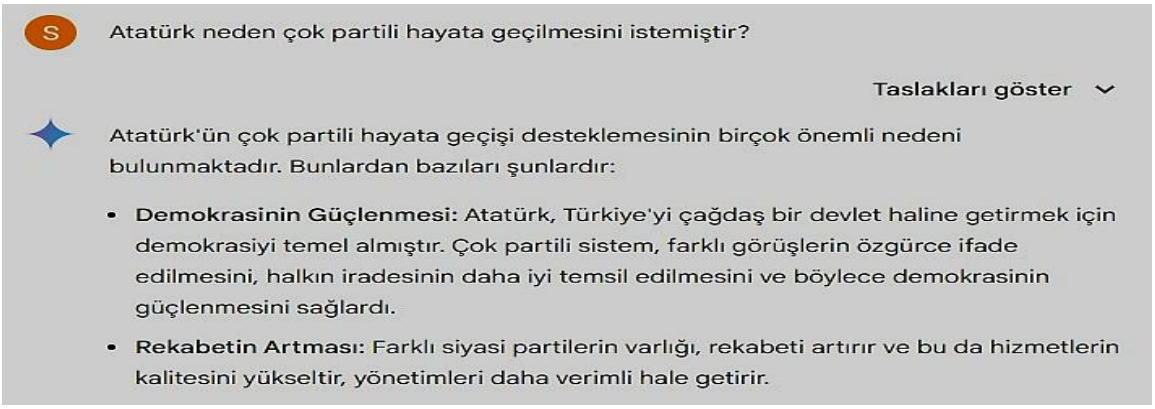
Benzersiz görsel üretebilen *DALL-e, Midjourney, Imagine 2*, *Stability.ai, Leonardo.ai, Adobe Firefly, İdeogram, Stable Diffusion*, *Generative AI by Getty, FLUX.1* gibi üretken yapay zekâ uygulamaları anahtar kelimeler ile tanımlandıktan sonra türetilen görseller ile kullanıcılara orijinal görsel materyaller sağlamaktadır. Metinden görsel türetme *(text to image)* tabanlı DALL-e doğal dilde tanımlanmış ifadelere dayalı gerçekçi görüntüler ve sanat eserleri üretebilen yeni bir yapay zekâ sistemi olarak tanımlanabilir. OpenAI tarafından geliştirilen DALL-e, ürün tasarımından eğitime kadar çeşitli alanlarda kullanılabilen yüksek kaliteli, ayrıntılı görseller üretmek için son teknoloji derin öğrenme modelini kullanmaktadır. Bir diğer uygulama olan Midjourney de tıpkı DALL-e ile benzer teknolojileri kullanarak görsel türetebilen araçlar arasındadır. Daha önce bahsedilen tüm uygulamalar DALL-e ve Midjourney ile benzer özellikler taşımakla beraber hem mobil hem de web siteleri aracılığı ile kullanıcılarını hizmet vermeye devam etmektedir.

Yapay Zekâ Teknolojisi ile İşitsel Materyal Türetilebilen Uygulamalar

Eğitim öğretim ortamlarında hiç şüphesiz ki işitsel kaynakların kullanımının önemi oldukça yüksektir. Bu ve benzeri uygulamaların kullanımının öğrencilerin yaratıcılığını ve kültürel anlayışını önemli ölçüde artırabileceğini elde edilen bulgular arasındadır. Bu çerçevede metinden ses üretme *(text to music)* teknolojilerinin öğrenme ortamlarında kullanımının yaygınlaşmaya başladığı görülmektedir. Bu amaçla mobil ve web aracılığı ile hizmet sağlayan en popüler uygulamalardan biri de *Suno.ai* olarak bilinmektedir. Suno.ai'nin dışında metinden müzik üretme teknolojisini kullanan *Riffision, Beatoven.ai, Aiva.ai, Boomy, Mubert, MusicLM, Udio, Songr, Musicfy, Loudly* gibi yapay zekâ uygulamaları da bulunmaktadır.

*Sosyal Bilgiler Öğretiminde Metin Tabanlı, Görsel ve İşitsel Yapay Zekâ Uygulamalarından Nasıl Yararlanılabil***ir?**

ChatGPT'nin öncülüğünü yaptığı metin tabanlı yapay zekâ uygulamalarından birçok derste olduğu gibi Sosyal Bilgiler dersinde de yararlanılabilir. Doğrudan ChatGPT'den yararlanılmasının yanı sıra ChapGPT altyapısını kullanan birçok ara yapay zekâ uygulamaları aracılığıyla türetilebilecek Chatbotlar ders içeriğini basit arayüzler ile öğrenciye sunabilir. Öğrenciler, zamandan ve mekândan bağımsız olarak ders için türetilen Chatbotlarına ulaştıktan sonra müfredat kapsamındaki bilgilere kolaylıkla erişebilir, sorular sorabilir, hatta amaca uygun olarak hazırlanmış Chatbotlardan analiz ve sentez basamaklarında bilgi edinebilir. Kısacası, ChatGPT ve doğal dil işleme sistemlerini kullanan diğer yapay zekâ uygulamaları gerçekleştirdikleri bu hizmetler ile Sosyal Bilgiler öğretiminde otomatik soru-cevap sistemi olarak kullanılabilir, bu sistemler öğrencilerin sorduğu soruları yanıtlayabilir ve bağlamsal bilgiler sağlayarak, bir asistan görevi görebilir. Örnek verilmesi gerekirse 7. sınıf Sosyal Bilgiler ders kitabının 6. ünitesinin değerlendirme sorularına vermiş olduğu yanıtlar şekil 6'da yer almaktadır.



Şekil 6. ChatGPT'nin Sosyal Bilgiler Ders Kitabındaki Değerlendirme Sorusuna Verdiği Yanıt

Sosyal Bilgiler dersinde metinden görsel türeten araçlardan da yararlanmak mümkündür. Müfredat kapsamında işlenen bir dersten çıkarılacak kavram haritaları, yargı cümleleri, ifadeler bir araya getirilip görsel işleyen herhangi bir yapay zekâ uygulamasında işlendiğinde ilgili uygulama sisteme girilen ifadeler doğrultusunda benzersiz bir görsel türetebilir. Bu her bir öğrencinin öğrenme düzeyine işaret edebilecek çıktılarını karşımıza çıkarabileceği gibi ders kazanımlarının ne kadar aktarılabildiğini test edecek bir değerlendirme yöntemi olarak da kullanılabilir. Bu amaçla başta DALL-e ve Midjourney gibi görsel türetme yeteneğine sahip yapay zekâ uygulamaları imgeleri ve kavramları görselleştirmede öncü bir rol oynayabilir; bir metnin görsel bağlamını ve duygusal derinliğini yeniden yaratmaya yardımcı olabilir. Görsel bileşen içeren metinleri analiz etmek ve yorumlamak için değerli bir araç olmasının yanı sıra imgeler ve duygular bağlamında edebi eserleri anlamanın yeni yollarını açmaya olanak tanıyabilir. Görsel işleyen yapay zekâ uygulamalarının Sosyal Bilgiler dersinde nasıl kullanılacağına ilişkin bir örnek verilmesi gerekirse; 7. sınıf Sosyal Bilgiler ders kitabının 6. ünitesindeki Atatürk ve Türk Demokrasisinin Gelişimi konu başlığından elde edilen (Monarşi, Demokrasi, Cumhuriyet, Seçim, Oy, Türkiye) kavramların DALL-e adlı uygulama aracılığı ile kullanılması ile türetilen benzersiz görsel şekil 7'de yer almaktadır:

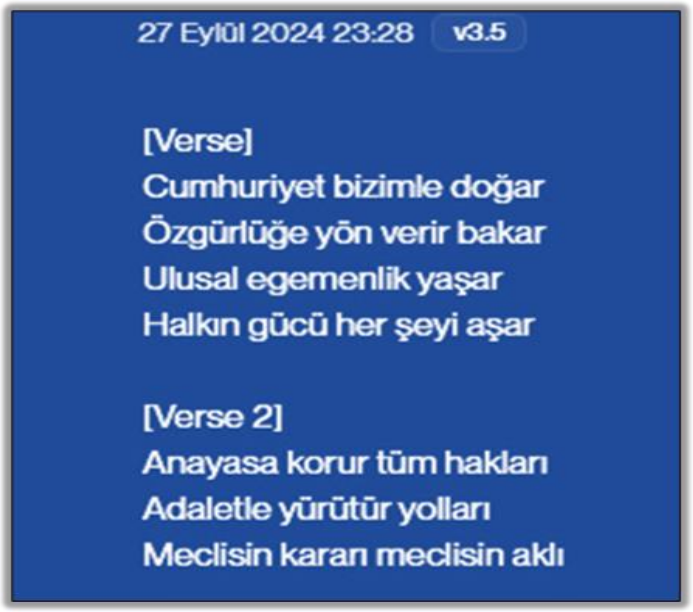


Şekil 7. DALL-e'nin Türk Demokrasisinin Gelişimine Dair Yaratmış Olduğu İllüstrasyon.

Görüldüğü üzere üretken yapay zekâ araçları uygun tasvirler doğrultusunda Sosyal Bilgiler dersinin somutlaştırılması konusunda önemli içerikler üretebilme becerisine sahiptir. Bu

içerikler her öğrencinin kendi tasvirleri sonucunda özelleştirilebilirken dersi de ilgi çekici hale getirmektedir.

Sosyal Bilgiler dersinde ses veya müzik türetebilen üretken yapay zekâ araçlarından önemli ölçüde yararlanılabilir. Özellikle Suno.ai uygulaması ile kullanıcılar kavram, konu ve tasvirleri uygulama aracılığı ile benzersiz bir şarkıya ve müzikal değeri olan herhangi bir materyale çevirebilmektedir. 7. sınıf Sosyal Bilgiler ders kitabının 6. ünitesinin giriş kısmındaki kavram, değerler ve beceriler bölümünden elde edilen 5 kavramın (Cumhuriyet, özgürlük, meclis, anayasa, ulusal egemenlik) kullanılması ile türetilen şarkı sözü aşağıdaki gibidir. İlgili uygulama sadece şarkı sözü hazırlamakla kalamayıp ayrıca ilgili sözlere beste de yaparak kullanıcıların bu çalışmayı dinlemesine de imkân vermektedir.



Şekil 8. Suno.ai'nin Türettiği Şarkı Sözleri

Sosyal Bilgiler Dersinde Yapay Zekâ Uygulamalarından Yararlanılmasının Avantajları ve Dezavantajları Nelerdir?

Sosyal Bilgiler dersinde yapay zekâ araçlarının kullanmanın hem avantajları hem de dezavantajlarının olduğu görülmektedir. Sosyal Bilgiler dersinde kullanılabilecek yapay zekâ araçları, öğretmenlerin öğrencilerle bağlantı kurması ve etkileşimde bulunması için zaman kazandırmakla beraber, kişisel ve anlamlı öğrenme fırsatları yaratmaya da yardımcı olmaktadır. Ayrıca, sohbet robotlarının temel kavramların öğrenilmesini hızlandırdığı da birçok çalışmada ifade edilmektedir. Sosyal Bilgiler dersinde, geçmiş yaşantıların illüstrasyonlar ile öğrencinin temel algıları doğrultusunda yeniden canlandırılması konusunda yapay zekâ uygulamalarından yararlanabileceği gibi basit ve ileri düzey veri analizlerin de benzer uygulamalar ile yapılması mümkün görünmektedir. Sosyal Bilgiler dersinde, öğrenmeyi kişiselleştirmek, öğrencilerin ihtiyaçlarına uyum sağlamak ve daha derin öğrenmeyi sağlamak için üretken yapay zekâ uygulamalarının kullanılmasının önemli avantajlar sağladığı görülmektedir. Sosyal Bilgiler öğretiminde yapay zekâ uygulamalarından yararlanmanın avantajlarının yanı sıra dezavantajlarının da olduğu görülmektedir. Aslında Sosyal Bilgiler eğitiminde yapay zekâ uygulamalarının kullanımında karşılaşılacak dezavantajlar diğer öğretim alanlarında karşılaşılabilecek durumlarla benzerlik göstermektedir. Özellikle mahremiyet konusunda sıkça tartışmaların olduğu görülmektedir. Kişisel verilerin izinsiz ve kontrolsüzce işlenmesi mahremiyet ile ilgili eleştirilerin başında gelmektedir. Bir diğer eleştiri konusu ise teknik gereksinimlere tüm öğrencilerin ulaşamayabilir olması ile ilgilidir ki bu

durum fırsat eşitliği ilkesini de ihlal edebilir. Öğrencilerin yaratıcılıklarının önlendiğinin düşünülmesi, teknolojiye bağımlılığın arttırıldığının ifade edilmesi gibi durumlar da yapay zekâ uygulamalarının Sosyal Bilgiler dersinde kullanılması konusundaki diğer dezavantajlar olarak sayılabilir.

SONUÇLAR ve TARTIŞMA

Bu araştırma, Google Akademik'te erişilebilen üretken yapay zekâ ile türetilen materyallerin Sosyal Bilgiler eğitiminde kullanımının yanı sıra bu durumun avantajları ve dezavantajlarını inceleyen bilimsel çalışmaların doküman analizi yöntemi ile incelenmesini konu almaktadır. İncelenen çalışmalar sonucunda, üretken yapay zekâ teknolojisinin henüz çok yeni olmasına rağmen eğitim-öğretim ortamlarında oldukça geniş bir kullanım alanının olduğu dikkat çekmektedir. 21. yüzyılda öğrenciler bilgiye daha hızlı erişmekte ve dijital teknolojilerle daha entegre bir yaşam sürmektedir. Bu açıdan bakıldığında, çağın gerektirdiği donanıma sahip, bilgiye hızlı ulaşabilen, her geçen gün dijitalleşen dünyamızda topluma, dünyaya ve gelişen teknolojiye ayak uydurabilen bireyler ve vatandaşlar yetiştirebilmek hem eğitim sisteminden hem de eğitim sisteminin bir parçası olan Sosyal Bilgiler öğretiminin de sorumluluğu olarak kabul edilebilir (Çetin, 2022).

Millî Eğitim Bakanlığı'nın 2024 yılından itibaren uygulamaya koyduğu ''Türkiye Yüzyılı Maarif Modeli'' çerçevesinde yayımlanan yeni Sosyal Bilgiler dersi öğretim programında birçok okuryazarlık becerisi ile dijital okuryazarlık, becerilerine de yer verilmiştir. Yine aynı öğretim programında dijital içerik üretiminin de öneminden bahsedilmektedir (M.E.B, 2024). Sosyal Bilgiler eğitimi geniş ve çok disiplinli bir müfredata sahip olduğu için bu dersin konularının öğretiminde yapay zekâ gibi yenilikçi teknolojiler kullanılabilir. Özellikle, Sosyal Bilgiler derslerinin kapsamlı yapısı nedeniyle, öğretmenler genellikle öğrenme ortamlarında pasif öğrenme yöntemlerine yönelmektedir (İlter, 2018; Yaylak, 2020). Bu durumun, öğrencilerin derse yönelik motivasyonlarının azalmasına neden olduğu söylenebilir. Bu noktada yapay zekâ uygulamaları, bu sorunların üstesinden gelmek için etkili bir araç olarak kullanılabilir. Yapay zekâ uygulamaları, öğrencilerin derse yönelik motivasyon düzeylerini ölçerek (Yavuzarslan, 2023), her öğrencinin baskın zekâ alanlarına, ilgi ve ihtiyaçlarına hitap edebilecek etkinlikler tasarlayabilir. Sosyal Bilgiler öğretmenleri, uygulamalı yapay zekâ öğretim etkinliklerinde navigasyon ve çeviri uygulamaları, çeşitli öneri sistemleri, görüntü, ses tanıma ve sohbet robotları yanı sıra bu materyalleri türetebilen yapay zekâ destekli teknolojilerden de yararlanabilirler (Yetişensoy & Rappaport, 2023).

Çalışma grubunda yer alan 24 araştırmanın büyük çoğunluğunun Amerika Birleşik Devletleri'nde yayımlandığı görülmektedir. Her ne kadar yapay zekâ teknolojilerinde Çin'in büyük bir atılım gerçekleştirdiği çeşitli araştırmalarda ifade edilse de Çin'in ilgili alandaki araştırmaların yayımlanması konusunda Amerika Birleşik Devletleri'nden geride kaldığı görülmektedir. Türkiye'de ise ilgili alanda yalnızca bir çalışmanın olduğu ancak gelişmiş veya gelişmekte olan birçok ülkede bu alanda henüz herhangi bir çalışma olmadığı da düşünülürse bu durumun kayda değer bir istatistik olduğu ifade edilebilir.

Üretken yapay zekâ kavramı çalışma grubu özelinde ilk defa 2023 yılında alanyazında kullanılan bir kavram olarak dikkat çekmektedir. Salt yapay zekâ ve eğitim ilişkisini inceleyen akademik çalışmaların gerçekleştirildiği tarihler daha eskiye dayansa da üretken yapay zekâ ve eğitim ilişkisini inceleyen çalışmaların 2023 yılı itibari ile alanyazında yerini aldığı söylenebilir. İlgili alanda gerçekleştirilen çalışmaların 2024 yılı itibari ile çarpıcı bir şekilde arttığı elde edilen veriler doğrultusunda ulaşılan sonuçlar arasındadır. İleriki yıllarda bu alanda daha fazla çalışma yapılacağı öngörülebilir.

Üretken yapay zekâ ve eğitim konusunu temel alan çalışmaların sonuçlarına ilişkin bulgular analiz edildiğinde, bu araçların öğrenme ortamlarında kullanımının belirli avantajlar ve dezavantajlar içerdiği sonucuna ulaşılmıştır. Özellikle ChatGPT'nin öğrenme ortamları üzerine

bir dizi olumlu etkisinin bulunduğu, çalışmalarda ulaşılan sonuçlar arasındadır. Alanyazın kapsamlı bir şekilde analiz edildiğinde, yapay zekâ uygulamalarının avantajları ve dezavantajları birlikte değerlendirilmektedir. Örneğin, Lo (2023) çalışmasında, ChatGPT'nin ders materyali oluşturma ve iş birliğini kolaylaştırma gibi bir dizi olumlu özelliklere sahip olduğu vurgulamakla birlikte, doğruluğu kesin olmayan bilgiler üretebilme riskinin de bulunduğu belirtmiştir. Yeşilyurt vd. (2024) tarafından yapılan çalışmada, Türkiye'de yapay zekâ ve eğitim ilişkisini temel alan toplam 31 lisansüstü tez derinlemesine incelenmiştir. Bu tezlerde, özellikle yapay zekâ uygulamalarının hem olumlu hem de olumsuz etkilere sahip olduğu, sıklıkla ulaşılan sonuçlar arasında yer almıştır. Elde edilen bu sonuçlar araştırma bulgularımızla tutarlılık göstermektedir. Bu bağlamda, yapay zekâ uygulamalarının yeni ve güncel bir konu olması nedeniyle, eğitim kurumlarına yönelik olumsuz etkilerinin daha kapsamlı ve derinlemesine araştırılması gerektiği sonucuna ulaşılmaktadır.

Bu çerçevede araştırmanın dördüncü problem cümlesi doğrultusunda Sosyal Bilgiler öğretiminde kullanılabilecek çeşitli yapay zekâ uygulamalarının olduğu görülmektedir. Sosyal Bilgiler öğretiminde doğal dil işleme uygulamalarının sıklıkla kullanıldığı, özellikle Sosyal Bilgiler dersinde kullanılabilecek Chatbotların geliştirildiği, bu uygulamalardan faydalı sonuçlar alındığı görülmektedir. Yetişensoy (2022) çalışmasında, Chatbotların Sosyal Bilgiler eğitiminde eğitsel potansiyelini ortaya koymak amacıyla *"SosyalciBot"* isimli bir uygulama geliştirmiştir. Karma araştırma yöntemi kullanarak hazırlanan çalışmada, Chatbotların öğrencilere etkisini tespit etmek amaçlanmıştır. Araştırma sonuçlarına göre öğrencilerin son test ve kalıcılık testi puanlarında anlamlı artışlar görülmüştür. ChatGPT ve benzer yapay zekâ uygulamaları aracılığıyla oluşturulan Chatbotların eğitim öğretim ortamlarında kullanımının yaygınlaştığı yine aynı araştırmada ifade edilmektedir. ChatGPT dışında kullanılan diğer doğal işleme uygulamaları da sıklıkla öğrenme ortamlarında test edilmektedir. *Google Gemini, Microsoft Copilot, Jasper.ai, Claude, Perplexity* gibi uygulamalar doğal dil işleme yöntemini kullanarak yararlanılan diğer uygulamalar olarak dikkat çekmektedir (Chen, 2024; Yugandahar & Rao, 2024; Bailey, 2023; De Silva vd., 2024). Bilindiği üzere Sosyal Bilgiler eğitimi öğrencilere kültürel okuryazarlık becerisini kazandırma açısından temel bir rol oynamaktadır. Kültürel okuryazarlık, bireylerin kendi kültürel kimliklerini anlama ve farklı kültürlere empatik bir yaklaşım sergileme yetisini içerir (Kafadar ve Şan, 2021). Bu bağlamda öğrencilerin kültürel okuryazarlık becerilerinin geliştirilebilmesinde dil öğretim robotları önemli bir pedagojik strateji olarak kullanılabilir. Bu robotlar, farklı ülkelerde yaşayan insanların dillerini öğrencilere tanıtarak dilin kültürel bağlamı içerisinde öğrencilerin kültürel çeşitliliği kavramalarını ve bu çeşitlilikle etkileşimde bulunmalarını teşvik edebilir. Örneğin, Fish Robotic tarafından geliştirilen *"Elias"* bir dil öğrenme robotu olarak iletişim becerilerini eğlenceli ve ilgi çekici bir biçimde geliştirmektedir (Öngöz, 2023). Doğal dil işleme yöntemini kullanan yapay zekâ uygulamalarının dışında ders materyali olarak kullanılabilecek benzersiz görseller türetebilen yapay zekâ uygulamaları da öğrenme ortamlarında sıklıkla kullanılmaya başlanmıştır. Öncülüğünü, *DALL-e, Midjourney* gibi yapay zekâ uygulamalarının yürüttüğü metinden görsel türetebilen yapay zekâ uygulamalarına son zamanlarda *Adobe Firefly*, *Imagine 2*, *Stability.ai, Leonardo.ai* gibi uygulamalarının da dâhil olduğu söylenebilir. Çeşitli araştırmalarda metinden görsel türetebilen yapay zekâ uygulamalarının öğrenme ortamlarında kullanıldığı ve elde edilen sonuçların öğrenme ortamlarına ve öğrencilere önemli katkılar sağladığı ifade edilmiştir (Vartianinen vd., 2023; Ringvold, 2024; Fannoni, 2023). Metinden veya veriden görsel türetebilme teknolojisi her geçen gün kendini geliştirmekte ve özellikle de öğrenme ortamlarında daha anlamlı sonuçlar ortaya koymaya başlamaktadır (Şen, 2021). Derevyanko & Zalevska'nın (2023) yaptıkları araştırmada, Midjourney, Stable Diffusion ve DALL-e gibi üretken yapay zekâ uygulamalarının kullanımının öğrenciler için eğitim sürecindeki uygulama basamağında önemli bir potansiyele sahip olduğunu ifade edilmektedir. Aynı çalışmada bu uygulamaları öğrenme sürecine entegre etmenin, öğrenme verimliliğini arttırmaya, zamandan tasarruf etmeye ve oluşturulan projelerin kalitesini iyileştirmeye yardımcı olabileceği de belirtilmektedir. Sosyal Bilgiler öğretiminde yararlanılabilecek diğer bir üretken yapay zekâ teknolojisinin ise metinden ses türetebilen yapay zekâ uygulamaları

olduğu söylenebilir. Özellikle Suno.ai adlı üretken yapay zekâ uygulamasının öğrenme ortamlarındaki kullanımının öğrencilerin dil gelişimini, kültürel anlayışını, yaratıcılık seviyelerini önemli ölçüde etkilediği çeşitli araştırmalarda ifade edilmektedir (Helmanto & Dayana, 2024; Phalaguna, 2024). Suno.ai, müzik oluşturmayı kolaylaştırmak için tasarlanmış gelişmiş bir yapay zekâ aracı olarak tanımlanabilir. Kullanıcı tarafından sağlanan metinsel açıklamalardan şarkı sözleri ve vokal melodileri de dâhil olmak üzere sözleri ile şarkıları üretebilen Suno.ai gelişmiş yapay zekâ modellerini kullanmaktadır (Rincon Yepes, 2024).

Sosyal Bilgiler öğretiminde; doğal dil işleyen, metinden görüntü türetebilen, metinden müzik türetebilen başta olmak üzere birçok yapay zekâ teknolojisinden temel bilgi teknolojilerine sahip olan öğretmenler ve öğrenciler kolaylıkla faydalanabilir. ChatGPT ve Gemini gibi doğal dil işleme teknolojisine sahip yapay zekâ uygulamaları, hem mobil hem de genel ağ üzerinden ulaşılabilen, rutin üyelik süreçlerinin ardından temel seviyelerde ve ücretsiz hizmet alınabilen uygulamalardır. Bu uygulamalara erişildikten sonra arayüzlerindeki komutlar takip edilerek talep edilen bilgiye eş zamanlı olarak ulaşılabilir. Doğal dil işleme teknolojisine sahip uygulamalar benzer teknolojiyi kullansalar da farklı amaçlar için de hizmet verebilirler. Örneğin, ders müfredatına ilişkin herhangi bir metni bir bot aracılığı ile işleyip metne bağlı kalarak analizler yapabilir, metne bağlı kalarak sorulacak sorulara otomatik yanıt verebilir. Bu uygulamalar kullanıcıları tarafından 'eğitildikleri' takdirde çok daha olumlu sonuçlar alınabilir. Metinden görüntü türetebilen uygulamalar da doğal dil işleme teknolojilerini kullanan uygulamalarla benzer prosedürleri kullanmaktadır. DALL-e, Midjourney, Adobe Firefly gibi uygulamalar tasvirler, tanımlamalar veya çeşitli yazılı ifadeler doğrultusunda elde edilen veriyi benzersiz bir görsele dönüştürerek imgeleri ve ifadeleri somutlaştırmaktadır. Bu uygulamalar mobil ve web üzerinden temel seviyede ücretsiz hizmet verirken profesyonel kullanıcılara ise ücretli hizmet sağlamaktadır. Metinden müzik türeten uygulamalar da benzer mantıkta hareket etmektedir. Suno.ai, mobil ve web üzerinden hizmet verirken tıpkı metinden görüntü işleyen uygulamalarda olduğu gibi tasvir, tanım ve ifadeleri istenilen dilde sözlü ve müzikli olarak çeşitli tarzlarda bir şarkıya dönüştürmektedir.

Yapay zekâ teknolojilerinin eğitim-öğretim ortamlarında son yıllarda sıklıkla kullanıldığı görülmektedir. Henüz kabul görmüş genel bir yargı olmamasına rağmen yapay zekâ teknolojilerinin öğrenme ortamlarında yaratabileceği avantaj ve dezavantajlara dair birçok araştırma yapılmış ve çeşitli görüşler ifade edilmiştir. Doğru ve öz bilgiyi edinme, bilgi aramada zamandan tasarruf etme, bir konu hakkında farklı bakış açıları edinme ve görev tamamlama süresini optimize etme gibi avantajları vurgulanan yapay zekâ teknolojilerinin kişisel öğrenmelerin desteklenmesi, öğrenme maliyetlerinin düşürülmesi, ders materyallerinin hızlı bir şekilde sağlanabilmesi diğer avantajları arasında gösterilebilir (Verhagen, 2021; Khanzode & Sarode, 2020; Baidoo-anu & Ansah, 2023). Özellikle, Sosyal Bilgiler eğitiminin kapsamlı müfredat yapısı nedeniyle, öğrenme ortamlarında öğrenciler arasında bilgi düzeylerinde belirgin farklılıklar ortaya çıkmaktadır. Bu bağlamda, yapay zekâ uygulamaları, öğrencilere baskı oluşturmadan bireysel olarak ilerlemelerine olanak tanıyacak kişiselleştirilmiş öğrenme ortamlarının geliştirilmesine imkân sağlamaktadır (Roll & Wylie, 2016). Ayrıca yapay zekâ uygulamaları, Z kuşağı olarak adlandırılan öğrencilerin öğrenme ortamlarında ilgi düzeylerini artırma potansiyeline sahip olabilir. Bu öğrenciler dijital ortamlarda iç içe büyüyen bir nesil olduklarından, uzun süre dikkat gerektiren faaliyetlerde zorluk yaşamaktadırlar (Karadoğan, 2019). Bu durum, özellikle Sosyal Bilgiler gibi kapsamlı ve yoğun müfredatlara sahip derslerde belirgin bir şekilde ortaya çıkmakta ve öğrencilerin derse olan ilgisini azaltabilmektedir. Bu noktada, yapay zekâ tabanlı uygulamalar öğrencilerin derse yönelik ilgi düzeylerini artırma potansiyeli taşımaktadır. Örneğin, Georgia Teknoloji Enstitüsü'nde uygulanan Jill Watson adlı yapay zekâ destekli öğretmen asistanı, bu tür uygulamaların eğitimdeki rolüne dikkat çekici bir örnek sunmaktadır. Jill Watson, öğrencilerin sormuş oldukları sorulara anında ve doğru yanıtlar vererek etkileşimli bir öğrenme ortamı oluşturarak öğrencilerin ilgi düzeylerinin artmasına katkı sağlamıştır (Yufeia vd., 2020). Yapay

zekâ, matematik, mantık, bilgisayar bilimi, psikoloji, sosyoloji ve elbette söz konusu alanda biyoetik gibi birçok farklı alanı kapsayan çok disiplinli bir bilimdir (Tao & Guerra, 2019). Bu açıdan düşünüldüğünde yapısı itibari ile disiplinlerarası bir ders olan Sosyal Bilgiler ile de benzeşmektedir. Sosyal Bilgiler dersinde geçmiş yaşantıların ve dönemlerin yeniden canlandırılması adına yapay zekâ araçları tarafından türetilecek görsel materyaller dersin somutlaştırılmasında önemli avantajlar sağlayabilir. Yine coğrafi oluşumlar ve bu oluşumların görsellerle desteklenmesi adına üretken yapay zekâ araçları ileriki zamanlarda sıklıkla kullanılabilir. Yapay zekâ teknolojilerinin öğrenme ortamlarında kullanımının avantajlarının yanı sıra dezavantajlarının da olduğu çeşitli araştırmalarda ifade edilmektedir. Yapay zekâ uygulamaları, sunduğu olanakların yanı sıra bazı olumsuzlukları da bünyesinde barındırmaktadır. Özellikle, büyük verileri toplama ve işleme yetenekleri önemli bir endişe kaynağıdır. Örneğin, Çin'deki bir okulda öğrencilerin ders esnasında dikkat düzeylerini tespit etmek için yüz tanıma teknolojisi kullanılmıştır. Bu sistem, öğrencinin derse odaklanmadığı durumlarda öğretmene bildirim göndererek müdahale olanağı sağlamaktadır. Ancak, bu tür sistemler veri gizliliği ve bireysel mahremiyet açısından çeşitli etik sorunları beraberinde getirmektedir (Karagkouni & Sotiropoulou, 2023). Diğer yandan, özellikle ChatGPT gibi yapay zekâ uygulamalarına yöneltilen soruların güvenilirliği ciddi bir endişe kaynağı olarak değerlendirilmektedir. Bu noktada, kullanıcılar elde edilen verilerin doğruluğuna eleştirel bir perspektifle yaklaşmaları; bilgi edinme süreçlerinde dikkat edilmesi gereken temel bir husustur (Yılmaz ve Kır, 2024). Bir diğer dezavantaj ise bu teknolojilerin kullanımının çeşitli alt yapıların varlığı ile ilişki olmasıdır. İnternet altyapısı, gerekli teknolojik ekipman (bilgisayar veya akıllı cihazlar), yapay zekâ hizmeti sağlayan uygulamaların maliyetleri vb. durumlar imkân eşitliği olmayan öğrenciler için önemli bir dezavantaj oluşturabilir.

Elde edilen bulgular ve ulaşılan sonuçlar bir arada değerlendirildiğinde aşağıdaki öneriler sürecin gelişimi açısından sunulabilir:

- Dünyada yoğun ilgi gösterilmeye başlanan üretken yapay zekânın eğitimde kullanımına ilişkin Türkiye'de daha fazla araştırma yapılması Türk eğitim sistemi için faydalı olabilir.
- Elde edilen bulgular çerçevesinde Eğitim Bilişim Ağı'nda üretken yapay zekâ araçlarından yararlanılmadığı görülmesi sebebiyle bu uygulamaların EBA'ya entegre edilmesi ile hem öğrenciler hem de öğretmenler faydalanabilir.
- Disiplinlerarası yapısı sebebiyle Sosyal Bilgiler dersindeki etkinliklerde üretken yapay zekâdan yararlanılması öğretmenlerin ve öğrencilerin içerik üretirken işlerini kolaylaştırabilir.
- Sosyal Bilgiler ders kitapları üretken yapay zekâ araçlarından da faydalanacak şekilde tasarlanması araçlardan etkin bir şekilde yararlanılmasını sağlayabilir.

Etik Kurul Bilgileri

Çalışmada doküman analizi yöntemi tercih edildiği için etik kurul izni gerekmemektedir.

Araştırmacıların Çalışmaya Katkısı

Araştırmacılar çalışmaya eşit oranda katkı sağlamıştır.

Çıkar Çatışması

Yazar(lar) bu çalışmada olası bir çıkar çatışması olmadığını beyan ederler.

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Teaching Social Studies with Generative Artificial Intelligence Tools: Advantages and Disadvantages[1]

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Abstract
The main purpose of this research is to determine the usability of visual, text processing and auditory artificial intelligence applications that can be used in the social studies course, the advantages and disadvantages of these applications in learning environments as a whole through previous academic studies. In this study, document analysis method, one of the qualitative research methods, was used. In this framework, the documents obtained in accordance with the purpose of the research were sorted according to various criteria and the data obtained in accordance with the purpose were interpreted and presented. In order to examine the articles published on the use, advantages and disadvantages of materials derived with generative artificial intelligence tools in social studies teaching, articles that were scanned in the 'Google Academic' database between 2023-2024 and whose full text could be accessed were identified. As a result of the data obtained, it was determined that applications using natural language processing systems, artificial intelligence applications that derive visuals from text, and artificial intelligence applications that derive auditory materials from text are increasingly used in learning environments when the results obtained from the research findings are evaluated as a whole, it is concluded that these artificial intelligence technologies, which will significantly increase the applicability of the Turkey Century Maarif Education Model, which started to be implemented as of 2024, can be used effectively in the social studies course.

Keywords: Social studies, Artificial intelligence, Generative artificial intellegience, Educational technologies

INTRODUCTION

Social Studies is one of the most important courses at the primary education level from past to present. The Social Studies course has an interdisciplinary structure that brings together disciplines such as History, Geography, Anthropology, Sociology and Economics (Keskin, 2021).The main purpose of Social Studies is to enable students to understand the world and make informed decisions about their current world. Social Studies course content allows students to explain their relationships with other people, institutions and the environment and equips them with knowledge and understanding of the past. It provides students with productive problem-solving and decision-making skills, as well as the ability to evaluate problems and form value judgments (Russell & Waters, 2021). The correct establishment of interdisciplinary connections in the Social Studies course, which includes many disciplines together due to its interdisciplinary structure, will undoubtedly increase the permanence of learning. Since the Social Studies course is a structure in which instructional technologies are frequently used (Erdoğan & Şerefli, 2021), it is of great importance to use educational technologies effectively in the lessons. In addition, doing sample activities for this purpose can

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appeal to students with different characteristics as it will allow the course to be more diversified (Turan et al., 2020). By increasing the possibilities of using technological tools in schools and using these tools and equipment efficiently in lessons by stakeholders, it will be realized that the broad content of Social Studies can be better gained with technology integration (Güneş et al., 2021).

In the 21st century, one of the most important developments in technology can be said to be artificial intelligence technologies. In fact, it is known that the conceptual foundations of artificial intelligence were laid in the mid-20th century (McCarthy, 2007; Jiang et al., 2022). In the current century, the rapid development in internet technologies has enabled artificial intelligence to make a significant progress in concrete terms. Artificial intelligence technologies affect almost every part of human life. At this point, today's educational environments are also greatly affected by these developments. It can be said that artificial intelligence (Güzeldemirci, 2024), which fulfills tasks that human intelligence cannot perform at normal level such as speech, recognition, visual perception, language translation, decision-making through computer systems, has started to be used significantly with the title of productivity in educational environments with these features (Forero-Corba & Benassar, 2024; Alier et al., 2024; Park & Kwon, 2024; Limna et al., 2022; Nalbant, 2021). What makes generative artificial intelligence technologies different from traditional machine and deep learning technologies is the production of unique content beyond the results based on algorithmic predictions (Bozkurt, 2023). The use of AI tools in image, video, audio and music creation can facilitate the production of multimodal educational materials that can enhance students' visual and auditory learning experiences. AI tools also provide opportunities to adapt the content of courses to their specific needs and present information in various formats throughout the educational process (Katsouda, 2024; Rovdo, 2024).

Recent technological developments have emphasized the importance of the use of technology in Social Studies education. These develeopmens suggest that the integration of new technologies into the Social Studies course will be beneficial for teachers, students and the school environment (Karakuş, 2023; Berson & Berson, 2023; Avcı & Günay, 2024; Burak, 2023). A comprehensive review of the literature shows that the use of artificial intelligence technologies in Social Studies education has a positive impact on education and training processes (Yetişensoy & Rapoport 2022; Yalçın, 2023; Berson & Berson, 2023). In particular, it can be said that artificial intelligence applications enrich educational environments in the visual and auditory sense (Nalbant, 2021; Kenchakkanavar, 2023; Jayadurga & Rathika, 2023; Yalçın, 2023). From this point of view, the main purpose of this research is to determine the usability of image, text processing and auditory artificial intelligence applications that can be used in the Social Studies course, the advantages and disadvantages of these applications in educational environments as a whole through previous academic studies. The main problem of the research was determined as *"How can the use of generative artificial intelligence tools in Social Studies education be realized?"* In this framework, answers to the following six questions were sought: From this perspective, the main purpose of this research is to determine the usability of image, text-processing and auditory artificial intelligence applications that can be used in Social Studies courses, and the advantages and disadvantages of these applications in educational environments as a whole through previously conducted academic studies. The main problem of the research was determined as "How can the use of generative artificial intelligence tools be implemented in Social Studies education?"

1. In which years were the studies included in the study group published?
2. In which countries were the studies included in the study group published?
3. What are the main results of the studies included in the study group?
4. Which artificial intelligence applications can be utilized in Social Studies teaching?
5. How can text-based, visual, auditory and artificial intelligence applications be utilized in Social Studies teaching?

6. What are the advantages and disadvantages of using artificial intelligence applications in Social Studies teaching?

Purpose of the Study

The main purpose of this study is to determine the usability of artificial intelligence applications, which are increasingly being used in educational environments, in the Social Studies course in line with previous studies and to develop new perspectives in this framework.

METHOD

Research Model

In this study, document analysis method, one of the qualitative research methods, was used. Document analysis has an approach based on examining the documents related to the researched subject in accordance with scientific principles (Kıral, 2020). Document analysis can also be defined as a research method used to analyze the content of written documents meticulously and systematically (Wach & Ward, 2013). With this method; it is aimed to systematically evaluate documents, reports, all kinds of scientific content and similar written sources. In this direction, it is aimed to analyze the available information comprehensively and to achieve the objectives determined within the scope of the research. Bowen (2009) states the process of document analysis as finding, selecting, evaluating and synthesizing documents. In document analysis, the researcher creates various categories before the analysis (Fraenkel et al., 2011). The categories created in this research can be listed as utilizing images with generative artificial intelligence, utilizing texts with generative artificial intelligence, and utilizing auditory materials created with generative artificial intelligence in educational environments. In this framework, the documents obtained in accordance with the purpose of the research were sorted according to various criteria and the data obtained in accordance with the purpose were interpreted and presented.

Data Collection and Analysis

To examine articles published on the advantages and disadvantages of using materials generated by generative artificial intelligence tools in Social Studies teaching, studies indexed in the Google Scholar database with full-text access were identified. The criterion sampling technique, a type of purposive sampling, was used for selecting the study sample. In selecting the articles, the following criteria were considered. These criteria are as follows:

1. Being in the field of Social Studies education and/or education,
2. Having a full-text accessible article,
3. Listing as a result of a search using the keywords 'Generative Artificial Intelligence and Education',
4. Turkish or English.

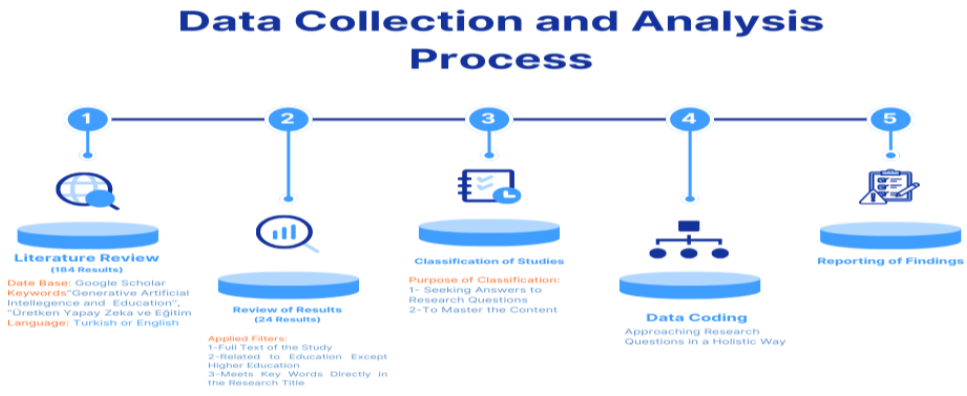


Figure 1. Data Collection and Analysis Process

The analysis of the articles was classified under the headings determined in the previously prepared form and presented with frequency and percentage tables and appropriate graphics. The data obtained were analyzed through Microsoft Excel program and presented in the relevant graphs. Data collection and analysis processes were visualized and presented in detail in Figure 1.

FINDINGS

Following the data analysis, the findings are presented in this section to answer the research questions separately.

What is the Distribution of the Researches in the Study Group by Years?

As shown in Figure 2, a total of 24 studies focusing on the topic of generative artificial intelligence and education are included in the study group. It is noteworthy that the majority of the studies included in the study group were published in 2024 (f=20), while the studies published in 2023 (f=4) were limited in number.

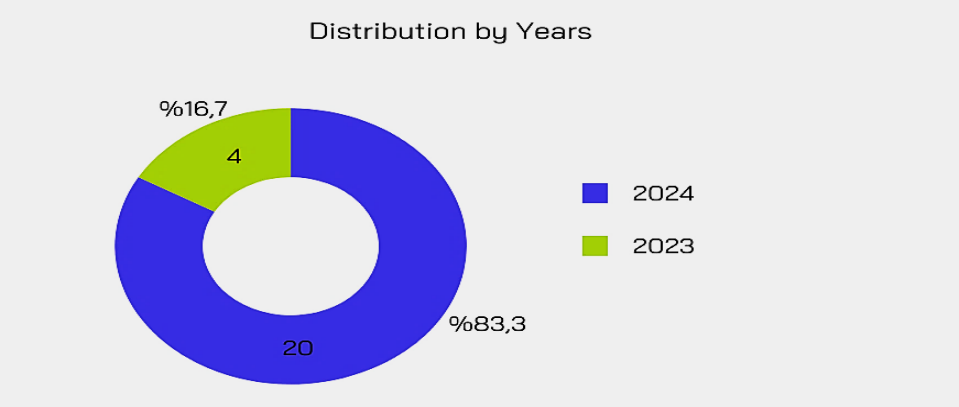


Figure 2. Distribution by Years

What is the Distribution of the Studies in the Working Group by Countries?

Figure 3 shows the findings regarding the distribution of the studies in the study group according to countries. The United States of America (f=5) stands out numerically in this field. On the other hand, the United Kingdom (f=4) and Switzerland (f=3) have relatively more studies than other countries. Only one study is conducted in Turkey.

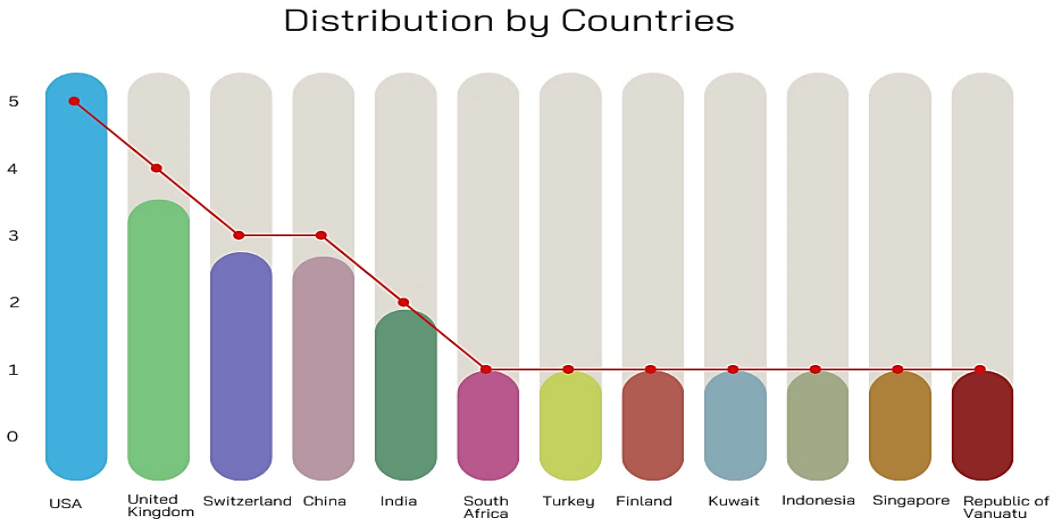


Figure 3. Distribution by Countries

What are the Findings Regarding the Results of the Researches in the Study Group?

Figure 4 presents the findings regarding the results reached in the studies included in the study group. The conclusion that the adoption of generative artificial intelligence tools in educational settings involves certain advantages and disadvantages (f=15) stands out numerically. In particular, in the studies included in the study group, the advantages and disadvantages of generative AI are evaluated together. For example, Rane (2023) states that generative AI tools provide a number of benefits to students in the homework preparation process, but the originality and quality of the assignments prepared with these tools are considered as a source of concern. Ngwenya (2024) reached similar conclusions. On the other hand, it was found that ChatGPT, which was characterized as a generative artificial intelligence tool in the studies, significantly affected the learning processes (f=3). For example, Baidoo and Ansah (2023) stated in their study that ChatGPT encourages personalized and interactive learning, but it also has a number of negative features such as privacy violations and generating false information. However, the least numerically reached results include the development of generative AI in the fields of education and the arts, which offers important opportunities for innovative applications and creative processes (f=1), while human-chatbot interaction involving generative AI in education and industry is considered an important development with the potential to transform learning and working processes (f=1).

When the results of the studies in the study group were evaluated in general, it was determined that various findings were reached.

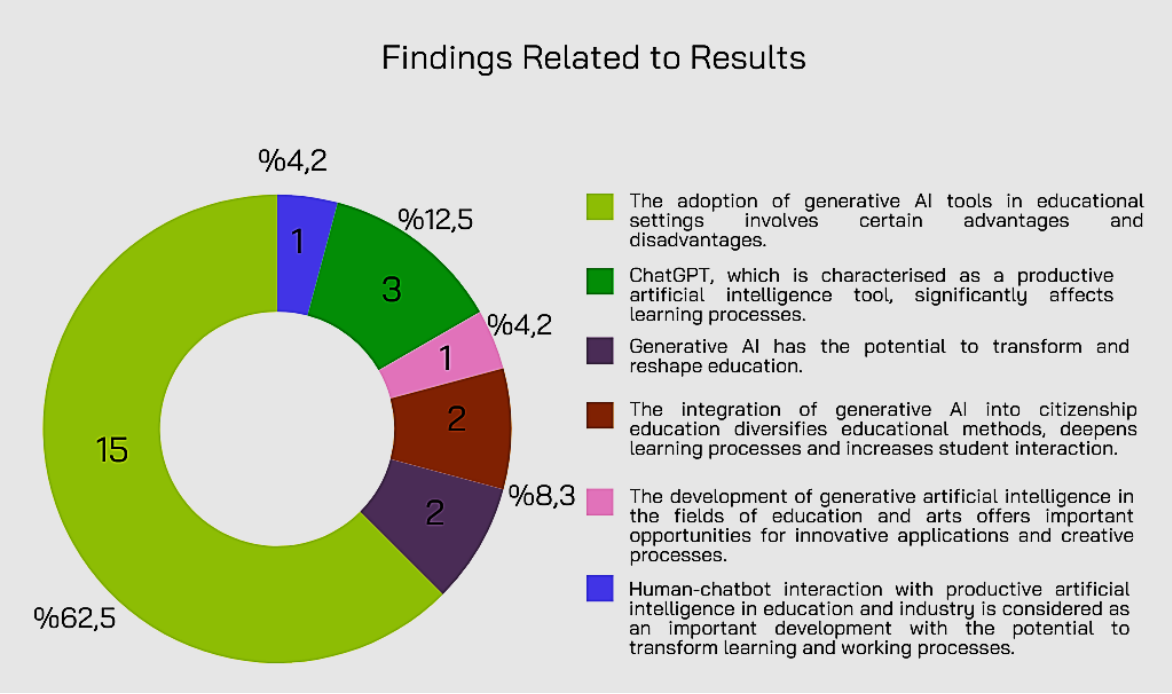


Figure 4. Results Related Findings

Which Artificial Intelligence Applications can be Utilized in Social Studies Teaching?

Social Studies course utilizes many disciplines together due to its nature. With this feature, it is different from many courses at the middle school level. This situation can facilitate the utilization of many artificial intelligence applications in the Social Studies course. In Social Studies; visual, text-based, auditory and other artificial intelligence applications can be used to concretize the lesson, increase creativity, support authentic and individualized learning, and enrich activity-based lesson plans.

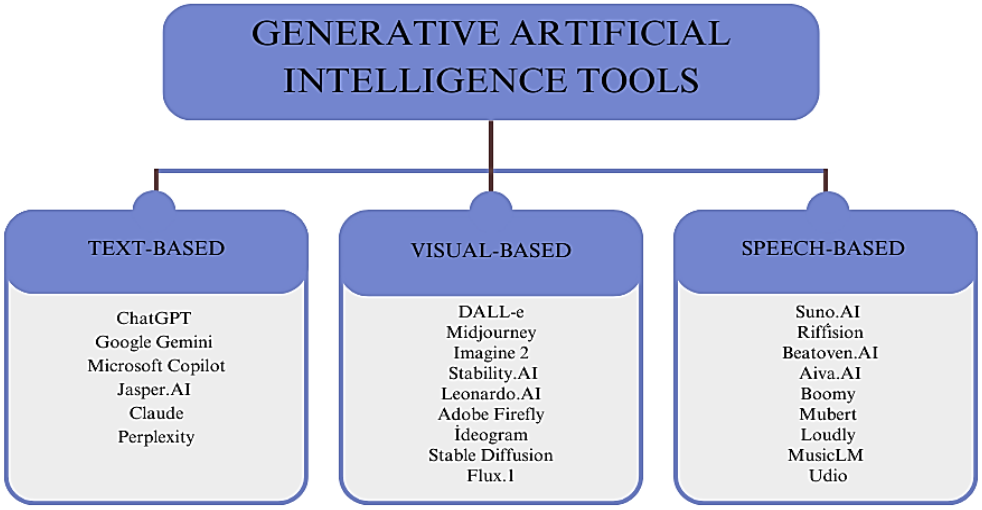


Figure 5. Generative Artificial *Intelligence* Tools

Text-based Artificial Intelligence Applications

Machine learning algorithms and natural language processing techniques enable artificial intelligence systems to analyze large amounts of training data, enabling learning experiences to be customized according to individual needs and preferences. With the rapid advancement of technology and globalization, this has significantly impacted many sectors, including education. It can be said that there are many artificial intelligence applications that contribute to educational and training environments by using natural language systems. The most well-known of these is undoubtedly ChatGPT. Apart from *ChatGPT*, applications such as *Google Gemini, Microsoft Copilot, Jasper.ai, Claude, Perplexity* are among the other applications that can be utilized in Social Studies education.

Applications Capable of Generating Images with Artificial Intelligence Technology

Generative artificial intelligence applications such as *DALL-e, Midjourney, Imagine 2, Stability.ai, Leonardo.ai, Adobe Firefly, Ideogram, Stable Diffusion, Generative AI by Getty, FLUX.1*, which can generate unique images, provide users with original visual materials with images generated after being defined with keywords. DALL-e, based on *text to image*, can be defined as a new artificial intelligence system that can generate realistic images and artworks based on expressions defined in natural language. DALL·E, developed by OpenAI, utilizes a state-of-the-art deep learning model to generate high-quality, detailed images that can be used in various fields, from product design to education. Another application, Midjourney, is another tool that uses similar technologies to DALL-e to generate images. All of the previously mentioned applications have similar features to DALL-e and Midjourney and continue to serve their users through both mobile and websites.

Applications Capable of Generating Auditory Materials Using Artificial Intelligence Technology

There is no doubt that the use of audio resources is of great importance in educational environments. It is among the findings that the use of these and similar applications can significantly increase students' creativity and cultural understanding. In this context, it is observed that text-to-music technologies have started to become more widespread in learning environments. For this purpose, one of the most popular applications that provides services via mobile and web is known as *Suno.ai*. Apart from Suno.ai, there are also artificial intelligence

applications such as *Riffision, Beatoven.ai, Aiva.ai, Boomy, Mubert, MusicLM, Udio, Songr, Musicfy, Loudly* that use text-to-music technology.

How can text-based, visual and auditory artificial intelligence applications be* utilized *in social studies teaching?

Text-based artificial intelligence applications pioneered by ChatGPT can be utilized in Social Studies courses as in many other courses. In addition to directly benefiting from ChatGPT, chatbots that can be generated through various intermediary AI applications using the ChatGPT infrastructure can present the course content to students through simple interfaces. After students access the chatbots generated for the course, regardless of time and location, they can easily access information within the curriculum, ask questions, and even obtain information at the analysis and synthesis stages from chatbots designed for specific purposes. In short, with the services they provide, ChatGPT and other AI applications using natural language processing systems can be utilized as automated question-and-answer systems in Social Studies education. These systems can answer the questions asked by students and act as an assistant by providing contextual information. For example, the responses to the assessment questions from Unit 6 of the 7th-grade Social Studies textbook are shown in Figure 6.

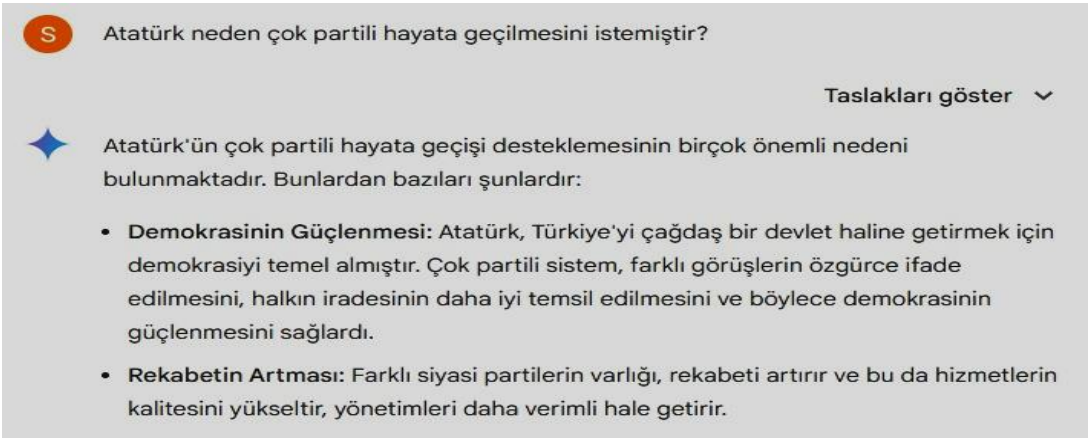


Figure 6. The Response Given by ChatGPT to the Assessment Question in the Social Studies Textboo

It is also possible to benefit from tools that generate images from text in Social Studies education. Concept maps, judgment sentences, and expressions generated from a lesson covered in the curriculum, when combined and processed in any AI application that handles visuals, can generate a unique image based on the input expressions entered into the system. This can reveal outputs that can indicate the learning level of each student, and can also be used as an evaluation method to test how much the course outcomes can be transferred. For this purpose, AI applications with the ability to generate images, such as DALL-E and Midjourney, can play a pioneering role in visualizing images and concepts; they can help recreate the visual context and emotional depth of a text. In addition to being a valuable tool for analyzing and interpreting texts with visual components, they can open new ways to understand literary works in terms of images and emotions. An example of how AI applications that process visuals can be used in Social Studies education is as follows: the unique image generated through the use of the DALL-E application with concepts generated from the topic 'Atatürk and the Development of Turkish Democracy' in Unit 6 of the 7th-grade Social Studies textbook (Monarchy, Democracy, Republic, Election, Vote, Turkey) is shown in Figure 7.



Figure 7. The Illustration Created by DALL-E on the Development of Turkish Democracy.

As can be seen, generative artificial intelligence tools have the ability to produce significant content for the concretization of the Social Studies course in line with appropriate descriptions. While these contents can be personalized as a result of each student's own depictions, they also make the lesson more interesting.

Social Studies lessons can benefit significantly from generative artificial intelligence tools that can generate sound or music. Especially with the Suno.ai application, users can turn concepts, topics and descriptions into a unique song or any material with musical value through the application. The lyrics generated by using 5 concepts (Republic, freedom, parliament, constitution, national sovereignty) obtained from the concepts, values and skills section in the introduction of the 6th unit of the 7th grade Social Studies textbook are as follows. The related application not only prepares lyrics but also composes the lyrics and allows users to listen to this work.

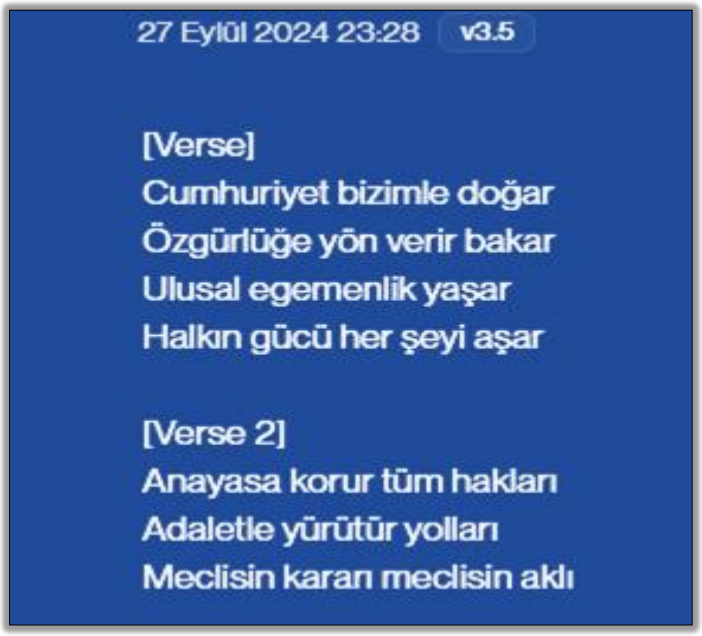


Figure 8. Lyrics Generated by Suno.ai

What are the Advantages and Disadvantages of Using Artificial Intelligence Applications in Social Studies?

It is observed that there are both advantages and disadvantages of using artificial intelligence tools in Social Studies. Artificial intelligence tools that can be used in the Social Studies course help to create personal and meaningful learning opportunities, as well as freeing up time for teachers to connect and interact with students. In addition, many studies have shown that chatbots accelerate the learning of basic concepts. In the Social Studies course, artificial intelligence applications can be used to re-enact past experiences with illustrations in line with students' basic perceptions, and it seems possible to perform simple and advanced data analysis with similar applications. It is observed that the use of generative artificial intelligence applications in Social Studies education provides significant advantages for personalizing learning, adapting to students' needs, and promoting deeper learning. In addition to the advantages of utilizing artificial intelligence applications in Social Studies education, there are also disadvantages. In fact, the disadvantages encountered in the use of artificial intelligence applications in Social Studies education are similar to those that can be encountered in other fields of teaching. It is seen that there are frequent discussions especially about privacy. The unauthorized and uncontrolled processing of personal data is one of the main criticisms related to privacy. Another point of criticism concerns the potential inaccessibility of technical requirements for all students, which may also violate the principle of equal opportunity. Other disadvantages of using artificial intelligence applications in Social Studies education include concerns that students' creativity may be hindered and that dependence on technology may increase.

RESULTS and DISCUSSION

This research focuses on the use of materials generated from generative artificial intelligence, which can be accessed on Google Scholar, in Social Studies education, as well as the examination of scientific studies examining the advantages and disadvantages of this situation through document analysis method. The reviewed studies indicate that, despite being a relatively new technology, generative artificial intelligence has a remarkably broad scope of use in educational environments. In the 21st century, students access information faster and live a more integrated life with digital technologies. From this perspective, equipping individuals and citizens with the necessary skills to quickly access information and adapt to society, the world, and evolving technology in our increasingly digitalized world can be considered a responsibility of both the education system and Social Studies instruction as a part of that system (Çetin, 2022).

In the new Social Studies curriculum published within the framework of the 'Century of Türkiye Education Model,' which the Ministry of National Education implemented as of 2024, various literacy skills, including digital literacy, have also been incorporated. In the same curriculum, the importance of digital content production is also mentioned (M.E.B, 2024). Since Social Studies education has a broad and multidisciplinary curriculum, innovative technologies such as artificial intelligence can be used in teaching the subjects of this course. In particular, due to the comprehensive nature of Social Studies courses, teachers often tend to adopt passive learning methods in learning environments (İlter, 2018; Yaylak, 2020). It can be said that this situation leads to a decrease in students' motivation towards the lesson. At this point, artificial intelligence applications can be used as an effective tool to overcome these problems. By measuring students' motivation levels towards the course (Yavuzarslan, 2023), artificial intelligence applications can design activities that appeal to each student's dominant intelligence areas, interests, and needs. Social Studies teachers can also benefit from artificial intelligence-supported Technologies that generate these applications such as navigation and translation applications, various recommendation systems, image and voice recognition, and chatbots in applied artificial intelligence teaching activities (Yetişensoy & Rappaport, 2023).

It is seen that the vast majority of the 24 studies in the study group were published in the United States. Although it is stated in various studies that China has made a great breakthrough in artificial intelligence technologies, it is observed that China lags behind the United States in terms of publishing research in the relevant field. In Turkey, there is only one study in the related field, and considering that many developed or developing countries have not yet conducted any studies in this area, it can be said that this is a notable statistic.

The concept of generative artificial intelligence stands out as a term that was first used in the literature in 2023 within the context of the study group. Although academic studies examining the relationship between artificial intelligence and education date back to earlier periods, it can be said that studies focusing on the relationship between generative artificial intelligence and education have entered the literature as of 2023. According to the data obtained, it is clear that the number of studies in the relevant field has increased dramatically starting from 2024. It can be predicted that more research will be conducted in this area in the coming years.

When the findings of studies focusing on generative artificial intelligence and education were analyzed, it was concluded that the use of these tools in learning environments has certain advantages and disadvantages. Particularly, the findings of the studies suggest that ChatGPT has a series of positive effects on learning environments. When the literature is analyzed comprehensively, the advantages and disadvantages of artificial intelligence applications are evaluated together. For example, Lo (2023) emphasized that ChatGPT has a number of positive features such as creating course materials and facilitating collaboration, but also stated that there is a risk that it may produce information that is not accurate. In a study conducted by Yeşilyurt et al., (2024), a total of 31 postgraduate theses focusing on the relationship between artificial intelligence and education in Turkey were examined in-depth. In these theses, it was frequently concluded that artificial intelligence applications have both positive and negative effects. These results are consistent with our research findings. In this context, it is concluded that since artificial intelligence applications are a new and current issue, their negative effects on educational institutions should be investigated more comprehensively and in depth.

In this context, in line with the fourth research problem, it is observed that there are various artificial intelligence applications that can be used in Social Studies education. It is seen that natural language processing applications are frequently used in Social Studies teaching, especially chatbots that can be used in Social Studies courses have been developed, and useful results have been obtained from these applications. In Yetişensoy (2022) study, an application named *"SosyalciBot"* was developed to reveal the educational potential of Chatbots in Social Studies education. In the study, which was prepared using mixed research method, it was aimed to determine the effect of chatbots on students. According to the results of the study, significant increases were observed in the post-test and retention test scores of the students. In the same study, it is stated that the use of Chatbots created through ChatGPT and similar artificial intelligence applications has become widespread in educational environments. Other natural processing applications other than ChatGPT are also frequently tested in learning environments. Applications such as *Google Gemini, Microsoft Copilot, Jasper.ai, Claude, Perplexity* draw attention as other applications that utilize natural language processing (Chen, 2024; Yugandahar & Rao, 2024; Bailey, 2023; De Silva et al., 2024). As it is well known, Social Studies education plays a fundamental role in equipping students with cultural literacy skills. Cultural literacy includes the ability to understand one's own cultural identity and to approach different cultures with an empathetic perspective (Kafadar & Şan, 2021). In this context, language teaching robots can be used as an important pedagogical strategy in developing students' cultural literacy skills. These robots can introduce students to the languages of people living in different countries, encouraging them to understand cultural diversity within the cultural context of language and interact with this diversity. For example, *"Elias"*, a language learning robot developed by FishRobotic, develops communication skills in a fun and engaging way (Öngöz, 2023). Apart from artificial intelligence applications that use natural language processing, artificial intelligence applications that can generate unique images that can be used as course materials

have also started to be used frequently in learning environments. It can be said that recently, applications such as Adobe Firefly, Imagine 2, Stability.ai, and Leonardo.ai have been included in the generative AI applications capable of generating images from text, which were originally led by tools like DALL-e and Midjourney. Various studies have stated that generative AI applications capable of generating images from text have been used in learning environments, and the results obtained have provided significant contributions to learning environments and students (Vartianinen et al., 2023; Ringvold, 2024; Fannoni, 2023). The technology capable of generating images from text or data is improving day by day, and it is starting to produce more meaningful results, especially in learning environments (Şen, 2021). In the study conducted by Derevyanko & Zalevska (2023), it is stated that the use of generative artificial intelligence applications such as Midjourney, Stable Diffusion, and DALL-e holds significant potential in the application phase of the educational process for students. The same study also suggests that integrating these applications into the learning process can help increase learning efficiency, save time, and improve the quality of the projects created. It can be said that another generative artificial intelligence technology that can be utilized in Social Studies education is artificial intelligence applications that can generate sound from text. In particular, it is stated in various studies that the use of the generative artificial intelligence application called Suno.ai in learning environments significantly affects students' language development, cultural understanding, and creativity levels (Helmanto & Dayana, 2024; Phalaguna, 2024). Suno.ai can be defined as an advanced artificial intelligence tool designed to facilitate music creation. Suno.ai uses advanced artificial intelligence models that can generate songs, including lyrics and vocal melodies, from textual descriptions provided by the user (RinconYepes, 2024).

In Social Studies education, teachers and students with basic information technology skills can easily benefit from various artificial intelligence technologies, primarily those that process natural language, generate images from text, and generate music from text. Artificial intelligence applications with natural language processing technology, such as ChatGPT and Gemini, are applications that can be accessed both on mobile and public networks, and can be used at basic levels and free of charge after routine membership processes. After accessing these applications, the requested information can be obtained in real-time by following the commands on their interfaces. Although applications with natural language processing technology use similar technology, they can also serve for different purposes. For example, these applications can process any text related to the curriculum, perform analyses based on the text, and automatically answer questions related to it. If these applications are "trained" by their users, much more positive results can be achieved. Applications that can generate images from text use similar procedures to those that use natural language processing technologies. Applications such as DALL-e, Midjourney, and Adobe Firefly concretize images and expressions by transforming data obtained from descriptions, definitions, or various written statements into unique images. These applications provide basic free services via mobile and web, while offering paid services for professional users. Apps that generate music from text follow a similar logic. Suno.ai provides services via mobile and web, and just like text-to-image processing applications, it transforms descriptions, definitions, and expressions into a song with lyrics and music in various styles and in the desired language.

Artificial intelligence technologies have been frequently used in educational environments in recent years. Although there is not yet an accepted general judgment, many studies have been conducted and various opinions have been expressed about the advantages and disadvantages of artificial intelligence technologies in learning environments. The advantages of artificial intelligence technologies such as obtaining accurate and concise information, saving time in information search, gaining different perspectives on a subject, and optimizing task completion time, supporting personal learning, reducing learning costs, and providing course materials quickly can be shown among other advantages (Verhagen, 2021; Khanzode & Sarode, 2020; Baidoo-anu & Ansah, 2023). Especially due to the comprehensive curriculum structure of Social Studies education, significant differences in knowledge levels emerge among students in

learning environments. In this context, artificial intelligence applications enable the development of personalized learning environments that will allow students to progress individually without putting pressure on them (Roll & Wylie, 2016). In addition, artificial intelligence applications may have the potential to increase the level of interest of students called Generation Z in learning environments. Since these students are a generation growing up in digital environments, they have difficulty in activities that require attention for a long time (Karadoğan, 2019). This situation is especially evident in courses with comprehensive and intensive curricula such as Social Studies and can reduce students' interest in the course. At this point, artificial intelligence-based applications have the potential to increase students' interest in the course. For example, the AI-powered teaching assistant named Jill Watson, implemented at Georgia Institute of Technology, presents a striking example of the role of such applications in education. Jill Watson contributed to increasing students' interest levels by creating an interactive learning environment by providing instant and accurate answers to the questions asked by students (Yufeia et al., 2020). Artificial intelligence is a multidisciplinary science that covers many different fields, including mathematics, logic, computer science, psychology, sociology, and, of course, bioethics in the relevant area (Tao & Guerra, 2019). In this respect, it is similar to Social Studies, which is an interdisciplinary course in terms of its structure. In Social Studies, visual materials generated by artificial intelligence tools can provide significant advantages in materializing the course by reviving past experiences and periods. Also in the future, generative artificial intelligence tools may be frequently used to support geographical formations and their visual representations. It is stated in various studies that the use of artificial intelligence technologies in learning environments has advantages as well as disadvantages Artificial intelligence applications, in addition to the opportunities they offer, also carry certain drawbacks. In particular, their ability to collect and process large amounts of data is a significant concern. For example, in a school in China, facial recognition technology was used to determine students' attention levels during class. This system provides the teacher with the opportunity to intervene by sending notifications when the student is not focused on the lesson. However, such systems bring various ethical issues related to data privacy and individual confidentiality (Karagkouni & Sotiropoulou, 2023). On the other hand, the reliability of the questions posed to artificial intelligence applications such as ChatGPT is considered a serious concern. At this point, it is a fundamental consideration in the information acquisition process for users to approach the accuracy of the obtained data with a critical perspective (Yılmaz & Kır, 2024). Another disadvantage is that the use of these technologies is related to the existence of various infrastructures. Internet infrastructure, necessary technological equipment (computers or smart devices), and the costs of artificial intelligence service-providing applications, etc., can present a significant disadvantage for students who do not have equal access to these opportunities.

When the findings and results are considered together, the following recommendations can be presented for the development of the process:

- Conducting more research in Turkey on the use of generative artificial intelligence in education, which has started to attract significant attention worldwide, could be beneficial for the Turkish education system.
- Based on the findings, since generative artificial intelligence tools are not being utilized in the Education Information Network (EBA), integrating these applications into EBA could provide benefits for both students and teachers.
- Due to its interdisciplinary nature, utilizing generative artificial intelligence in activities in the Social Studies course can make it easier for teachers and students to produce content.
- Designing Social Studies textbooks in a way that also utilizes generative artificial intelligence tools can ensure effective utilization of the tools.

Ethics Committee Information

Since document analysis method is preferred in the study, ethics committee permission is not required.

Contribution of Researchers to the Study

The researchers contributed equally to the study.

Conflict of Interest

The author(s) declare that there is no potential conflict of interest in this study.

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İlkokul Yöneticilerinin Perspektifinden Akran Zorbalığı: Nedir, Kim, Neden, Sonuçları ve Önleme Stratejileri

Peer Bullying from the Perspective of Primary School Administrators: What, Who, Why, Consequences and Prevention Strategies

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Atıf:
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Öz
Bu araştırma, ilkokullarda görev yapan okul yöneticilerinin okullarda yaşanan akran zorbalığı vakalarına ilişkin görüşlerini ortaya koyan genel tarama modelinde bir çalışmadır. Araştırmanın örneklemini Gaziantep'in Şahinbey ilçesindeki devlet ilkokullarında görev yapan 212 okul yöneticisi oluşturmaktadır. Amaçlı örnekleme yöntemi kullanılmış ve veriler araştırmacılar tarafından geliştirilen bir anket aracılığıyla toplanmıştır. Yanıtların frekans ve yüzde değerleri analiz edilmiştir. Çalışma, yöneticilerin akran zorbalığını en yaygın olarak sataşma ve hakaret olarak tanımladığını ve aile içi sorunların ana neden olarak gösterildiğini ortaya koymuştur. Fiziksel zorbalık en yaygın tür olarak belirlenmiştir. Yöneticiler, zorbalığa maruz kalan öğrencilerin özgüvenlerinin düşük olduğunu, zorbaların ise güç gösterisi yapmak için bu davranışları sergilediklerini belirtmiştir. Bire bir görüşmeler, yöneticiler tarafından zorbalığı ele almak için kullanılan en yaygın yöntemdi. Çalışma ayrıca öğrenci ve veli direncini zorbalıkla mücadelede önemli engeller olarak tanımlamıştır. Yöneticiler, öğrenciler, öğretmenler ve aileler arasında işbirliğinin önemini vurgulamış ve uzman desteğine duyulan ihtiyacı kabul etmişlerdir. Okullara bu tür bir desteğin sağlanması, zorbalığın azaltılması için çok önemlidir.

Anahtar Kelimeler: Zorbalık, Akran zorbalığı, İlkokul, Okul yöneticisi

Abstract
This research is a survey-based study exploring the views of school administrators in primary schools on peer bullying. The sample includes 212 school administrators from public primary schools in the Şahinbey district of Gaziantep. The purposive sampling method was used, and data was collected through a questionnaire developed by the researchers. Frequency and percentage values of the responses were analyzed. The study found that administrators most commonly defined peer bullying as teasing and insulting, with domestic problems cited as the main cause. Physical bullying was identified as the most prevalent type. Administrators noted that bullied students had low self-confidence, while bullies exhibited these behaviors to assert power. One-on-one interviews were the most common method used by administrators to address bullying. The study also identified student and parent resistance as major obstacles in combating bullying. Administrators emphasized the importance of cooperation among students, teachers, and families and recognized the need for expert support. Providing such support to schools is crucial to reducing bullying.

Keywords: Bullying, peer bullying, Primary school, School administrator

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GİRİŞ

Akran saldırganlığı ve zorbalık küresel bir halk sağlığı krizi olmaya devam ediyor. Zorbalığın yaygınlığı dünya çapında, gençlerin neredeyse üçte biri akranları tarafından zorbalığa maruz kalmaktadır (Krause ve Smith, 2022; UNICEF, 2019). Aynı zamanda akran zorbalığı, eğitim kurumlarında sıkça karşılaşılan ve sonuçları ciddi boyutlara ulaşabilen bir sorundur. Öğrencilerin veya öğrenci gruplarının, başka bir öğrenciye ya da gruba karşı tekrar eden ve acı çektirmek, fiziksel veya psikolojik baskı kurmak amacıyla yaptığı kasıtlı olarak zarar verici davranışlarda bulunması olarak tanımlanabilir (Olweus, 1993; Borgen ve ark. 2021; Açıkgöz, 2017). Güç dengesizliği ile kendini gösteren akran zorbalığı vakalarına karşı gerekli tedbir ve önlemlerin alınmaması halinde mağdurlar üzerinde derin etkiler bırakabilir (Ayas ve Pişkin, 2011). Eğitim kurumlarında görülen davranış problemlerinin zorbalık sayılabilmesi için; vakadan vakaya farklılık göstermekle birlikte en az bir ay ve haftada bir kez olmakla birlikte, güç dengesizliği esasına dayalı eylemler veya manipülatif davranışların görülmesi gerekmektedir (Roland ve Munthe, 1989; Olweus, 2013; Yaman, 2011).

Zorbalık davranışları uygulanma türüne göre doğrudan ve dolaylı zorbalık olmak üzere iki grupta incelenebilir. Doğrudan zorbalık davranışlarında mağdur ve zorba profil arasında doğrudan etkileşim bulunurken dolaylı zorbalık davranışlarında üçüncül faktörler aracılığıyla saldırganlık kendini gösterir (Gladden vd., 2014; Rivers ve Smith, 1994; Björkqvist vd., 1992). Zorbalık davranışları; fiziksel, sözel, duygusal ve bilim ve teknolojideki ilerlemelerle birlikte davranış problemlerinde de kendini gösteren siber zorbalık olarak gruplara ayrılabilir (Griffin ve Alan, 2004; Willard, 2005).

Akran zorbalığı, zorbalığa maruz kalan öğrenciler üzerinde düşük özgüven, depresyon, anksiyete ve hatta intihar düşüncelerine kadar varan ciddi psikolojik etkilere neden olabilir. Zorbalığa maruz kalan öğrenciler, olumsuz deneyimlerinin ardından kendilerini değersiz, yetersiz ve yalnız hissedebilirler (Espelage ve Swearer, 2004). Zorbalık vakalarının ardından, mağdurların günlük yaşamları, akademik performansları olumsuz etkilenmekle birlikte okuldan kaçınma, sosyal izolasyon gibi uzun vadeli travmaların gelişmesine yol açabilir (Rigby, 2003). Doğan ve Keleş (2023), zorbalığın nedenleri, sonuçları ve çözüm önerileri bağlamında akran zorbalığını ele almış ve zorba ve mağdur öğrencilerin profillerini incelemiştir. Araştırma, zorba öğrencilerin genellikle düşük empati seviyelerine sahip olduklarını ve güç kullanarak sosyal statülerini artırmaya çalıştıklarını ortaya koymuştur. Mağdur öğrenciler ise genellikle düşük özgüvene sahip, sosyal olarak izole ve savunmasız bireyler olarak tanımlanmıştır.

Akran zorbalığı, öğrencilerin ruh sağlığı ve akademik başarıları üzerinde olumsuz etkiler yaratan önemli bir sorundur. Kılınç (2023) 2010-2020 yılları arasındaki akran zorbalığı çalışmalarının sistematik analizini yapmıştır. Araştırma sonuçlarına göre, akran zorbalığı eğitim kademelerinin hepsinde yaygın olarak görülmekle birlikte mevcut çözümlerin yetersiz kaldığını gözler önüne sermektedir. Talu ve Gümüş'ün (2022) ergenler arasında akran zorbalığını incelediği meta-analiz çalışması ile öğrencilerin bir eğitim-öğretim döneminde ortalama iki kez akran zorbalığına maruz kaldığını ortaya koymaktadır. İlgili çalışmaların bulguları, akran zorbalığı vakalarının ülkemizde yaygın ve süreklilik arz eden bir problem olduğunu göstermektedir. Benzer çalışmalar yurt dışında da yapılmıştır. Kljakovic ve Hunt (2016) yaptıkları meta-analiz çalışması ise ABD, Kore, Çin, Finlandiya ve Hollanda gibi ülkelerde, akran zorbalığı vakalarının okullarda sosyal ve davranışsal sorunlara neden olduğu sonucunu çıkarmıştır. Moore ve arkadaşları (2017) yaptıkları meta-analiz çalışması ile akran zorbalığının zihinsel iyi oluş ile ilişkili ve öğrenciler bağlamında özen gösterilmesi gereken bir sorun olduğunu belirtilmişlerdir. Walters (2020) çalışmasında benzer sonuçlara ulaşmış ve akran zorbalığının birçok riskli davranışla ilişkili olduğunu vurgulamıştır. Meta-analiz çalışmalarıyla da elde edilen kapsamlı bulgular, akran zorbalığının sadece Türkiye'de değil, uluslararası düzeyde de hem bireysel hem toplumsal düzeyde çözülmesi gereken bir sorun olduğunu göstermektedir.

Türkiye'de akran zorbalığı vakaları, öğrencilerin sosyal ve duygusal gelişimlerini olumsuz yönde etkilemektedir. Öğrenciler üzerindeki olumsuz etkileri azaltmak amacıyla Millî Eğitim Bakanlığı, 2022-2023 eğitim öğretim yılından itibaren tüm eğitim kademelerinde "akran zorbalığı" "siber zorbalık" ve "psikolojik sağlamlık" gibi konuları kapsayan farkındalık ve eğitim programlarını uygulamaya koymuştur (Millî Eğitim Bakanlığı, 2023). Türkiye'de yapılan ilkokullar bağlamındaki akran zorbalığı araştırmaları incelendiğinde, zorbalık vakalarının yaygın olduğu görülmektedir. Akran zorbalığı konusunda öğrenci, öğretmen, psikolojik danışma ve rehberlik hizmetleri alanlarında ilkokul seviyesinde araştırmalar yapılmış paydaşların görüşleri alınarak hem nitel hem de nicel verilere dayanan çalışmalar ortaya konulmuştur. Akpınar ve Akpınar (2022), ilköğretim okullarında öğretmenlerin akran zorbalığına dair görüşlerini incelemiş ve öğretmenlerin bu konuda farkındalık düzeylerinin yüksek olduğunu ortaya koymuştur. Barik ve Yurtal (2023), sınıf öğretmenlerinin akran zorbalığı ile başa çıkma stratejilerini ve karşılaştıkları zorlukları araştırmışlardır. Çalışmanın bulguları, ilkokul seviyesinde öğretmenlerin zorbalıkla mücadelede yeterli desteği alamadıklarını ve bu konuda daha fazla eğitime ihtiyaç duyduklarını göstermektedir. Öğretmenlerin zorbalığı tespit etme ve müdahale etme konusundaki yetkinliklerinin artırılması gerektiği belirtilmiştir. Karataştan ve Akcan (2023a), sınıf öğretmenlerinin perspektifinden göçmen ve mülteci çocukların akran zorbalığına maruz kalma durumlarını incelemiştir. Çalışma, göçmen ve mülteci çocukların, dil ve kültür farklılıkları nedeniyle zorbalığa daha fazla maruz kaldıklarını ve bu durumun onların uyum süreçlerini olumsuz etkilediğini göstermektedir. Bayar ve Balcı (2023), okul rehber öğretmenlerinin bakış açısından akran zorbalığını ve çözüm yollarını ele almıştır. Rehber öğretmenler, zorbalık olaylarını tespit etme ve öğrencilere psikolojik destek sağlama konusunda önemli sorumluluklar üstlenmektedirler. Bu çalışma, rehber öğretmenlerin daha etkin olabilmeleri için gerekli kaynak ve eğitimlerin sağlanması gerektiğini vurgulamaktadır. Akran zorbalığı ile ilgili literatür ulusal ve uluslararası ölçekte incelendiğinde eğitim sürecinin tüm bağlamları açısından akran zorbalığı konusunun önem arz eden bir konu olduğu görülmektedir.

Akran zorbalığı, günümüzde eğitim sistemlerinin karşılaştığı öncelikli sorunlardan biridir ve çocukların ruh sağlığı, sosyal gelişimi ve akademik başarıları üzerinde ciddi etkiler yaratmaktadır (Olweus, 2013). Okul ortamında karşılaşılan zorbalık vakaları, öğrencilerin özgüvenini zedeleyerek okul başarısını düşürmekte, okul devamsızlığına ve sosyal izolasyona yol açmaktadır (Rigby, 2003). Bu nedenle, zorbalıkla mücadele sürecinde yalnızca öğretmen ve okul yöneticilerinin değil; aynı zamanda veliler, rehberlik uzmanları ve toplumun diğer paydaşlarının da katkısı gerekmektedir (Swearer ve Espelage, 2004). Yönetici görüşlerinin incelenmesi akran zorbalığı vakaları ile mücadelede kritik bir rol oynamakta, mevcut durumu betimlemekte ve okul ortamında güvenli bir eğitim iklimi oluşturulmasına katkıda bulunmaktadır (Smith, 2011). Eğitimciler zorbalığın öğrencilerin hayatları üzerindeki etkisini hem sınıfta hem de sınıf dışında ciddi şekilde değerlendirmeli ve sorunu reaktif olarak değil proaktif olarak ele almak için sistematik olarak bilinçli bir çaba göstermelidir (Waters ve Mashburn, 2017). Bundan dolayı bu araştırmada özellikle ilkokul düzeyinde uygulanabilecek uygulamaların geliştirilmesine rehberlik edecek veriler sunarak, akran zorbalığı vakaları ile mücadele konusunda literatüre katkı sağlamak amaçlamaktadır. Bu araştırmanın sonuçları, okul yöneticilerinin akran zorbalığı ile mücadele stratejilerinin güçlendirilmesine katkı sağlayarak, öğrencilerin güvenliğini ve refahını arttırabilecek uygulamalara mevcut durumu gözler önüne sererek kaynaklık edecektir. Bu çalışma sayesinde eğitim yöneticileri, öğretmenler ve veliler arasında ortak bir bilinç oluşturulması hedeflenmektedir. Elde edilecek bulgular, akran zorbalığıyla mücadelede daha geniş çapta bir iş birliği ve destek ağı kurulmasına olanak tanıyacaktır. Araştırmanın sonuçları hem teorik bilgiye katkıda bulunması hem de pratiğe dönük politikalar geliştirilmesine rehberlik etmesi açısından önemlidir. Bu bağlamda araştırmada aşağıdaki sorulara yanıt aranmıştır;

1. Okul yöneticileri akran zorbalığını nasıl tanımlamaktadırlar?

2. Okul yöneticilerine göre okulda yaşanan akran zorbalığının nedenleri nelerdir?
3. Okul yöneticilerine göre okulda akran zorbalığıyla ilgili en sık karşılaşılan davranış türleri nelerdir?
4. Okul yöneticilerine göre akran zorbalığına maruz kalan öğrencilerin özellikleri nelerdir?
5. Okul yöneticilerine göre akran zorbalığı yapan öğrencilerin özellikleri nelerdir?
6. Okul yöneticileri akran zorbalığı vakalarına nasıl müdahale etmektedirler?
7. Okul yöneticilerinin akran zorbalığı ile mücadelede hangi zorluklarla karşılaşmaktadırlar?
8. Okul yöneticilerinin akran zorbalığını önlemede izledikleri stratejiler nelerdir?
9. Okul yöneticilerine göre akran zorbalığı ile mücadelede daha etkili olabilmek için ihtiyaç hissedilen destek alanları nelerdir?

YÖNTEM

Araştırmanın Modeli

Bu araştırma, Millî Eğitim Bakanlığına bağlı resmî ilkokullarda görev yapan okul yöneticilerinin okullarda yaşanan akran zorbalığı vakalarına ilişkin görüşleri doğrultusunda mevcut durumu betimlemek amacıyla yürütülen nicel yönteme dayalı tarama modeline göre düzenlenmiş bir çalışmadır. Tarama araştırmaları, belirli bir evrenden örneklem seçilerek mevcut durumun betimlenmesini amaçlayan araştırma desenleridir. Bu tür araştırmalar, geniş katılımcı gruplarından veri toplayarak belirli bir olgunun yaygınlığını, dağılımını veya ilişkilerini incelemeyi hedefler. Büyüköztürk (2019) tarama modellerinin, araştırılan olay veya olgunun var olan durumunu olduğu gibi betimlemeyi amaçladığını belirtmektedir. Bu çalışma, araştırmacılar tarafında geliştirilen anket ile akran zorbalığının nedenleri, sonuçları ve önlemeye yönelik yapılması gerekenleri betimlediği için tarama çalışmasıdır.

Araştırmanın Evreni ve Örneklemi

Araştırma evrenini Gaziantep ili Şahinbey ilçesinde Millî Eğitim Bakanlığına bağlı resmî ilkokullarda görev yapan okul yöneticileri oluşturmaktadır. Örneklemin seçiminde amaçlı örnekleme yöntemlerinden maksimum çeşitlilik örnekleme yöntemi kullanılmıştır. Maksimumum çeşitlilik örneklemesinde çalışmaya katılacak bireylerin çeşitliliğini maksimum derecede yansıtmak ve bu sayede problemin farklı boyutlarını ortaya koymak amaçlanmaktadır (Yıldırım ve Şimşek, 2013). Bu çalışmada çalışma grubu oluştururken katılımcıların cinsiyet, yaş, mesleki kıdem, ünvan ve yöneticilikteki görev süresi çeşitliliği dikkate alınmıştır. Katılımcılara ait demografik bilgiler Tablo 1'de sunulmuştur.

Tablo 1. Katılımcılara Ait Demografik Bilgiler

		F	%
Cinsiyet	Kadın	81	38,2
	Erkek	131	61,8
Eğitim Durumu	Lisans	118	55,7
	Yüksek Lisans	91	42,9
	Doktora	3	1,4
Unvan	Okul Müdürü	44	20,8
	Müdür Başyardımcısı	4	1,9
	Müdür Yardımcısı	164	77,4
Yaş	25 ve altı	2	0,9
	26-35	45	21,2
	36-45	95	44,8
	46-55	61	28,8
	56 ve üstü	9	4,2
Mesleki Kıdem	0-5 yaş	9	4,2
	6-10 yıl	29	13,7
	11-15 yıl	36	17
	16-20 yıl	58	27,4
	21 yıl ve üzeri	80	37,7
Eğitim Yöneticiliği Görev Süresi	0-5 yıl	104	49,1
	6-10 yıl	45	21,2
	11-15 yıl	32	15,1
	16 yıl ve üzeri	31	14,6
Görev Yapılan Okulun Öğrenci Sayısı	100-601	28	13,2
	601-1201	59	27,8
	1201-1801	62	29,2
	1801 ve üzeri	63	29,7
Toplam		212	100

Tablo 1'e göre çalışmaya katılan okul yöneticilerinin 81'i (%38,2) kadın, 131'i (%61,8) erkektir. Yöneticilerin 118'i (%55,7) lisans mezunu, 91'i (%42,9) yüksek lisans mezunu, 3'ü (%1,4) doktora mezunudur. Görev türlerine göre 164'ü (%77,4) müdür yardımcılığı, 44'ü (%20,8) müdürlük, 4'ü (%1,9) müdür başyardımcılığı görevlerini yerine getirmektedir. Yaş dağılımına göre, 25 yaş ve altı 2 (%0,9), 26-35 yaş aralığında 45 (%21,2), 36-45 yaş aralığında 95 (%44,8), 46-55 yaş aralığında 61 (%28,8), 56 yaş ve üzeri 9 (%4,2) yönetici çalışmaya katılmıştır. Mesleki kıdemlerine göre yöneticilerin 9'u (%4,2) 0-5 yıllık kıdeme, 29'u (%13,7) 6-10 yıllık kıdeme, 36'sı (%17) 11-15 yıllık kıdeme, 58'i (%27,4) 16-20 yıllık kıdeme, 80'i (%37,7) 21 yıl ve üzeri kıdeme sahiptir. Eğitim yöneticiliği görev sürelerine göre katılımcıların 104'ü (%49,1) 0-5 yıl, 45'i (%21,2) 6-10 yıl, 32'si (%15,1) 11-15 yıl, 31'i (%14,6) 16 yıl ve üzeri görev yapmıştır. Görev yaptıkları okulun öğrenci sayılarına göre yöneticilerin 28'i (%13,2) 100-601 öğrenci, 59'u (%27,8) 601-1201 öğrenci, 62'si (%29,2) 1201-1801 öğrenci, 63'ü (%29,7) 1801 ve üzeri öğrenciye sahip okullarda çalışmaktadır.

Veri Toplama Aracı

İlkokul yöneticilerinin okullarda yaşanan akran zorbalığına ilişkin görüşlerine ulaşabilmek için araştırmacıların bu çalışmada geliştirdiği ''İlkokul Yöneticilerinin Akran Zorbalığına Yönelik Görüşlerini Belirleme Anketi'' kullanılmıştır. Araştırmacılar tarafından geliştirilen ilgili anket iki bölümden oluşmaktadır. Anketin birinci bölümünde "Demografik Bilgiler Formu" yer almaktadır. Bu formda; cinsiyet eğitim durumu, ünvan, yaş, mesleki kıdem, eğitim yöneticiliği görev süresi, görev yapılan okulun öğrenci sayısına ilişkin sorular yer almaktadır. İkinci bölümde ilkokul yöneticilerinin akran zorbalığına ilişkin görüşlerini belirlemek amacıyla çoktan seçmeli 9 maddeden oluşan ''İlkokul Yöneticilerinin Akran Zorbalığına Yönelik Görüşlerini Belirleme Anketi'' yer almaktadır. Anket geliştirme sürecinde ilgili konu ile ilgili alan yazın taraması yapılmıştır.

Anket Geliştirme Süreci

Alan yazın taramasıyla, okul yöneticilerinin görüşlerinin tespit edilmesi için yapılan diğer araştırmalar (Dursun vd., 2024; Pektaş vd., 2023; Aksoy, 2019; Baloğlu vd., 2023; Doğan ve Keleş, 2023; Bayar ve Balcı, 2023; Akpınar ve Akpınar, 2022; Bakır ve Elma, 2023; Barik ve Yurtal, 2023; Muslu, 2023; Sulak ve Altuntaş, 2022; Semercioğlu vd., 2023; Sezgin, 2018; Karataştan ve Akcan, 2023b) incelenmiştir. Literatürdeki ilgili çalışmaların incelenmesinin ardından 15 maddelik madde havuzu oluşturulmuştur.

Anket için geçerlik ve güvenirlik çalışması

İlkokul yöneticilerinin akran zorbalığına dair görüşlerini betimlemek amacıyla geliştirilen 15 maddenin kapsam ve görünüş geçerliliğini incelemek için 5 uzmanın görüşlerine sunulmuştur ve maddeler amaca uygunluğu açısından değerlendirilmiştir. Uzmanlardan alınan görüşler doğrultusunda anket araştırmacılar tarafından yeniden düzenlenerek 9 maddeye indirgenmiş ve pilot uygulama formu oluşturulmuştur. Hazırlanan pilot uygulama formu maddelerin anlaşılabilir ve uygulanabilirliğini değerlendirmek için Gaziantep ili Şahinbey ilçesinde görev yapan 4 eğitim kurumu yöneticisine uygulanmış ve ankete son şekli verilmiştir.

Verilerin Toplanması ve Analizi

İlkokul yöneticilerinin akran zorbalığına ilişkin görüşlerini betimlemek amacıyla geliştirilen 9 maddelik anket katılımcılara çevrimiçi ortamda ulaştırılmış ve gönüllülük esasına dayanarak veriler toplanmıştır. Katılımcılardan veriler çevrimiçi ortamda toplandığı için kayıp değer ve uç değer verilerine rastlanmamıştır. İstatistiksel analiz sürecinde verilerin frekans ve yüzde değerleri, demografik bilgiler ve anketin her bir maddesi bağlamında incelenerek raporlaştırılmıştır.

BULGULAR

Millî Eğitim Bakanlığına bağlı resmî ilkokullarda görev yapan okul yöneticilerinin**,** akran zorbalığına ilişkin görüşlerini incelemeye yönelik olarak yapılan bu araştırmanın bulgularına; araştırmacılar tarafından geliştirilmiş ''İlkokul Yöneticilerinin Akran Zorbalığına Yönelik Görüşlerini Belirleme Anketi'' kullanılarak ulaşılmıştır. Araştırmanın bulguları sunulurken araştırmanın alt problemlerinin ve anket sorularının sırası izlenmiştir.

Araştırmanın birinci alt probleminde "Akran zorbalığını nasıl tanımlarsınız?'' sorusu katılımcılara yöneltilmiştir. Bu alt probleme ilişkin bulgular Tablo 2'de verilmiştir.

Tablo 1. Akran zorbalığının tanımlanmasına ilişkin bulgular

Maddeler	%
Vurma, itme gibi fiziksel saldırılar	28,71
Alay etme, hakaret etme, küçümseme gibi sözlü saldırılar	29,04
Dışlama, dedikodu yapma, arkadaş gruplarından dışlama gibi sosyal dışlanma davranışları	24,75
İnternet üzerinden, sosyal medya veya mesajlaşma uygulamaları aracılığıyla yapılan zorbalık	17,49
Toplam	**100**

Tablo 1 incelendiğinde okul yöneticilerinin: %28,71'i akran zorbalığını ''Vurma, itme gibi fiziksel saldırılar.'' şeklinde tanımlamıştır. %29,04'ü akran zorbalığını ''Alay etme, hakaret etme, küçümseme gibi sözlü saldırılar.'' şeklinde tanımlarken %24,75'i akran zorbalığını ''Dışlama, dedikodu yapma, arkadaş gruplarından dışlama gibi sosyal dışlanma davranışları şeklinde tanımlamıştır. İlkokul yöneticilerinin %17,49'u akran zorbalığını '' İnternet üzerinden, sosyal medya veya mesajlaşma uygulamaları aracılığıyla yapılan zorbalık'' şeklinde tanımlamıştır. Birinci bulgunun istatistiksel değerleri incelendiğinde araştırmaya katılan okul yöneticileri akran zorbalığını en çok ''Alay etme, hakaret etme, küçümseme gibi sözlü saldırılar.'' şeklinde tanımlamıştır.

Araştırmanın ikinci alt probleminde "Okulunuzda akran zorbalığının nedenleri nelerdir?'' sorusu katılımcılara yöneltilmiştir. Bu alt probleme ilişkin bulgular Tablo 3'te verilmiştir.

Tablo 3. Akran zorbalığının nedenlerine ilişkin bulgular

Maddeler	**%**
Aile içi sorunlar	26,73
Sosyo-ekonomik faktörler	22,91
Medya etkisi	19,44
Akademik başarısızlık	10,59
Teknoloji ve sosyal medya kullanımı	20,31
Toplam	**100**

Tablo 3 incelendiğinde okul yöneticilerinin: %26,73'lik kısmı akran zorbalığının en yaygın nedenlerini ''Aile içi sorunlar'' olarak düşünmektedir. Okul yöneticilerinin %22,91'i akran zorbalığının nedenlerinin ''Sosyo-ekonomik faktörler'' olduğunu belirtirken %19,44'ü zorbalığın nedenleri olarak ''Medya etkisi'' olduğunu belirtmiştir. İlkokul yöneticilerinin %10,59'u zorbalığın nedenlerinin ''Akademik başarısızlık'' olduğunu belirtmiştir. %20,31'i ise zorbalığın nedenlerinin '' Teknoloji ve sosyal medya kullanımı'' olduğunu belirtmiştir. Tablo 3 incelendiğinde araştırmaya katılan okul yöneticilerine göre akran zorbalığının en yaygın nedeni ''Aile içi sorunlar'' olarak görülmektedir.

Araştırmanın üçüncü alt probleminde "Okulunuzda akran zorbalığıyla ilgili en sık karşılaşılan davranış türleri nelerdir?' sorusu katılımcılara yöneltilmiştir. Bu alt probleme ilişkin bulgular Tablo 4'te verilmiştir.

Tablo 4. Akran zorbalığıyla ilgili en sık karşılaşılan davranış türlerine ilişkin bulgular

Maddeler	**%**
Fiziksel zorbalık	36,31
Sözel zorbalık	28,70
Siber zorbalık	3,42
Dışlama	18,44
Mağdurun eşyaların zarar görmesi	13,11
Toplam	**100**

Tablo 4 incelendiğinde okul yöneticilerinin: %36,31'ü okullarında ''Fiziksel zorbalık'' davranışlarının yaygın olarak görüldüğünü belirtmişlerdir. İlkokul yöneticilerinin %28,70'i okullarında ''Sözel zorbalık'' davranışlarının yaygın olarak görüldüğünü belirtirken %3,42'si okullarında ''Siber zorbalık'' davranışlarının yaygın olarak görüldüğünü belirtmişlerdir. İlkokul yöneticilerinin %18,44'ü okullarında ''Dışlama'' davranışlarının yaygın olarak görüldüğünü %13,11'i ise okullarında ''Mağdurun eşyaların zarar görmesi'' davranışlarının yaygın olarak görüldüğünü belirtmişlerdir. Tablo 4 incelendiğinde "Fiziksel zorbalık'' araştırmaya katılan okul yöneticilerinin okullarında en sık karşılaştığı akran zorbalığı davranışıdır. Araştırmanın dördüncü alt probleminde "Akran zorbalığına maruz kalan öğrencilerin özellikleri nelerdir?" sorusu katılımcılara yöneltilmiştir. Bu alt probleme ilişkin bulgular Tablo 5'te verilmiştir.

Tablo 5. Akran zorbalığına maruz kalan öğrencilerin özelliklerine ilişkin bulgular

Maddeler	**%**
Fiziksel zayıflık	32,46
Düşük özgüven	37,90
Akademik başarısızlık	16,33
Farklı etnik köken	13,28
Toplam	**100**

Tablo 5 incelendiğinde ilkokul yöneticilerinin: %32,46'sı akran zorbalığına maruz kalan öğrencilerin özelliklerinin ''Fiziksel zayıflık'' olduğunu belirtmiştir. Okul yöneticilerinin %37,90'ı akran zorbalığına maruz kalan öğrencilerin ''Düşük özgüvene'' sahip olduğunu belirtmiştir. Akran zorbalığına maruz kalanların "Akademik başarısızlık" özelliğine de sahip olduğunu bildiren yöneticilerin oranı ise %16,33'dür. Yöneticilerin %13,28'i akran zorbalığına maruz kalan öğrencilerin özelliklerinde ''Farklı etnik köken'' olduğunu belirtmiştir. Tablo 5 incelendiğinde yöneticiler düşük özgüvenin akran zorbalığına maruz kalan öğrencilerin en fazla sahip olduğu özellik olarak nitelendirmiştir. Araştırmanın beşinci alt probleminde "Akran zorbalığı yapan öğrencilerin özellikleri nelerdir?" sorusu katılımcılara yöneltilmiştir. Bu alt probleme ilişkin bulgular Tablo 6'da verilmiştir.

Tablo 6. Akran zorbalığı yapan öğrencilerin özelliklerine ilişkin bulgular

Maddeler	**%**
Güç gösterisi yapma arzusu	28,68
Düşük empati seviyesi	18,03
Dikkat çekme isteği	27,04
Akademik başarısızlık	17,54
Farklı etnik köken	8,52
Aile içi şiddete maruz kalma	0,16
Toplam	**100**

Tablo 6 incelendiğinde yöneticilerin akran zorbalığı yapan öğrencilerin %,28,68'si "Güç gösterisi yapma arzusu'', %18,03'ü "düşük empati seviyesi'', %27,04 "Dikkat çekme isteği'', %17,54'ü "Akademik başarısızlık'', %,8,52'si "Farklı etnik köken'' ve 0,16'sı "Aile içi şiddete maruz kalma" özelliklere sahip olduğunu belirtmiştir. Tablo 6 incelendiğinde ilkokul yöneticileri güç gösterisi yapma arzusunun akran zorbalığı yapan öğrencilerin en fazla sahip olduğu özellik olarak belirtmiştir. Araştırmanın altıncı alt probleminde "Akran zorbalığı vakalarına nasıl müdahale ediyorsunuz?" sorusu katılımcılara yöneltilmiştir. Bu alt probleme ilişkin bulgular Tablo 7'de verilmiştir.

Tablo 7. Akran zorbalığına yönelik yapılan müdahalelere ilişkin bulgular

Maddeler	**%**
Olayın araştırılması	14,59
Taraflarla birebir görüşme	26,42
Aileleri bilgilendirme ve destek sunma	23,06
Disiplin cezaları uygulama	4,08
Psikolojik destek ve rehberlik sağlama	20,28
Sürekli izleme ve değerlendirme	11,24
Toplam	**100**

Tablo 7 incelendiğinde yöneticilerin akran zorbalığına yönelik %14,59'u "Olayın araştırılması", %26,42'si "Taraflarla birebir görüşme", %23,06'sı "Aileleri bilgilendirme ve destek sunma", %4,08'i " Disiplin cezaları uygulama", % 20,58'i "Psikolojik destek ve rehberlik sağlama" ve % 11,24'ü "Sürekli izleme ve değerlendirme" müdahalede bulunduğunu belirtmiştir. Tablo 7 incelendiğinde yöneticilerin akran zorbalığına yönelik en fazla "Taraflarla birebir görüşme" müdahalesinde bulunduğu görülmektedir. Araştırmanın yedinci alt probleminde "Akran zorbalığı vakaları ile mücadelede karşılaştığınız zorluklar nelerdir?" sorusu katılımcılara yöneltilmiştir. Bu alt probleme ilişkin bulgular Tablo 8'de verilmiştir.

Tablo 8. Akran zorbalığı vakaları ile mücadelede karşılaşılan zorluklara ilişkin bulgular

Maddeler	**%**
Yetersiz kaynaklar	7,16
Öğrenci ve veli direnci	50,41
İlgili mevzuat yetersizliği	35,26
Okul personelinin yetersizliği	6,88
Öğretmenlerin ilgisizliği	0,27
Toplam	**100**

Tablo 8 incelendiğinde yöneticilerin akran zorbalığı vakaları ile mücadelede %7,16'sı "Yetersiz kaynaklar", %50,41'i "Öğrenci ve veli direnci", %35,26'sı "İlgili mevzuat yetersizliği", %6,88'i "Okul personelinin yetersizliği" ve %0,27'si "Öğretmenlerin ilgisizliği" zorlukları ile karşılaştıklarını belirtmiştir. Tablo 8 incelendiğinde yöneticilerin akran zorbalığı vakaları ile mücadelede ne fazla "Öğrenci ve veli direnci" ile zorluğu ile karşılaştıklarını belirtmişlerdir. Araştırmanın sekizinci alt probleminde "Akran zorbalığı vakalarını önlemeye yönelik izlenen stratejiler nelerdir?" sorusu katılımcılara yöneltilmiştir. Bu alt probleme ilişkin bulgular Tablo 9'da verilmiştir.

Tablo 9. Akran zorbalığı vakalarını önlemeye yönelik izlenen stratejilere ilişkin bulgular

Maddeler	**%**
Zorbalığı önlemeye yönelik politika oluşturma	5,05
Okul yönetiminin aktif rolü	17,07
Öğrenci, öğretmen ve aile iş birliği	31,88
Bilgilendirici broşürler ve afişler	8,71
Aile toplantıları ve seminerler	23,51
Öğrenci bilgilendirme toplantıları	13,76
Toplam	**100**

Tablo 9 incelendiğinde yöneticileri okullarında akran zorbalığını önlemeye yönelik olarak % 5,05'i "Zorbalığı önlemeye yönelik politika oluşturma", %17,07'si "Okul yönetiminin aktif rolü", %31,88'i "Öğrenci, öğretmen ve aile iş birliği", %8,71'i "Bilgilendirici broşürler ve afişler", %23,51'i "Aile toplantıları ve seminerler" ve %13,76'sı "Öğrenci bilgilendirme toplantıları" stratejilerini takip ettiklerini belirtmiştir. Tablo 9 incelendiğinde yöneticilerin akran zorbalığı vakalarını önlemeye yönelik izlediği en fazla stratejinin "Öğrenci, öğretmen ve aile iş birliği" stratejisi olduğu görülmektedir. Araştırmanın dokuzuncu alt probleminde "Akran zorbalığı ile mücadelede daha etkili olabilmek için hangi alanlarda desteğe ihtiyacınız vardır?" sorusu katılımcılara yöneltilmiştir. Bu alt probleme ilişkin bulgular Tablo 10'da verilmiştir.

Tablo 10. Yöneticilerin akran zorbalığı ile mücadelede daha etkili olabilmek için hangi alanlarda desteğe ihtiyacı olduğuna ilişkin bulgular

Maddeler	**%**
Maddi kaynak ihtiyacı	14,17
Eğitim materyalleri ihtiyacı	20,49
Uzman desteği ihtiyacı	36,59
Eğitim faaliyetlerinin arttırılması ihtiyacı	28,73
Toplam	**100**

Tablo 10 incelendiğinde yöneticileri okullarında akran zorbalığı ile mücadelede %14,17'si "Maddi kaynaklar ihtiyacı", %20,49'u "Eğitim materyalleri ihtiyacı", %26,59'u "Uzman desteği ihtiyacı" ve %28,73'ü "Eğitim faaliyetlerinin arttırılması ihtiyacı" desteğine ihtiyaç duymaktadır. Tablo 10 incelendiğinde yöneticiler akran zorbalığı ile mücadelede daha etkili olabilmek için en fazla uzman desteğine ihtiyacını olduğunu belirtmişlerdir.

SONUÇLAR ve TARTIŞMA

İlkokullarda akran zorbalığına ilişkin okul yöneticilerinin görüşleri alınarak mevcut durumu betimlemek amacıyla yapılan bu çalışmanın bulgularına araştırmacılar tarafından geliştirilen ''İlkokul Yöneticilerinin Akran Zorbalığına Yönelik Görüşlerini Belirleme Anketi'' kullanılarak ulaşılmıştır. İlgili ankette araştırmanın her bir alt problemine ilişkin sorulara yer verilmiştir ve elde edilen istatistiksel değerler ayrıntılı olarak bulgular kısmında sunulmuştur.

İlkokullarda görev yapan okul yöneticileri akran zorbalığını daha çok alay etme, hakaret etme, küçümseme gibi sözlü saldırılar şeklinde tanımlamaktadır. Şahin vd.'nin (2009) okul öncesi öğretmenlerinin görüşlerini incelediği araştırma bu bulguyu desteklemektedir. Dursun vd.'nin (2024) okul yöneticilerinin akran zorbalığı hakkındaki görüşlerini incelemek amacıyla yaptığı nitel yöntemlere dayalı çalışma, araştırmanın bu alt problemine ilişkin sonuçları ile aynı doğrultudadır. İlgili çalışmaların sonuçlarına göre zorbalık tanımları eğitimin paydaşları arasında fiziksel, psikolojik ve sözlü zarar çerçevesinde karşılık bulmaktadır.

Araştırma akran zorbalığının en yaygın nedeninin aile içi sorunlar olduğu sonucuna ulaşılmıştır. Wang vd., (2023) yaptıkları çalışmada ailenin sosyo-ekonomik düzeyi ile zorbalık arasında ilişki olduğu sonucuna ulaşılmıştır. Çünkü akran zorbalığı ailesel faktörlerden etkilenen bir durumdur (Rigby, 2007; Tanrıkulu ve Campbell, 2015). Eray vd. (2020) aile tavırları ile akran zorbalığı vakaları arasındaki ilişkiyi ortaya koyarak ilgili alt problemin sonuçlarını desteklemektedir. Hoşgörür ve Orhan (2017) yaptıkları çalışmada aile içi yaşantılar ve ebeveyn tutumlarından zorbalık vakalarının etkilendiği sonucuna ulaşmışlardır. Muscarı (2002) ilgili çalışmasında, bu araştırma sonucuna benzer nitelikte aile içindeki olumsuz rol modellerin okullardaki zorbalık vakalarını tetiklediğini belirtmiştir. Gökbilgin ve Elma (2019) ilgili çalışmalarında, aile eğitimsizliğinin okul içi zorbalık vakalarını etkilediği sonucuna ulaşmıştır. Ayrıca ebeveynler ve çocuklar arasındaki iletişim örüntüsü zorbalığı etkileyen önemli bir faktördür (Garces-Prettel, 2020; Rinaldi, 2023; Ulfah ve Gustina, 2020). Bu bağlamda bu araştırma sonuçları ile alanda yapılan diğer çalışma sonuçları örtüşmektedir.

İlkokul yöneticilerine göre fiziksel zorbalık vakaları ile daha fazla karşılaşılması araştırmanın bir diğer sonucudur. Çubukçu ve Dönmez (2012) şiddet türlerine yönelik yaptıkları çalışmada araştırma bulgularını destekler nitelikte fiziksel ve sözel zorbalık vakalarının daha fazla görüldüğü sonucuna ulaşmıştır. Benzer şeklide Özbek ve Taneri (2022) yaptıkları çalışmada fiziksel zorbalığın ilkokul öğrencileri arasında en yaygın zorbalık türü olduğu sonucuna ulaşmıştır. Özkan ve Çifci (2010) akran zorbalığı vakalarını sosyo-ekonomik düzeylerine göre incelemiş fiziksel ve sözel zorbalık davranışlarının daha yaygın olduğunu ifade etmişlerdir Akduman (2012) ve Tanrıkulu (2020) çalışmalarında okul öncesi dönemde fiziksel zorbalık davranışlarının fazla olduğu sonucuna ulaşılmıştır. Danacı ve Çetin'in (2016) çalışması da bu sonuçla benzerlik göstermektedir. Yapılan farklı çalışmaların sonuçları ile bu çalışmanın sonucu paralellik göstermektedir. Craig vd. (2009) altı ülkeden topladığı ve büyük bir örneklem grubu üzerinden elde ettiği bulgular ise bu alt problemde okul yöneticilerinin görüşlerine göre ikinci sırada yer alan cevap olan sözel zorbalık davranışlarının diğer zorbalık türlerine göre daha fazla görüldüğünü göstermektedir.

Özgüveni düşük öğrencilerin akran zorbalığı ile daha fazla karşılaştığı araştırmanın bir diğer sonucudur. Zorbalığa maruz kalan bireyler endişeli ve utangaç özelliğine sahiptirler (Jennifer ve Cowie, 2012). Gürhan (2017) akran zorbalığını bütün boyutlarıyla ele aldığı çalışmasında zorbalık mağduru öğrencileri özgüveni düşük çocuklar olarak tanımlamıştır. Özgöker'e (2018) göre zorbalık vakalarının görülmesi öğrencileri duygusal açıdan etkilemektedir. Topçu'nun (2018) çalışmasının sonuçlarına göre, zorbalık mağduru öğrencilerin yaşadığı psikolojik etkiler yaşamlarının ilerleyen dönemlerini de etkilemektedir.

Çalışmanın bir diğer sonucu ise; akran zorbalığı yapan öğrencilerin güç gösterisi yapma özelliğine sahip olmalarıdır. Zorbalık davranışları gösteren çocukların özelliklerini inceleyen

Olwes'a (1993) göre zorba çocuklar diğer bireyleri baskı altına alarak haz duyan ve bu davranışlarını yeni akran gruplarına girdiklerinde de sürdüren bireylerdir. Liderlik hedefiyle, saldırganca davranışlarını düzenli ve sürekli bir şekilde sergiler. Košir vd., (2020) yaptıkları çalışmada popüler olmak ile zorbalığın pozitif ilişkili olduğu sonucuna ulaşmıştır. Birey bir gruba katıldığında, kendi güçlerini kabul ettirebilmek amacıyla saldırganlığı bir araç olarak kullanır. Bu süreçte hedef olarak genellikle fiziksel açıdan daha zayıf, sosyal becerileri sınırlı ve yalnız çocukları seçerler. Bu seçim hem gücün kolayca gösterilmesini hem de hedefin kendilerine karşı koyma ihtimalinin düşük olmasını sağlamaktadır (Olwes, 1994). İlgili literatür dikkate alındığında akran zorbalığı yapan bireyler gücü bir araç olarak kullanmaktadır. Bu durum çalışmanın sonucu ile örtüşmektedir.

Araştırmada okul yöneticilerinin akran zorbalığı vakalarını önleme yöntemleri de incelemiştir. Bu bağlamda çalışmaya katılan okul yöneticilerinin velilerle iş birliği yaparak vakaların önüne geçmeye çalıştıkları sonucuna ulaşılmıştır. Öğrenciler, öğretmenler, yöneticiler ve ebeveynler eğitim kurumlarında zorbalığa müdahale etmeye ve zorbalığı önlemede işbirliği içinde olmalıdır (Waters ve Mashburn, 2017). Şahin vd., (2009) çalışmalarında öğretmenlerin veliler ile iletişim kurarak zorbalık vakaları ile mücadele ettikleri sonucuna ulaşmıştır. Olumlu öğretmen-öğrenci ilişkilerini teşvik etmek zorbalık ve akran mağduriyetiyle mücadeleye yardımcı olabilir. (Ten Bokkel vd., 2023). Ayrıca öğretmenlerin zorbalık karşıtı programlarda önemli bir rol oynamaktadır (Krause ve Smith, 2022; Veenstra vd., 2014). Bu bağlamda akran zorbalığını azaltmada öğretmen öğrenci ilişkisi ve işbirliği önem arz etmektedir. Araştırma sonuçları bu durumu destekler niteliktedir. Araştırmada okul yöneticilerinin öğrenci ve veli direnci nedeniyle akran zorbalığı ile mücadelede zorluklar yaşadığı sonucuna ulaşılmıştır. Lee vd. (2022) geniş çaplı örneklem grubu ile yaptığı ilişkisel araştırması zorbalık vakaları ile aile desteği arasında negatif yönde ilişki olduğu sonucuna varmıştır. Akran zorbalığı konusunda aile desteği ne kadar fazla olursa vakaların görülmesi o kadar azalacaktır sonucu bu araştırmaya katılım gösteren okul yöneticilerinin düşünceleri ile aynı doğrultuda olup sonucu destekler niteliktedir.

Araştırmada ilkokul yöneticilerinin vakalar ile mücadelede uzman desteğine ihtiyaç duyduğu sonucuna ulaşılmıştır. Özgöker (2018) araştırmasında, öğretmenlerin zorbalık ile mücadelede herhangi bir eğitim almadıkları sonucuna ulaşmıştır. Çubukçu ve Dönmez (2012) de yaptığı çalışmada zorbalık vakaları ile mücadelede öğrenci, öğretmen ve veli eğitimleri ile uzman desteği sağlamanın önemine dikkat çekmiştir. Oldenburg vd. (2016) vakaların çözümünde yöntemlerin sınırlı kaldığını belirtmiştir. Literatürdeki sonuçlara benzer şekilde uzman desteği noktasında yeni yöntemler üzerine çalışmak okullarda akran zorbalığının daha az görülmesini sağlayacaktır. Araştırma sonuçları ve sınırlılıkları bağlamında şu öneriler sunulabilir;

1. Akran zorbalığına maruz kalan öğrencilerin özgüveni ve akademik başarısını artırmaya yönelik programlar uygulanmalıdır.

2. Akran zorbalığı yapan öğrencilerin ihtiyaçları dikkate alınarak zorbalık davranışlarını azaltıcı önlemler alınmalıdır.

3. Okullarda akran zorbalığını azaltma ve yönetmede okulların ihtiyacı olan maddi kaynak, eğitim materyali ve uzman desteği sağlanmalıdır.

4. Okul şartları ve öğrenci profili detaylı incelenerek davranış problemleri görülmeden zorbalık önleyici faaliyetler yürütülebilir.

5. Akran zorbalığı ile ilgili boylamsal ve deneysel çalışmalar yapılarak, okul yöneticilerinin akran zorbalığındaki rolü daha derinlemesine incelenebilir.

Sınırlılıklar

İlkokullarda görev yapan okul yöneticilerinin perspektifinden akran zorbalığını incelemek amacıyla yapılan bu çalışmanın verileri, 2024-2025 eğitim öğretim yılında Gaziantep ili

Şahinbey ilçesinde görev yapan okul yöneticilerinin katılımıyla toplanmış ve bu yöneticilerin görüşleriyle sınırlıdır.

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Peer Bullying from the Perspective of Primary School Administrators: What, Who, Why, Consequences and Prevention Strategies

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Abstract
This research is a survey-based study exploring the views of school administrators in primary schools on peer bullying. The sample includes 212 school administrators from public primary schools in the Şahinbey district of Gaziantep. The purposive sampling method was used, and data was collected through a questionnaire developed by the researchers. Frequency and percentage values of the responses were analyzed. The study found that administrators most commonly defined peer bullying as teasing and insulting, with domestic problems cited as the main cause. Physical bullying was identified as the most prevalent type. Administrators noted that bullied students had low self-confidence, while bullies exhibited these behaviors to assert power. One-on-one interviews were the most common method used by administrators to address bullying. The study also identified student and parent resistance as major obstacles in combating bullying. Administrators emphasized the importance of cooperation among students, teachers, and families and recognized the need for expert support. Providing such support to schools is crucial to reducing bullying.

Keywords: Bullying, peer bullying, Primary school, School administrator

INTRODUCTION

Peer aggression and bullying remain a global public health crisis. The prevalence of bullying is high worldwide, with nearly one-third of young people experiencing peer victimization (Krause & Smith, 2022; UNICEF, 2019). At the same time, peer bullying is a widespread issue in educational institutions, often leading to serious consequences. It is defined as repeated and intentionally harmful behavior by a student or a group of students toward another student or group, with the intent to inflict pain or exert physical and psychological pressure (Olweus, 1993; Borgen et al., 2021; Açıkgöz, 2017). If the necessary measures and precautions are not taken against peer bullying, which manifests through power imbalances, it can have profound effects on victims (Ayas & Pişkin, 2011). For behavioral problems observed in educational institutions to be classified as bullying, actions or manipulative behaviors based on power imbalances must occur at least once a week for at least a month, though this may vary depending on the case (Roland & Munthe, 1989; Olweus, 2013; Yaman, 2011).

Bullying behaviors can be categorized into two groups—direct and indirect bullying—based on their mode of execution. In direct bullying, there is direct interaction between the victim and the bully, whereas in indirect bullying, aggression is expressed through tertiary factors (Gladden et al., 2014; Rivers & Smith, 1994; Björkqvist et al., 1992). Additionally, bullying behaviors can be classified into physical, verbal, emotional, and cyberbullying, the latter emerging as a behavioral issue with advancements in science and technology (Griffin & Alan, 2004; Willard, 2005).

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Research Article

Peer bullying can have serious psychological effects on victims, including low self-esteem, depression, anxiety, and even suicidal thoughts. Students who experience bullying may feel worthless, inadequate, and lonely as a result of their negative experiences (Espelage & Swearer, 2004). Following bullying incidents, victims' daily lives and academic performance are often negatively affected, potentially leading to long-term consequences such as school avoidance and social isolation (Rigby, 2003). Doğan and Keleş (2023) examined peer bullying in terms of its causes, consequences, and possible solutions, while also analyzing the profiles of both bully and victim students. The study found that bullies generally have low levels of empathy and attempt to enhance their social status through aggression. Victimized students, on the other hand, were typically described as socially isolated and vulnerable individuals with low self-esteem.

Peer bullying is a significant issue that negatively impacts students' mental health and academic success. Kılınç (2023) conducted a systematic analysis of peer bullying studies from 2010 to 2020. The results of this research indicate that although peer bullying is prevalent across all levels of education, the existing solutions are insufficient. Talu and Gümüş's (2022) meta-analysis of peer bullying among adolescents reveals that, on average, students are exposed to peer bullying twice during an academic year. The findings of these studies highlight that peer bullying remains a common and ongoing problem in our country. Similar studies have also been conducted internationally. Kljakovic and Hunt (2016) conducted a meta-analysis and concluded that peer bullying leads to social and behavioral problems in schools across countries such as the USA, Korea, China, Finland, and the Netherlands. Moore et al. (2017), in their own meta-analysis, stated that peer bullying is a significant issue related to mental well-being, requiring attention within the student context. Walters (2020) reached similar conclusions in his study, highlighting the association between peer bullying and various risky behaviors. The comprehensive findings from these meta-analyses underscore that peer bullying is a problem that needs to be addressed not only in Turkey but also internationally, at both individual and societal levels.

Cases of peer bullying in Turkey have a negative impact on students' social and emotional development. To mitigate these effects, the Ministry of National Education has implemented awareness and training programs covering topics such as 'peer bullying,' 'cyberbullying,' and 'psychological resilience' at all educational levels, starting from the 2022-2023 academic year (Ministry of National Education, 2023). When examining peer bullying research in the context of primary schools in Turkey, it is evident that bullying cases are prevalent. Studies on peer bullying at the primary school level have been conducted in the areas of students, teachers, and psychological counseling and guidance services. Both qualitative and quantitative studies have been presented, incorporating the perspectives of various stakeholders. Akpınar and Akpınar (2022) examined primary school teachers' perspectives on peer bullying and found that teachers possess a high level of awareness regarding this issue. Barik and Yurtal (2023) investigated classroom teachers' strategies for coping with peer bullying and the challenges they face. The study's findings indicate that primary school teachers do not receive adequate support in addressing bullying and require additional training in this area. It was suggested that teachers' competencies in identifying and intervening in bullying situations should be strengthened. Karataştan and Akcan (2023a) explored the exposure of immigrant and refugee children to peer bullying from the perspective of classroom teachers. The study reveals that immigrant and refugee children are more vulnerable to bullying due to language and cultural differences, which negatively impacts their adaptation processes. Bayar and Balcı (2023) examined peer bullying and potential solutions from the perspective of school counselors. School counselors play a crucial role in detecting bullying incidents and providing psychological support to students. The study emphasizes the need for adequate resources and training to enable guidance counselors to be more effective. A review of the literature on peer bullying, both nationally and internationally, reveals that it is a significant issue across all aspects of the educational process.

Peer bullying is one of the primary challenges faced by education systems today, and it has serious effects on children's mental health, social development, and academic success (Olweus, 2013). Bullying incidents in the school environment harm students' self-confidence, reduce academic performance, and lead to school absenteeism and social isolation (Rigby, 2003). Therefore, combating bullying requires the involvement of not only teachers and school administrators but also parents, guidance counselors, and other community stakeholders (Swearer & Espelage, 2004). Examining the perspectives of administrators is crucial in addressing peer bullying, as it helps describe the current situation and contributes to creating a safe educational climate within the school environment (Smith, 2011). Educators should carefully assess the impact of bullying on students' lives, both inside and outside the classroom, and make a conscious, systematic effort to address the problem proactively rather than reactively (Waters & Mashburn, 2017). Therefore, this study aims to contribute to the literature on combating peer bullying by providing data to inform the development of practices that can be implemented, particularly at the primary school level. The results of this study will contribute to strengthening school administrators' strategies for combating peer bullying and will serve as a resource for practices that can enhance student safety and well-being by revealing the current situation. This study aims to foster a shared awareness among educational administrators, teachers, and parents. The findings will facilitate the establishment of a broader network of cooperation and support in the fight against peer bullying. The results of the research are significant both for contributing to theoretical knowledge and for guiding the development of practical policies. In this context, the research sought answers to the following questions:

1. How do school administrators define peer bullying?

2. What do school administrators consider to be the causes of peer bullying in schools?

3. What are the most common types of behaviors related to peer bullying, according to school administrators?

4. What characteristics do school administrators identify in students who are exposed to peer bullying?

5. What characteristics do school administrators attribute to students who engage in peer bullying?

6. How do school administrators intervene in cases of peer bullying?

7. What challenges do school administrators face in combating peer bullying?

8. What strategies do school administrators implement to prevent peer bullying?

9. What areas of support do school administrators believe are necessary to enhance their effectiveness in combating peer bullying?

METHOD

Research Design

This research is a study organized according to the survey model, based on quantitative methods, conducted to describe the current situation in relation to the opinions of school administrators working in public primary schools affiliated with the Ministry of National Education regarding peer bullying cases. Survey research is a research design that aims to describe the current state by selecting a sample from a specific population. This type of research seeks to examine the prevalence, distribution, or relationships of a particular phenomenon by collecting data from large groups of participants. According to Büyüköztürk (2019), survey models aim to describe the existing situation of the event or phenomenon being studied as it is. This study is a survey-based study because it describes the causes and consequences of peer bullying and outlines what should be done to prevent it, using a questionnaire developed by the researchers.

Population and Sample of the Study

The research population consists of school administrators working in public primary schools affiliated with the Ministry of National Education in the Şahinbey district of Gaziantep province. To select the sample, the maximum diversity sampling method, a type of purposeful sampling, was employed. In maximum diversity sampling, the goal is to reflect the broadest possible diversity of participants in the study, thereby revealing different dimensions of the problem (Yıldırım & Şimşek, 2013). For this study, factors such as gender, age, professional seniority, title, and tenure in management were considered while forming the study group. Demographic information of the participants is presented in Table 1.

Table 1. Demographic Information of the Participants

		F	%
Gender	Female	81	38,2
	Male	131	61,8
Education Status	Bachelor's degree Master's	118	55,7
	degree	91	42,9
	Doctoral degree	3	1,4
Title	School principal	44	20,8
	Chief Ast. Manager	4	1,9
	Assistant Manager	164	77,4
Age	25 and below	2	0,9
	26-35	45	21,2
	36-45	95	44,8
	46-55	61	28,8
	56 and above	9	4,2
Professional Seniority	0-5 age	9	4,2
	6-10 year	29	13,7
	11-15 year	36	17
	16-20 year	58	27,4
	21 year and above	80	37,7
Education Administrator Tenure	0-5 year	104	49,1
	6-10 year	45	21,2
	11-15 year	32	15,1
	16 year and above	31	14,6
Number of Students of the School	100-601	28	13,2
	601-1201	59	27,8
	1201-1801	62	29,2
	1801 ve üzeri	63	29,7
Total		212	100

According to Table 1, 81 (38.2%) of the school administrators participating in the study were female, while 131 (61.8%) were male. Of the administrators, 118 (55.7%) held a bachelor's degree, 91 (42.9%) held a master's degree, and 3 (1.4%) held a doctoral degree. Regarding their job titles, 164 (77.4%) were assistant principals, 44 (20.8%) were principals, and 4 (1.9%) were chief assistant principals. In terms of age distribution, 2 (0.9%) administrators were aged 25 and under, 45 (21.2%) were aged 26-35, 95 (44.8%) were aged 36-45, 61 (28.8%) were aged 46-55, and 9 (4.2%) were aged 56 and over. Regarding professional seniority, 9 (4.2%) administrators had 0-5 years of experience, 29 (13.7%) had 6-10 years, 36 (17%) had 11-15 years, 58 (27.4%) had 16-20 years, and 80 (37.7%) had 21 years or more of experience. In terms of tenure as an educational administrator, 104 (49.1%) participants had 0-5 years of service, 45 (21.2%) had 6-10 years, 32 (15.1%) had 11-15 years, and 31 (14.6%) had 16 or more years of experience. Regarding the number of students in the schools where they work, 28 (13.2%) administrators worked in schools with 100-600 students, 59 (27.8%) worked in schools with 601-1200 students, 62 (29.2%) worked in schools with 1201-1800 students, and 63 (29.7%) worked in schools with more than 1800 students.

Data Collection Tool

In order to reach the views of primary school administrators on peer bullying in schools, the 'Questionnaire for Determining the Views of Primary School Administrators on Peer Bullying' developed by the researchers in this study was used. The questionnaire developed by the researchers consists of two parts. The first part of the questionnaire includes 'Demographic Information Form'. In this form, there are questions about gender, educational status, title, age, professional seniority, tenure as an educational administrator, and the number of students in the school. In the second part, in order to determine the views of primary school administrators on peer bullying, the 'Questionnaire for Determining the Views of Primary School Administrators on Peer Bullying' consisting of 9 multiple-choice items is included. During the questionnaire development process, a literature review on the related subject was conducted.

Questionnaire Development Process

The literature review included an examination of other studies conducted to determine the opinions of school administrators (Dursun et al., 2024; Pektaş et al., 2023; Aksoy, 2019; Baloğlu et al., 2023; Doğan & Keleş, 2023; Bayar & Balcı, 2023; Akpınar & Akpınar, 2022; Bakır & Elma, 2023; Barik & Yurtal, 2023; Muslu, 2023; Sulak & Altuntaş, 2022; Semercioğlu et al., 2023; Sezgin, 2018; Karataştan & Akcan, 2023b). After analyzing the relevant studies in the literature, an item pool consisting of 15 items was created.

Validity and Reliability Study for the Questionnaire

To assess the content and face validity of the 15 items developed to capture the views of primary school administrators on peer bullying, the items were presented to 5 experts for their opinions. The items were evaluated based on their suitability for the intended purpose. Following the experts' feedback, the researchers reorganized the questionnaire, reducing it to 9 items, and a pilot version was created. This pilot version was then administered to 4 educational institution administrators in the Şahinbey district of Gaziantep province to assess the clarity and applicability of the items. Based on this evaluation, the final version of the questionnaire was prepared.

Data Collection and Analysis

The 9-item questionnaire, developed to capture the views of primary school administrators on peer bullying, was distributed to participants online, and data were collected on a voluntary basis. Since the data were collected online, no missing or outlier values were identified. In the statistical analysis process, the frequency and percentage values of the data were examined and reported in relation to the demographic information and each item of the questionnaire**.**

RESULTS

The findings of this study, which was conducted to examine the views of school administrators working in official primary schools affiliated to the Ministry of National Education on peer bullying, were obtained by using the 'Questionnaire for Determining the Views of Primary School Administrators on Peer Bullying' developed by the researchers. While presenting the findings of the research, the order of the sub-problems of the research and the survey questions were followed.

In the first sub-problem of the study, the question 'How do you define peer bullying?' was asked to the participants. The findings related to this sub-problem are given in Table 2.

Table 2. Findings related to the definition of peer bullying

Items	%
Physical attacks such as hitting, pushing	28,71
Verbal attacks such as mocking, insulting, belittling	29,04
Social exclusion behaviours such as exclusion, gossiping, exclusion from friend groups	24,75
Bullying via the internet, social media or messaging applications	17,49
Total	**100**

When Table 2 is examined, 28.71% of school administrators defined peer bullying as "physical attacks such as hitting or pushing," while 29.04% defined it as "verbal attacks such as mocking, insulting, or belittling." Additionally, 24.75% defined peer bullying as "social exclusion behaviors such as exclusion, gossiping, or being excluded from friend groups." Furthermore, 17.49% of primary school administrators defined peer bullying as "bullying via the internet, social media, or messaging applications." When the statistical values of the first finding were analyzed, it was found that the majority of school administrators who participated in the study defined peer bullying as "verbal attacks such as mocking, insulting, or belittling."

In the second sub-problem of the study, the question 'What are the causes of peer bullying in your school?' was asked to the participants. The findings related to this sub-problem are given in Table 3.

Table 3. Findings related to the causes of peer bullying

Items	%
Family problems	26,73
Socio-economic factors	22,91
Media effect	19,44
Academic failure	10,59
Technology and social media use	20,31
Total	**100**

When Table 3 is analyzed, 26.73% of school administrators believe that the most common cause of peer bullying is "family problems." Meanwhile, 22.91% of school administrators identified "socio-economic factors" as the causes of peer bullying, and 19.44% attributed it to the "media effect." Additionally, 10.59% of primary school administrators mentioned "academic failure" as a cause, and 20.31% pointed to "technology and social media use" as contributing factors. According to the school administrators who participated in the research, the most common cause of peer bullying is "family problems."

In the third sub-problem of the research, the participants were asked the question, "What are the most common types of behaviors related to peer bullying in your school?" The findings related to this sub-problem are presented in Table 4.

Table 4. Findings related to the most frequently encountered behavior types associated with peer bullying.

Items	%
Physical bullying	36,31
Verbal bullying	28,70
Cyberbullying	3,42
Exclusion	18,44
Damaging the victim's belongings	13,11
Total	**100**

When Table 4 is examined, 36.31% of school administrators reported that "physical bullying" behaviors are commonly observed in their schools. Meanwhile, 28.70% of primary school administrators indicated that "verbal bullying" behaviors are common in their schools, and

3.42% mentioned that "cyberbullying" behaviors are prevalent. Additionally, 18.44% of the primary school administrators stated that "exclusion" behaviors are common, and 13.11% reported that "damaging the victim's belongings" behaviors are frequently encountered. Based on the findings from Table 4, "physical bullying" is identified as the most common type of peer bullying behavior encountered by the school administrators participating in the research.

In the fourth sub-problem of the study, participants were asked the question, "What are the characteristics of students exposed to peer bullying?" The findings related to this sub-problem are provided in Table 5.

Table 5. Findings on the characteristics of students exposed to peer bullying.

Items	%
Physical weakness	32,46
Low self-confidence	37,90
Academic failure	16,33
Different ethnic origins	13,28
Total	**100**

When Table 5 is analyzed, 32.46% of primary school administrators stated that the characteristics of students exposed to peer bullying include "physical weakness." 37.90% of school administrators reported that students exposed to peer bullying have "low self-confidence." The percentage of administrators who indicated that students exposed to peer bullying also exhibit "academic failure" as a characteristic is 16.33%. Furthermore, 13.28% of administrators stated that students exposed to peer bullying have "different ethnic origins." Based on the findings in Table 5, the administrators identified low self-confidence as the most common characteristic of students who are exposed to peer bullying.

In the fifth sub-problem of the study, the question "What are the characteristics of students who engage in peer bullying?" was asked to the participants. The findings related to this sub-problem are presented in Table 6.

Table 6. Findings related to the characteristics of students who engage in peer bullying

Items	%
Desire to show power	28,68
Low empathy level	18,03
Desire to attract attention	27,04
Academic failure	17,54
Different ethnic origin	8,52
Exposure to domestic violence	0,16
Total	**100**

When Table 6 is analyzed, it is observed that 28.68% of the administrators stated that students who bully peers have the characteristic of "desire to show power," 18.03% reported "low empathy level," 27.04% indicated "desire to attract attention," 17.54% identified "academic failure," 8.52% noted "different ethnic origin," and 0.16% mentioned "exposure to domestic violence." Based on the analysis of Table 6, primary school administrators identified "desire to show power" as the most common characteristic of students who engage in bullying.

In the sixth sub-problem of the study, the question "How do you intervene in cases of peer bullying?" was asked to the participants. The findings related to this sub-problem are presented in Table 7.

Table 7. Findings related to interventions for peer bullying.

Items	%
Investigating the incident	14,59
One-to-one interviews with the parties	26,42
Informing and supporting families	23,06
Applying disciplinary penalties	4,08
Providing psychological support and guidance	20,28
Continuous monitoring and evaluation	11,24
Total	**100**

When Table 7 is examined, 14.59% of the administrators stated that they intervened by "Investigating the incident," 26.42% through "One-to-one interviews with the parties," 23.06% by "Informing and supporting families," 4.08% by "Applying disciplinary penalties," 20.58% through "Providing psychological support and guidance," and 11.24% by "Continuous monitoring and evaluation." Based on the analysis of Table 7, it is observed that administrators most commonly intervened through "One-to-one interviews with the parties" in peer bullying cases.

In the seventh sub-problem of the study, the question "What are the difficulties you face in combating peer bullying cases?" was asked to the participants. The findings related to this sub-problem are provided in Table 8.

Table 8. Findings related to the difficulties encountered in combating peer bullying cases.

Items	%
Insufficient resources,	7,16
Student and parent resistance	50,41
Inadequacy of relevant legislation	35,26
Inadequacy of school staff	6,88
Indifference of teachers	0,27
Total	**100**

When Table 8 is analyzed, 7.16% of the administrators stated that they faced "Insufficient resources," 50.41% reported "Student and parent resistance," 35.26% mentioned the "Inadequacy of relevant legislation," 6.88% referred to the "Inadequacy of school staff," and 0.27% identified the "Indifference of teachers" as challenges in combating peer bullying cases. Based on the analysis of Table 8, it is evident that administrators reported facing the greatest difficulty with "Student and parent resistance" in combating peer bullying cases.

In the eighth sub-problem of the study, the question "What strategies are followed to prevent peer bullying cases?" was posed to the participants. The findings related to this sub-problem are presented in Table 9.

Table 9. Findings related to the strategies followed to prevent peer bullying cases.

Items	%
Creating a policy to prevent bullying	5,05
Active role of school administration	17,07
Student, teacher, and family cooperation	31,88
Informative brochures and posters	8,71
Family meetings and seminars	23,51
Student information meetings	13,76
Total	**100**

When Table 9 is analyzed, it is evident that 5.05% of the administrators stated that they follow the strategy of "Creating a policy to prevent bullying," 17.07% reported the "Active role of school administration," 31.88% emphasized "Student, teacher, and family cooperation," 8.71%

mentioned "Informative brochures and posters," 23.51% referred to "Family meetings and seminars," and 13.76% stated "Student information meetings." From the analysis of Table 9, it can be concluded that the most common strategy followed by administrators to prevent peer bullying cases is the "Student, teacher, and family cooperation" strategy.

In the ninth sub-problem of the study, the question "In which areas do you need support to be more effective in combating peer bullying?" was posed to the participants. The findings related to this sub-problem are presented in Table 10.

Table 10. Findings on the areas in which administrators need support to be more effective in combating peer bullying.

Items	%
Financial resources	14,17
Educational materials	20,49
Expert support	36,59
Increased educational activities	28,73
Total	**100**

When Table 10 is examined, it can be seen that 14.17% of administrators need "Financial resources," 20.49% need "Educational materials," 26.59% need "Expert support," and 28.73% need "Increased educational activities" to be more effective in combating peer bullying in their schools. According to Table 10, administrators have stated that the greatest need for combating peer bullying is for expert support.

DISCUSSION and CONCLUSION

The findings of this study, which aims to describe the current situation by obtaining the views of school administrators on peer bullying in primary schools, were obtained using the "Primary School Administrators' Views on Peer Bullying Questionnaire" developed by the researchers. The questionnaire includes questions related to each sub-problem of the research, and the statistical values obtained are presented in detail in the findings section.

School administrators working in primary schools define peer bullying as verbal attacks, including mocking, insulting, and belittling. Şahin et al.'s (2009) study, which examines the views of preschool teachers, supports these findings. The qualitative study conducted by Dursun et al. (2024) to examine school administrators' views on peer bullying aligns with the results of this sub-problem in the study. According to the results of related studies, bullying is defined in terms of physical, psychological, and verbal harm among education stakeholders.

The study concluded that the most common cause of peer bullying is family problems. Wang et al. (2023) found a relationship between the socio-economic status of the family and bullying, as peer bullying is influenced by familial factors (Rigby, 2007; Tanrıkulu & Campbell, 2015). Eray et al. (2020) support the results of this sub-problem by highlighting the connection between family attitudes and peer bullying cases. Hoşgörür and Orhan (2017) concluded in their study that bullying cases are influenced by family experiences and parental attitudes. In a similar study, Muscarı (2002) stated that negative role models within the family trigger bullying incidents in schools. Gökbilgin and Elma (2019) found that lack of family education has an impact on bullying cases within schools. Additionally, the communication patterns between parents and children are an important factor influencing bullying (Garces-Prettel, 2020; Rinaldi, 2023; Ulfah & Gustina, 2020). In this context, the results of this research align with findings from other studies in the field.

Another result of the research is that physical bullying cases are encountered more than primary school administrators. In their study on types of violence, Çubukçu and Dönmez (2012) found that physical and verbal bullying cases were more common, supporting the findings of the study. Similarly, Özbek and Taneri (2022) concluded that physical bullying is the most common type of bullying among primary school students. Özkan and Çifci (2010) examined peer bullying cases

according to socio-economic levels and stated that physical and verbal bullying behaviours were more common. Akduman (2012) and Tanrıkulu (2020) concluded that physical bullying behaviors are most prevalent during the preschool period. Danacı and Çetin's (2016) study aligns with this result. The findings of various studies are consistent with the results of this study. The results of Craig et al. (2009), which were gathered from six countries and a large sample group, show that verbal bullying behaviors, which were ranked second according to the opinions of school administrators in this sub-problem, are more common than other types of bullying.

Another finding of the study is that students with low self-esteem are more likely to experience peer bullying. Individuals exposed to bullying tend to be anxious and shy (Jennifer & Cowie, 2012). In his study on peer bullying in all its dimensions, Gürhan (2017) defined bullying victims as children with low self-confidence. According to Özgöker (2018), the occurrence of bullying affects students emotionally. The results of Topçu's (2018) study indicate that the psychological effects experienced by students who are victims of bullying also impact later stages of their lives.

Another finding of the study is that students who bully tend to demonstrate a desire to show power. According to Olweus (1993), who examines the characteristics of children who engage in bullying behaviors, bullies are individuals who derive pleasure from putting others under pressure and continue these behaviors when they enter new peer groups. They regularly and persistently display aggressive behaviors with the goal of establishing leadership. Košir et al. (2020) concluded in their study that there is a positive relationship between popularity and bullying. When an individual joins a group, they often use aggression as a tool to assert their power. In this process, bullies typically target children who are physically weaker, have limited social skills, and are socially isolated. This choice ensures that the power is easily demonstrated and that the target is unlikely to resist (Olweus, 1994). According to the related literature, individuals who bully peers use power as a tool, which aligns with the results of this study.

The study also examined the methods school administrators use to prevent peer bullying cases. In this context, it was concluded that the school administrators who participated in the study attempted to prevent bullying by cooperating with parents. Students, teachers, administrators, and parents should work together to intervene and prevent bullying in educational institutions (Waters & Mashburn, 2017). Şahin et al. (2009) concluded in their study that teachers address bullying cases by communicating with parents. Promoting positive teacher-student relationships can help combat bullying and peer victimization (Ten Bokkel et al., 2023). Teachers also play a key role in anti-bullying programs (Krause & Smith, 2022; Veenstra et al., 2014). In this context, the teacher-student relationship and cooperation are crucial in reducing peer bullying. The research findings support this conclusion. The study concluded that school administrators face difficulties in combating peer bullying due to resistance from students and parents. Lee et al. (2022) found a negative relationship between bullying cases and family support in a relational study conducted with a large sample group. The conclusion that increased family support for addressing peer bullying leads to fewer cases aligns with the views of the school administrators participating in this study and supports the findings.

The study concluded that primary school administrators need expert support in addressing bullying cases. Özgöker (2018) found that teachers did not receive any training in combating bullying. Çubukçu and Dönmez (2012) also highlighted the importance of providing training for students, teachers, and parents, as well as expert support, in tackling bullying cases. Oldenburg et al. (2016) stated that existing methods are limited in solving these cases. Similar to the findings in the literature, developing new methods for expert support will help reduce the prevalence of peer bullying in schools. Based on the research results and limitations, the following recommendations can be made:

1. Programs should be implemented to enhance the self-confidence and academic success of students who are exposed to peer bullying.

2. Measures should be taken to reduce bullying behaviors by addressing the needs of students who engage in bullying.

3. Financial resources, educational materials, and expert support needed by schools to reduce and manage peer bullying should be provided.

4. By thoroughly examining school conditions and the student profile, anti-bullying activities can be conducted proactively, before behavioral problems arise.

5. Longitudinal and experimental studies on peer bullying should be conducted to explore the role of school administrators in addressing peer bullying in greater depth.

Limitations

The data for this study, which was conducted to examine peer bullying from the perspective of school administrators working in primary schools, were collected from school administrators in the Şahinbey district of Gaziantep province during the 2024-2025 academic year. The study is limited to the opinions of these administrators.

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İngilizce Öğretiminde Web 2.0 Araçları Kullanımının Öğrencilerin Akademik Başarıları Üzerindeki Etkisi[1]

The effect of using Web 2.0 tools in teaching English on students' academic achievement

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Atıf:
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Öz

Bu araştırma, İngilizce öğretiminde Web 2.0 araçları kullanımının öğrencilerin akademik başarıları üzerindeki etkilerini incelemeyi hedeflemektedir. Araştırma, 2023-2024 eğitim-öğretim yılında, Kilis ilindeki bir lisenin 9. sınıf öğrencileri üzerinde yürütülmüş olup, deneysel araştırma deseni benimsenmiştir. Öğrenciler, benzer başarı seviyelerine sahip iki gruba ayrılmıştır: Deney grubu, Web 2.0 araçlarıyla desteklenen bir öğretim sürecine tabi tutulurken, kontrol grubu geleneksel öğretim yöntemleriyle eğitim almıştır. Araştırmanın odak noktası, Türkiye Cumhuriyeti Milli Eğitim Bakanlığı tarafından belirlenen 9. sınıf İngilizce öğretim programındaki "Human in Nature" ünitesidir. Araştırmada, veri toplama aracı olarak araştırmacı tarafından geliştirilen bir İngilizce akademik başarı testi kullanılmıştır. Test, her iki gruba da öğretim öncesinde ön test olarak uygulanmış ve öğrencilerin başlangıçtaki başarı düzeyleri belirlenmiştir. Deney grubuna Web 2.0 araçlarıyla zenginleştirilmiş bir öğretim süreci uygulanmış, kontrol grubunda ise geleneksel öğretim yöntemleri kullanılmıştır. Eğitim süreci tamamlandıktan sonra, her iki gruba da son test uygulanarak öğretim sürecinin etkileri değerlendirilmiştir. Araştırma bulguları, Web 2.0 araçlarının deney grubunun akademik başarılarında anlamlı bir artışa neden olduğunu ortaya koymaktadır. Ayrıca, cinsiyet değişkeni açısından yapılan analizlerde, deney grubunda kız öğrencilerin lehine istatistiksel olarak anlamlı bir fark gözlemlenmiştir. Bununla birlikte, kontrol grubunda cinsiyetin akademik başarı üzerindeki etkisi anlamlı bulunmamıştır. Bu sonuçlar, Web 2.0 araçlarının İngilizce öğretiminde öğrencilerin akademik başarılarını artırmada etkili bir pedagojik araç olduğunu göstermektedir. Eğitimcilerin, teknolojik gelişmelere ayak uydurarak bu araçları öğretim süreçlerine uyumlaştırması gerektiği vurgulanmaktadır. Ayrıca, araştırma, Web 2.0 araçlarının yalnızca İngilizce öğretiminde değil, diğer branşlarda da öğrenme deneyimlerini zenginleştirmek için etkin bir şekilde kullanılabileceğine işaret etmektedir. Gelecekte, cinsiyet değişkeninin daha derinlemesine incelenmesi gerektiği ifade edilmektedir.

Anahtar Kelimeler: İngilizce dersi, akademik başarı, Web 2.0 araçları, öğretim yöntemleri

Abstract

This study aims to examine the effects of using Web 2.0 tools on students' academic achievement in English language teaching. The research was conducted during the 2023-2024 academic year with 9th grade students from a high school in Kilis, Turkey, adopting an experimental research design. The students were divided into two groups with similar achievement levels: the experimental group, which was exposed to a teaching process supported by Web 2.0 tools, and the control group, which received instruction using traditional teaching methods. The focus of the study was the "Human in Nature" unit from the 9th grade English curriculum as defined by the Ministry of National Education (MNE) of Turkey. In the study, a custom English academic achievement test developed by the researcher was used as the data collection tool. The test was administered as a pre-test to both groups before the teaching process to assess their initial achievement levels. The experimental group underwent a teaching process enhanced with Web 2.0 tools, while the control group received traditional instruction. After the teaching process, both groups were given the same test as a post-test to assess the effects of the teaching

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methods. The findings of the study indicate that the use of Web 2.0 tools led to a significant increase in the academic achievement of the experimental group. Furthermore, analyses based on gender showed a statistically significant difference in favor of female students in the experimental group, whereas no significant gender-related differences were observed in the control group. These results suggest that Web 2.0 tools are an effective pedagogical tool for enhancing students' academic achievement in English language teaching. It is emphasized that educators should adapt to technological advancements and integrate these tools into their teaching processes. Additionally, the study suggests that Web 2.0 tools can be effectively used not only in English language teaching but also to enrich learning experiences in other subject areas. Finally, the study indicates that further research is needed to explore the role of gender in academic achievement in more depth.

Keywords: English lesson, academic success, Web 2.0 tools, teaching methods

GİRİŞ

Eğitim, insanlık tarihinin en temel ve önemli unsurlarından biridir ve geçmişten günümüze kadar sürekli olarak değişim ve dönüşüm içinde olmuştur (Akın & Çeçen, 2015). Geleneksel eğitim yöntemleri uzun yıllar boyunca egemen olmuş ve sınıflarda tahta ve kitaplar aracılığıyla bilginin aktarılmasına dayanmıştır. Ancak, bu yöntemlerin bazı sınırlılıkları vardır ve özellikle öğrencilerin ilgisini çekme ve motive etme konusunda yetersiz kalabilmektedir. Günümüzde de yabancı dil eğitimine tüketilen vakit, emek ve paraya rağmen, Türkiye'de düşük yabancı dil yeterlilik seviyesi ciddi bir sorun olarak kalmaya devam etmektedir. Varlığını sürdüren geleneksel yöntem ve dil öğretim/öğrenme alışkanlıkları ile dil planlamasındaki eksiklikler, sorunun ana nedenleri olarak sıralanabilir (Işık, 2008). Dil öğretiminde karşılaşılan bu güçlükler, öğretim yöntemlerinde ve stratejilerinde yapılan yeni araştırmaların ve gelişmelerin önemini vurgulayarak, dil öğretimine yönelik yeni yaklaşımların ve modellerin geliştirilmesini gerekli kılmaktadır (Bican, 2019). Günümüzde ise teknolojinin hızla ilerlemesiyle birlikte eğitimde teknoloji kullanımı da çokça tartışılan bir konu haline gelmiştir. Oysaki, teknolojinin dil öğretiminde kullanılmasının birçok yararı bulunmaktadır (Wang & Vasques, 2012). Öncelikle, öğrencilerin öğrenme sürecinde aktif bir rol almalarını teşvik etmektedir. Ayrıca, öğretim sürecine çeşitlilik, canlılık ve kalite katarak öğrenme ortamını zenginleştirmektedir (Elmas & Geban, 2012). Teknolojinin sağladığı imkânlar sayesinde öğrenciler kendi hızlarına göre öğrenme fırsatı bulup istedikleri kadar tekrar yapma şansına sahip olmaktadırlar (Faizi, 2018; Kuznetsova & Soomro, 2019). Bu da öğrenme sürecinin daha etkili ve verimli olmasını sağlamaktadır. Teknoloji aynı zamanda planlama esnekliği ve anlık geri bildirim imkânı sunar, böylece öğrencilere öğrenme sürecinde daha fazla kontrol ve rehberlik sağlanır (Göçen vd., 2020). Bunun yanı sıra, teknoloji kullanımı zaman tasarrufu sağlayıp bilgisayar okuryazarlığını geliştirir. Özellikle okul öncesi ve sonrası bireylerde dikkat gelişimine katkıda bulunur ve ekrandaki etkileşimler bireyleri dikkatlerini dağıtmadan öğrenme sürecine odaklanmaya teşvik eder. Böylece, bilgiyi daha iyi anlama ve hatırlama konusunda destek sağlar. Teknoloji aynı zamanda bireyin çoklu görev yapma becerisini geliştirir, örneğin el, göz ve zihin koordinasyonunu artırarak bireyin çoklu işleri aynı anda başarabilme yeteneğini güçlendirmektedir (Akdağ & Karahan, 2004). Eğitim teknolojisinin ilerlemesi, öğretmenleri de öğretme yöntemlerini bu gelişmelere uygun şekilde güncellemeye teşvik etmektedir. Bu bağlamda, yabancı dil eğitmenleri de sınıflarında bu gelişmeleri hayata geçirmeye başlamışlardır. Çünkü eğitimcilerin, öğretme yöntemleri yeni neslin öğrenme alışkanlıklarıyla uyumlu olmadığı takdirde, öğrenme sürecinin başarılı olması zorlaşabilir (Karasar, 2004). Bu nedenle, öğretmenlerin eğitim teknolojilerini etkin bir şekilde kullanarak öğretim stratejilerini yenilemeleri önem taşımaktadır (Temizyürek & Ünlü, 2015). Günümüzde de, yenilikçi teknolojilerden birisi olan Web 2.0 araçları da eğitim sürecinde belirgin bir dönüşüm sağlamaktadır (Göker & İnce, 2019). Bu araçlar, öğrencilere etkileşimli öğrenme deneyimleri sunarak öğrenme sürecini daha keyifli duruma dönüştürürken bununla beraber eğitimcilere de daha etkili bir şekilde materyal sunma ve öğrenci ilerlemesini takip etme imkânı vermektedir (AlexiouRay vd., 2003). Bu nedenle, eğitimde geçmişten günümüze kadar olan dönüşümü ve

teknolojinin eğitimdeki rolünü anlamak son derece önemlidir. Geçmişteki eğitim yöntemlerinin sınırlılıklarını anlamak ve yeni teknolojilerin getirdiği fırsatları değerlendirmek, eğitimde daha etkili ve verimli bir yaklaşımın geliştirilmesine olanak tanımaktadır (Baş & Yıldırım, 2018). Ayrıca cinsiyet değişkeninin de, öğrencilerin öğrenme süreçleri ve akademik başarıları üzerindeki potansiyel farklılıklar oluşturma ihtimali vardır. Cinsiyet, bireylerin eğitim süreçlerine, öğrenme stillerine, motivasyonlarına ve teknolojiyi kullanma alışkanlıklarına etki edebilecek önemli bir değişkendir. (Orhan & Tekin, 2019). Eğitimde teknolojinin kullanımı, özellikle Web 2.0 araçları gibi yenilikçi dijital araçlar, bireylerin öğrenme deneyimlerini farklılaştırabilir. Bununla birlikte, cinsiyetin bu dijital araçlara karşı nasıl bir tutum geliştirdiği ve bu araçların öğrencilerin akademik başarıları üzerindeki etkisinin nasıl şekillendiği, eğitimdeki cinsiyet eşitliği ve başarı farklarını anlamak açısından büyük bir önem taşımaktadır. Dolayısıyla bu araştırmada, İngilizce öğretimine Web 2.0 araçlarının dahil edilmesinin öğrencilerin akademik başarıları üzerindeki etkisini anlamak ve değerlendirmek, geçmişten günümüze kadar olan eğitim ve teknoloji kullanımının önemini araştırmak, Web 2.0 araçlarının İngilizce öğretimi üzerindeki etkilerini incelerken cinsiyetin bu süreçteki rolünü ele almak ve aşağıdaki sorulara cevap bulmak amaçlanmıştır:

1. İngilizce dersinde deney ve kontrol grubu öğrencilerinin akademik başarı testi ön test puanları arasında anlamlı bir farklılık var mıdır?

2. İngilizce dersinde deney grubu öğrencilerinin akademik başarı testi ön test - son test puanları arasında anlamlı bir farklılık var mıdır?

3. İngilizce dersinde kontrol grubu öğrencilerinin akademik başarı testi ön test - son test puanları arasında anlamlı bir farklılık var mıdır?

4. İngilizce dersinde deney ve kontrol grubu öğrencilerinin akademik başarı testi son test puanları arasında anlamlı bir farklılık var mıdır?

5. İngilizce dersinde deney grubu öğrencilerinin cinsiyet değişkenine göre başarı testi son test sonuçlarında anlamlı bir farklılık var mıdır?

6. İngilizce dersinde kontrol grubu öğrencilerinin cinsiyet değişkenine göre başarı testi son test sonuçlarında anlamlı bir farklılık var mıdır?

YÖNTEM

Araştırmanın Deseni

9. Sınıf İngilizce dersinde, Web 2.0 araçlarının kullanımının öğrencilerin akademik başarısına etkisini incelemek amaç edinildiği için, nicel araştırma yöntemlerinden olan deneysel model kullanılmıştır. Deneysel araştırmalar, araştırmacının seçtiği değişkenlerin bağımlı değişken üzerindeki etkisini ölçmeye dayalı hesaplamalar olarak tanımlanabilir. Bu tür araştırmalar, değişkenler arasındaki nedensel ilişkileri test etmek için özel olarak tasarlanmış deneyler içerir. Araştırmacı, deneysel sürecin nasıl işleyeceğine, hangi değişkenlerin kontrol edileceğine, deneyin nasıl yapılacağına ve hangi gruplara uygulanacağına karar verir. Bu kararlar, deneyin sonuçlarını etkileyebileceğinden, deneysel araştırmalarda dikkatli planlama ve tasarım gereklidir (Büyüköztürk vd., 2024). Bu çalışmada, deneysel desenlerden biri olan yarı deneysel desen tercih edilmiştir. Yarı deneysel desen, deney ve kontrol gruplarının belirlenmesinde belirli ön ölçümler ve ölçütler kullanılarak uygulanır. Bu araştırmada, deney ve kontrol grupları olarak "Human in Nature" ünitesindeki kazanımları daha önce edinmemiş 9. sınıf öğrencilerinden oluşan iki farklı şube seçilmiştir.

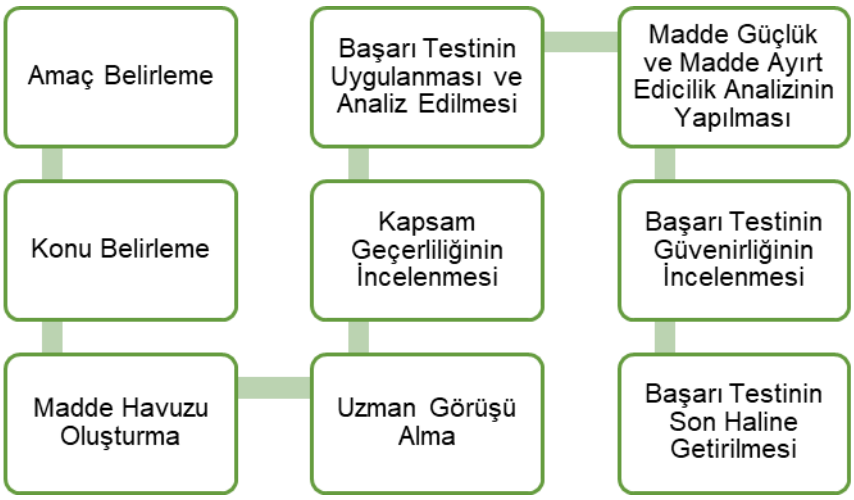
Araştırma Grubu

Araştırma, 2023-2024 eğitim öğretim yılı güz döneminde, Kilis ili merkezinde bulunan bir anadolu lisesinde gerçekleştirilmiştir. Araştırmanın başlaması için Milli Eğitim Bakanlığı (MEB) ile gerekli yazışmalar yapılmış ve izin belgesi alınarak gerekli işlemler tamamlanmıştır. Deneysel çalışmada, deney ve kontrol grupları birbirine denk olan iki farklı şubeden seçilen

öğrenciler arasından oluşturulmuştur. Gruplar, öğrencilerin İngilizce dersi not ortalamalarına göre dikkatlice analiz edilmiş ve en benzer başarı seviyelerine sahip öğrenciler seçilmiştir. Bu şekilde, bir sınıf deney grubu, diğer bir sınıf ise kontrol grubu olarak belirlenmiştir. Toplamda 54 öğrencinin yer aldığı çalışmada, her iki sınıftan da 27 öğrenci araştırmaya dahil edilmiştir. Bu düzenleme, araştırmanın daha güvenilir ve geçerli sonuçlar üretmesine olanak tanımıştır.

Veri Toplama Aracı

Araştırma kapsamında, öğrencilerin akademik başarılarını ölçmek için araştırmacı tarafından geliştirilen başarı testi kullanılmıştır. Bu test, öğrencilerin "Human in Nature" ünitesindeki kazanımları ne kadar başarılı bir şekilde edindiklerini değerlendirmek amacıyla tasarlanmıştır. Başarı testi, öğrencilerin dil bilgisi, kelime bilgisi ve anlama yeteneklerini ölçmeye yönelik çoktan seçmeli sorulardan oluşmaktadır. Bu test, deney ve kontrol gruplarının başarı düzeylerini karşılaştırmak ve araştırmanın amacına ulaşmak için önemli bir veri toplama aracı olarak kullanılmıştır. Başarı testi oluşturulurken izlenilen yol Görsel 1'de verilmiştir.



Görsel 1. Başarı Testi Hazırlama Süreci

İlk olarak, başarı testinin konusunun belirlenmesi aşamasında, Milli Eğitim Bakanlığı tarafından belirlenen 9. sınıf İngilizce öğretim programı ve ders kitabı temel alınmıştır. Özellikle "Human in Nature" ünitesinin kazanımları ve konu başlıkları dikkate alınarak testin içeriği şekillendirilmiştir. Bu süreçte, üniteye dair öğrencilerin ulaşması gereken öğrenme hedeflerine odaklanılmış ve testin kapsamı bu hedeflere uygun olarak oluşturulmuştur.

Madde havuzunun oluşturulması aşamasında, 2023-2024 eğitim öğretim yılına ait 9. sınıf İngilizce ders kitabı kaynak olarak kullanılmıştır. Başlangıçta toplamda 47 çoktan seçmeli soru hazırlanmış ve bu soruların her biri, ünitenin belirli kazanımlarını ölçmeye yönelik olarak tasarlanmıştır. Bu aşamada, her kazanımdan eşit sayıda soru eklemeye özen gösterilmiştir.

Daha sonra, testin geçerliliğini ve güvenilirliğini artırmak amacıyla uzman görüşleri alınmıştır. Testin ilk hali, 5 eğitim bilimleri uzmanı, 1 Türk dili uzmanı ve 2 İngilizce öğretmeni tarafından detaylı bir şekilde incelenmiştir. Uzmanlardan alınan geri bildirimler doğrultusunda bazı soruların açıklayıcı notlarla desteklenmesi gerektiği, bazı soruların zorluk düzeylerinin değiştirilmesi gerektiği ve bazı soruların tamamen değiştirilmesi gerektiği belirtilmiştir. Bu geri bildirimler doğrultusunda, testin içeriği, anlaşılabilirliği ve zorluk düzeyinde önemli düzenlemeler yapılmıştır. Uzmanlardan alınan görüşler, testin geçerliliğini artırarak, daha güvenilir ve etkili bir ölçme aracının ortaya çıkmasını sağlamıştır.

Uzman görüşlerinin ardından testin kapsam geçerliliği sağlanabilmesi için bir belirtke tablosu hazırlanmıştır. Bu tablo, her sorunun hangi kazanımı ölçtüğünü ve testte yer alan kazanımların

eşit bir şekilde dağılıp dağılmadığını değerlendirmek amacıyla kullanılmıştır. Belirtke tablosu yardımıyla testin genel dengesini sağlamak amaçlanmış ve sorular arasındaki dağılımın uygun olup olmadığı gözden geçirilmiştir. Bu aşamada, bazı konulardan daha fazla soru eklenmesi gerektiği ve bazı konulardan ise daha az soru eklenmesi gerektiği fark edilmiştir. Ancak, bu durumun, konu başlıklarının uzunluğu ve önemi göz önünde bulundurularak bilinçli bir tercih olduğu ifade edilebilir.

Başarı testinin uygulama süreci ve madde analizlerinin ayrıntılı bir şekilde gerçekleştirilmesi, testin geçerliliği ve güvenilirliğini sağlamaya yönelik önemli bir adım olmuştur. Test, ünitenin kazanımlarını önceden öğrenmiş olan 10. sınıf öğrencilerinden oluşan 144 kişilik bir öğrenci grubuna uygulanmıştır.

Test uygulamasının ardından elde edilen veriler, SPSS 27.0 yazılımı kullanılarak analiz edilmiştir. Analiz süreci, testin her bir sorusunun zorluk derecesini (madde güçlük indeksi) ve ayırt ediciliğini (madde ayırt edicilik indeksi, Rjx) belirlemeye yönelik olmuştur. Başlangıçta test, 47 sorudan oluşan bir madde havuzuyla hazırlanmış ancak yapılan madde analizleri sonucunda bu havuzdan amacına hizmet etmeyen 11 soru çıkarılmıştır. Bu 11 sorunun yerine, daha uygun özelliklere sahip 36 soru seçilerek nihai başarı testi oluşturulmuştur. Seçilen sorular, orta zorluk derecesine sahip ve orta ile yüksek ayırt ediciliğe sahip maddelerden oluşmuş olup öğrencilerin başarılarını doğru bir şekilde ölçmeyi amaçlamaktadır. Ayırt edicilik açısından, genellikle 0.40 ve üzerinde bir indeks değeri taşıyan sorular tercih edilmiş, az sayıda 0.30 ile 0.40 arasında değeri olan maddeler de teste dahil edilmiştir.

Testin güvenilirliğini değerlendirmek amacıyla Kuder-Richardson-20 (KR-20) katsayısı hesaplanmıştır. Bu katsayı, testin iç tutarlılığını ölçen bir güvenilirlik indeksidir ve 0.70 ile 0.90 arasında kabul edilen bir değer aralığına sahiptir. Hesaplama sonucunda elde edilen 0.86'lık KR-20 değeri, testin güvenilirliğini yüksek olarak değerlendirmektedir. Bu yüksek değer, testin ölçmeyi amaçladığı İngilizce dil becerilerini güvenilir bir şekilde ölçtüğünü ve öğrencilerin sonuçlarının tutarlı olduğunu göstermektedir.

Sonuç olarak, uzman görüşleriyle desteklenen ve madde analizi yapılan başarı testi, öğrencilerin "Human in Nature" ünitesine yönelik bilgi, beceri ve anlayışlarını güvenilir bir şekilde ölçebilecek bir araç haline gelmiştir. Bu test, hem geçerlilik hem de güvenilirlik açısından titizlikle geliştirilmiş ve öğrencilerin bu üniteye ilişkin başarı düzeylerini etkili bir şekilde değerlendirmeye olanak sağlamıştır.

Veri Toplama Süreci

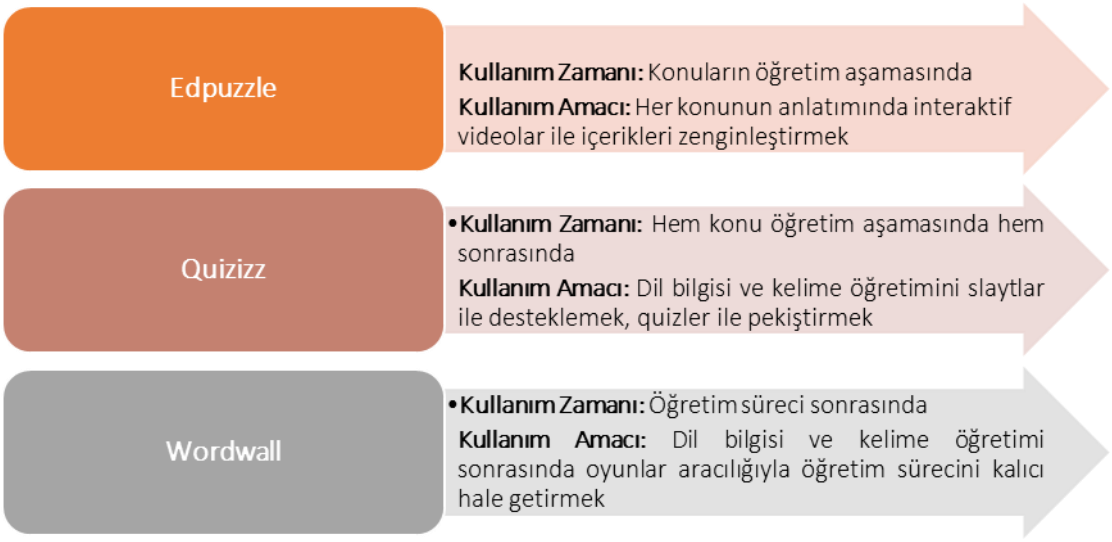
Araştırmanın etik kurul izni, 7 Şubat 2024 tarih ve E-76062934-044-45024 sayı no ile Kilis 7 Aralık Üniversitesi Rektörlüğü Etik Kurulu'ndan alınmıştır. Ayrıca her katılımcı için bilgilendirilmiş gönüllü olur/onam formu doldurulmuştur. Kilis ilindeki bir anadolu lisesinde 9. sınıflardan genel başarı durumları önceden birbirine yakın olan iki sınıf belirlenmiş ve bir sınıf deney grubu, diğer bir sınıf ise kontrol grubu olarak atanmıştır. Her iki gruptan da 27 öğrenci seçilerek dengeler eşit tutulmaya çalışılmıştır. Gruplar dışında kalan öğrenciler de başarı testine dahil edilmiş fakat değerlendirmeye alınmamışlardır. Ancak, uygulamanın güvenirliği ve geçerliliği açısından bu bilgi gizli tutulmuştur. Sınıfların doğal atmosferini ve derslerin normal işleyişini mümkün olduğunca etkilememek için araştırmacı, sınıfın İngilizce öğretmeniyle birlikte çalışmaları yürütmüş ve sınıfta yeterli süre boyunca gözlem yapmıştır. Bu yaklaşım, araştırmanın bağımsızlığını korurken, öğrencilerin normal günlük rutinlerine müdahale etmemiştir. Yapılan analizler sonucunda nihai haline ulaşılan başarı testi, Aralık ayının başında "Human in Nature" ünitesi henüz başlamadan deney ve kontrol gruplarına ön test olarak uygulanmıştır. Başarı testinin uygulanma süresi her iki sınıf için de her soru için 1,5 dakika olacak şekilde 54 dakika olarak uygulanmıştır. Sonrasında deney grubunun dersleri, Milli Eğitim Bakanlığı'nın (MEB) sunduğu İngilizce öğretim programları kazanımları çerçevesinde oluşturulan Web 2.0 araçlarıyla işlenmiştir. Araştırma sürecinde, Edpuzzle, Quizizz ve Wordwall gibi çeşitli Web 2.0 araçları öğrencilerin İngilizce öğrenme deneyimlerini zenginleştirmek için kullanılmıştır.

Deney grubuyla yapılan uygulamalar, 3 hafta süresince haftada 4 saat olmak üzere toplamda 12 saatlik bir süre zarfında, ilgili öğrencilerin kendi İngilizce öğretmenleri tarafından gerçekleştirilmiştir. Bu süreçte, araştırmacı tarafından hazırlanan Web 2.0 araçları derslerde aktif bir şekilde kullanılmıştır. Uygulamaya başlanmadan önce, araştırmaya dahil olan İngilizce öğretmenine tüm sürecin detayları aktarılmış ve 3 haftalık çalışma süreci hakkında bilgi verilmiştir. Ayrıca, öğretmenin Web 2.0 araçlarını etkin bir şekilde kullanabilmesi için gerekli eğitimler verilmiş ve bu araçların işlevleri hakkında kapsamlı bilgiler sağlanmıştır. Eğitimde, hangi araçların kullanılacağı ve bu araçların nasıl etkin bir şekilde sınıf ortamına entegre edileceği gibi konulara dikkat edilmiştir. Eğitim süreci sırasında, araştırmacı sınıfın doğal akışını bozmamak adına gözlemlerini sınırlı bir şekilde yapmıştır.

Derslerin işlenişi, deney grubundaki öğrenciler için akıllı tahtalar aracılığıyla gerçekleştirilmiştir. Bu şekilde, öğrencilerin teknolojiyle etkileşimde bulunarak derse daha aktif bir katılım sağlamaları hedeflenmiştir. Araştırmacı, ders materyallerini videolar haline getirerek öğrencilere sunmuş ve bu videoları Edpuzzle platformu üzerinden paylaşmıştır. Öğrenciler, bu videoları izlerken dersle ilgili interaktif quizler ve etkileşimli içeriklerle karşılaşarak öğrenme süreçlerine katılım göstermişlerdir.

Ayrıca, araştırmacı, öğrencilerin konuları pekiştirmeleri ve öğrenmelerini değerlendirmeleri amacıyla Quizizz uygulamasını kullanmıştır. Öğrenciler, kendi hızlarında quizleri tamamlayarak öğrenme süreçlerini özelleştirme fırsatı bulmuşlardır. Quizizz'in sunduğu rekabetçi ortam ise öğrenciler arasındaki motivasyonu artırmış ve dersleri daha eğlenceli hale getirmiştir. Bunun yanı sıra, Wordwall uygulaması da kullanılarak öğrencilerin kelime bilgilerini geliştirmek, dilbilgisi kurallarını pekiştirmek ve iletişim becerilerini artırmak hedeflenmiştir. Oyun temelli etkinliklerle öğrencilerin öğrenmeye olan ilgisi artırılmış ve katılım sağlanmıştır.

Kullanılan Web 2.0 araçları, öğrencilerin dikkatini çekmek, öğrenme sürecini daha eğlenceli hale getirmek ve ders materyallerini daha etkili bir biçimde kavramalarını sağlamak amacıyla tasarlanmıştır. Bu araçlar, öğrencilerin İngilizce dil becerilerini geliştirerek "Human in Nature" ünitesindeki öğrenme hedeflerine daha derinlemesine ulaşmalarını sağlamıştır. Araştırmada kullanılan tüm Web 2.0 araçlarına dair detaylar aşağıda yer alan Görsel 2'de yer almaktadır.



Görsel 2. Öğretim Sürecinde Kullanılan Web 2.0 Araçları

Deney grubu ile gerçekleştirilen derslerin ardından, Web 2.0 araçlarının öğrencilerin akademik başarıları üzerindeki etkilerini değerlendirebilmek için başarı testleri uygulanmıştır. Bu testler, öğrencilerin dilbilgisi, kelime bilgisi ve ilgili üniteye dair diğer becerilerini ölçmeyi

hedeflemiştir. Test sonuçları, Web 2.0 araçlarının öğrencilerin akademik başarılarını ne ölçüde artırıp artırmadığı konusunda analiz yapılmasını sağlamıştır.

Kontrol grubunda ise dil öğretimi, yine Milli Eğitim Bakanlığı'nın oluşturduğu İngilizce öğretim programı kazanımları kapsamında geleneksel yöntemlerle işlenmiştir. Bu grup, diğer gruba kıyasla, teknoloji kullanımının dışında klasik öğretim yöntemlerine maruz kalmıştır. Bu yaklaşım, deney grubuyla karşılaştırıldığında, geleneksel öğretim yöntemlerinin etkilerini belirlemek adına önemli bir referans noktası oluşturmuştur. Deney ve kontrol grupları "Human in Nature" ünitesindeki öğrenim sürecini tamamladıklarında, araştırmanın tutarlılığını sağlamak ve sonuçları karşılaştırılabilir kılmak amacıyla aynı başarı testi son test olarak her iki sınıf için de her soru için 1,5 dakika olacak şekilde 54 dakika olarak tekrardan uygulanmıştır. Bu, her iki grup arasında eşit koşulların sağlanması ve verilerin doğru bir şekilde karşılaştırılabilmesi için önemli bir adımdır. Başarı testinin uygulanması sürecinde dikkatlice standart prosedürler takip edilmiş ve her öğrenciye eşit fırsatlar sunulmuştur. Bu sayede, elde edilen verilerin güvenilirliği artırılmış ve araştırmanın sonuçları daha sağlam bir temele dayandırılmıştır.

Verilerin Analiz Süreci

Araştırmada yer alan 9. sınıf öğrencilerinden oluşan deney ve kontrol gruplarına uygulanan başarı testlerinin analizi, SPSS 27.0 programı kullanılarak kapsamlı bir şekilde gerçekleştirilmiştir. Veri analizinde, gruplardaki örneklem sayısının 30'dan az olduğu durumlarda, parametrik testlerin gerektirdiği varsayımların sağlanması zorlaşabilir. Bu gibi durumlarda, verilerin dağılımı hakkında kesin varsayımlar yerine daha esnek olan ve normal dağılımı gerektirmeyen yöntemler tercih edilir. Non-parametrik testler, küçük örneklem büyüklükleri veya verilerin normal dağılım göstermediği durumlarda güvenilir sonuçlar sunar. Bu nedenle, sınırlı örneklem büyüklüğüne sahip araştırmalarda non-parametrik testler, doğru ve güvenilir analizler yapmak için daha uygun bir seçenek olarak kabul edilir (Sümbüloğlu ve Sümbüloğlu, 2007). Bu araştırmada da veriler analiz edilirken gruplardaki örneklem sayılarının 30'dan az olması nedeniyle, nonparametrik testlerden Mann-Whitney U ve Wilcoxon İşaretli Sıra Testi kullanılmıştır. Bu testler, parametrik olmayan verilerde gruplar arasındaki farkın değerlendirilmesinde etkilidir. Bu seçimler, verilerin dağılım özellikleri göz önünde bulundurularak yapılmış ve analizlerin doğru bir şekilde yapılmasına yardımcı olmuştur.

BULGULAR

Deney ve Kontrol Grubu Öğrencilerinin Başarı Testi Ön Test Sonuçlarına Ait Bulgular

Deney ve kontrol grubunda yer alan öğrencilerin ön test başarıları arasındaki olası farklılıkları belirlemek için non-parametrik bir yöntem olan Mann-Whitney U Testi kullanılmıştır (Tablo 1).

Tablo 1. Deney Ve Kontrol Grubu Öğrencilerinin Başarı Testi Ön Test Sonuçlarına Ait Mann-Whitney U Testi

Deney-kontrol grubu ön test	N	Sıra ortalaması	z	U	*p
Deney grubu ön test	27	30,50	-	283,500	.159
Kontrol grubu ön test	27	24,50	1,408		
	Toplam 54				

Bu testin sonucunda, elde edilen "p" değerinin .159 olduğu tespit edilmiştir. Bu "p" değeri, genel olarak kabul edilen anlamlılık düzeyi olan .05'ten daha büyüktür. Dolayısıyla, deney ve kontrol grubu öğrencilerinin ön test sonuçları arasında istatistiksel olarak anlamlı bir değişim bulunmadığı ortaya çıkmıştır. Bu bulgu, deney ve kontrol grubundaki öğrencilerin akademik başarı seviyelerinin benzer düzeyde olduğunu göstermektedir.

Deney Grubu Öğrencilerinin Başarı Testi Ön Test - Sontest Sonuçlarına Ait Bulgular

Deney grubunda yer alan öğrencilerin ön test ile son test başarıları arasındaki olası farklılıkları belirlemek için non-parametrik bir yöntem olan Wilcoxon İşaretli Sıra Testi kullanılmıştır (Tablo 2).

Tablo 2. Deney Grubu Öğrencilerinin Başarı Testi Ön Test - Sontest Sonuçlarına Ait Wilcoxon İşaretli Sıra Testi

Deney grubu	N	Sıra ortalaması	z	U	*p	**Etki büyüklüğü (r)
Ön Test	27	21,81	-2,668	211,00	.008	0,51
Son Test	27	33,19				
	Toplam 54					

**p<0.05 Anlamlı Farklılık Var*
***(r)=0,51 Büyük Oranda Etki*

Bu testin sonucunda deney grubu öğrencilerinin ön test ve son test sonuçları arasında istatistiksel olarak anlamlı bir değişim bulunduğu ortaya çıkmıştır. Bu bulgu, deney grubundaki öğrencilerin performanslarında bir değişim yaşandığını göstermektedir.
Değişimin ne boyutta olduğunu ölçmek için ise Wilcoxon İşaretli Sıra Testi sonucunun etki büyüklüğünü incelemek için aşağıdaki formül kullanılmıştır.

$$r = \frac{2,668}{\sqrt{27}} = 0,51$$

Formül sonuçlarına göre, Wilcoxon İşaretli Sıra Testi'nin etki büyüklüğü (r) 0,51 olarak hesaplanmıştır. Bu sonuca göre, deney grubu öğrencilerinin başarı testi ön test - son test puanları arasında büyük oranda bir etkinin olduğu sonucuna ulaşılmıştır. Bu, deney grubundaki öğrencilerin performansındaki değişimin, araştırma koşullarının etkisiyle, istatistiksel olarak anlamlı olduğunu ve aradaki farkın dikkate değer olduğunu gösterir. Bu bulgu, deneyin öğrencilerin akademik başarıları üzerinde önemli bir etkisi olduğunu kanıtlamaktadır.

Kontrol Grubu Öğrencilerinin Başarı Testi Ön Test - Sontest Sonuçlarına Ait Bulgular

Kontrol grubunun başarı testi ön test – son test puanları arasındaki potansiyel farklılığı değerlendirmek için non-parametrik bir test olan Wilcoxon İşaretli Sıra Testi kullanılmıştır (Tablo 3).

Tablo 3. Kontrol Grubu Öğrencilerinin Başarı Testi Ön Test – Son Test Sonuçlarına Ait Wilcoxon İşaretli Sıra Testi

Kontrol grubu	N	Sıra ortalaması	z	U	*p	**Etki büyüklüğü (r)
Ön Test	27	23,1	2,327	368,0	.020	0,44
Son Test	27	24,0				
	Toplam 54					

**p<0.05 Anlamlı Farklılık Var*
***(r)=0,44 Orta Düzeyde Etki*

Wilcoxon İşaretli Sıra Testi sonucunda kontrol grubundaki öğrencilerin zamanla daha iyi performans gösterdikleri ve geleneksel öğretim yönteminin de öğrenci başarısını artırmada etkili olduğunu düşündürmektedir. Kontrol grubu öğrencilerinin başarı testi ön test ve son test performansları arasındaki değişimin etki büyüklüğünü ortaya koymak için aşağıda yer alan formül uygulanmıştır.

$$r = \frac{2,327}{\sqrt{27}} = 0,44$$

Yukarıdaki formül uygulandığında, kontrol grubu öğrencilerinin başarı testi ön test ve son test performansları arasındaki değişimin etki büyüklüğü 0,44 olarak hesaplanmıştır. Bu değer, orta

düzeyde etki olduğunu göstermektedir. Bu durum, kontrol grubundaki geleneksel öğretim yönteminin de öğrencilerin başarıları üzerinde, her ne kadar güçlü olmasa da, bir etkisinin olduğunu sonucunu göstermektedir.

Deney Ve Kontrol Grubu Öğrencilerinin Başarı Testi Son Test Sonuçlarına Ait Bulgular

Deney ve kontrol grubu öğrencilerinin son test başarıları arasındaki potansiyel farklılıkları değerlendirmek için non-parametrik yöntemlerden biri olan Mann Whitney U Testi kullanılmıştır (Tablo 4).

Tablo 4. Deney Ve Kontrol Grubu Öğrencilerinin Başarı Testi Sontest Sonuçlarına Ait Mann-Whitney U Testi

Deney-kontrol grubu son test	N	Sıra ortalaması	z	U	*p	**Etki büyüklüğü (r)
Deney grubu son test	27	33,83	2,971	193,50	.003	0,57
Kontrol grubu son test	27	21,19				
	Toplam 54					

**p<0.05 Anlamlı Farklılık Var*
***(r)=0,57 Büyük Oranda Etki*

Bu testin sonucunda, deney ve kontrol gruplarının sonuçlarına göre olarak anlam ifade eden bir değişiklik bulunduğu sonucuna varılmıştır. Bu bulgu, deney grubuyla kontrol grubu arasında son test sonuçlarının farklı olduğunu ve deney grubunun daha yüksek bir performans sergilediğini göstermektedir. Deney ve kontrol gruplarının son test sonuçları arasındaki farkın etki büyüklüğünü incelemek için aşağıdaki formül kullanılmıştır.

$$r = \frac{2,971}{\sqrt{27}} = 0,57$$

Mann-Whitney U Testi'nin etki büyüklüğü (*r*) 0,57 olarak hesaplanmıştır. Bu sonuç, deney ve kontrol gruplarının son test sonuçları arasındaki farkın etki büyüklüğünün büyük oranda olduğunu göstermektedir. Yani, öğrenci başarılarındaki fark, dikkate değerdir.

Deney Grubu Öğrencilerinin Cinsiyet Değişkenine Göre Başarı Testi Son Test Sonuçlarına Ait Bulgular

Deney grubu öğrencilerinin cinsiyet değişkenine göre başarı testi son test puanlarına ait sonuçlar Mann-Whitney U Testi ile analiz edilmiştir (Tablo 5).

Tablo 5. Deney Grubu Öğrencilerinin Cinsiyet Değişkenine Göre Başarı Testi Sontest Sonuçlarına İlişkin Mann-Whitney U Testi

Deney grubu son test	N	Sıra ortalaması	z	U	*p	**Etki büyüklüğü (r)
Kız	16	17,38	-2,700	34,00	.007	0,51
Erkek	11	9,09				
	Toplam 27					

**p<0.05 Anlamlı Farklılık Var*
***(r)=0,51 Büyük Oranda Etki*

Bu bulgulara göre, deney grubunda yer alan kız öğrenciler ve erkek öğrenciler arasında başarı testi sonuçları açısından anlam ifade eden bir değişiklik olduğu görülmektedir. Kız öğrencilerin başarı puanlarının erkek öğrencilerin puanlarından önemli ölçüde daha yüksek olduğu söylenebilir. Bu durum, cinsiyetin öğrencilerin başarıları üzerinde etkili bir faktör olabileceği gerçeğini ortaya koymaktadır.

Deney grubundaki kız öğrencilerin ve erkek öğrencilerin başarı testi sonuçları ile son test performansları arasındaki değişimin etki büyüklüğüne ulaşmak için aşağıda yer alan formül kullanılmıştır.

$$r = \frac{2,700}{\sqrt{27}} = 0,51$$

Formül sonucuna göre, etki büyüklüğü 0,51 olarak hesaplanmıştır. Bu değer, deney grubundaki kız ve erkek öğrenciler arasındaki başarı testi sonuçlarındaki değişimin büyük oranda bir etkiye sahip olduğunu göstermektedir. Yani, deney grubunda yer alan öğrencilerin arasında cinsiyetin başarı üzerinde önemli bir rol oynadığını ortaya koymaktadır.

Kontrol Grubu Öğrencilerinin Cinsiyet Değişkenine Göre Başarı Testi Son Test Sonuçlarına Ait Bulgular

Kontrol grubundaki öğrencilerin cinsiyet değişkeninin son test başarıları üzerindeki potansiyel etkisini değerlendirmek için Mann-Whitney U Testi kullanılmıştır (Tablo 6).

Tablo 6. Kontrol Grubu Öğrencilerinin Cinsiyet Değişkenine Göre Başarı Testi Sontest Sonuçlarına İlişkin Mann-Whitney U Testi

Kontrol grubu son test	N	Sıra ortalaması	z	U	*p	**Etki büyüklüğü (r)
Kız	17	13,68	0,278	90,50	.781	0,05
Erkek	10	14,55				
	Toplam 27					

**p>0.05 Anlamlı Farklılık Yok*
***(r)=,05 Küçük Oranda Etki*

Mann-Whitney U Testi sonuçlarına göre p değeri .781 olarak hesaplanmıştır. Bu bulgulara göre, kontrol grubunda yer alan kız öğrenciler ile erkek öğrenciler arasında başarı testi sonuçları açısından bir değişiklik bulunmamaktadır. Her iki cinsiyet grubunun başarıları incelendiğinde önemli bir fark gözlemlenmemiştir. Bu durum, kontrol grubundaki cinsiyetlerin öğrencilerin başarıları üzerinde benzer etkilere sahip olduğunu düşündürmektedir.

Kontrol grubundaki kız ve erkek öğrenciler arasındaki başarı testi sonuçlarındaki değişimin etki büyüklüğünü belirlemek için aşağıdaki formül kullanılmıştır.

$$r = \frac{0,278}{\sqrt{27}} = 0,05$$

Formülden elde edilen sonuca göre, etki büyüklüğü 0,05 olarak hesaplanmıştır. Bu değer, kontrol grubundaki kız ve erkek öğrenciler arasındaki başarı testi sonuçlarındaki değişimin etki düzeyinin küçük olduğunu göstermektedir. Yani, cinsiyetin başarı üzerindeki etkisinin kontrol grubunda daha az belirgin olduğu anlaşılmaktadır.

Bu araştırmanın bulguları, Web 2.0 araçlarının İngilizce öğretiminde kullanıldığında öğrencilerin akademik başarılarını artırmada kullanışlı olduğu sonucunu ortaya koymaktadır. Deney grubunda yer alan öğrencilerin başarı testlerinde, Web 2.0 araçları ile desteklenen dersler sonucunda, anlamlı bir fark gözlemlenmiştir. Wilcoxon İşaretli Sıra Testi sonuçları, deney grubuna dahil olan öğrencilerinin ön testleri ile son testleri arasında ciddi bir farklılık olduğunu ve bu farkın büyük bir etki büyüklüğüne sahip olduğunu ortaya koymuştur. Öte yandan, kontrol grubunda geleneksel öğretim yöntemlerinin de öğrencilerin başarı düzeylerini artırdığı, ancak bu etkinin Web 2.0 araçları kadar belirgin olmadığı belirlenmiştir. Kontrol grubunda Wilcoxon İşaretli Sıra Testi sonuçlarına göre, öğrencilerin başarı testlerinde anlamlı bir artış gözlemlenmiş, ancak bu artışın etki düzeyi deney grubuna kıyasla daha düşüktür. Cinsiyet değişkeni incelendiğinde, deney grubundaki kız öğrencilerin erkek öğrencilere göre daha yüksek başarı puanlarına sahip olduğu, kontrol grubunda ise cinsiyetler arasında anlamlı bir fark bulunmadığı tespit edilmiştir.

SONUÇ, TARTIŞMA ve ÖNERİLER

Deneylerde grupların homojen olması, elde edilen sonuçların geçerliliği ve güvenilirliği açısından son derece önemlidir. Yapılan analizler neticesinde her iki grubun da ön test sonuçları arasında anlamlı bir farklılık tespit edilmemiştir. Bu durumda, deney ve kontrol grubunda yer alan öğrencilerin İngilizce dersi akademik başarı seviyeleri birbirine denk durumdadır. Bu durum, yapılan araştırmanın geçerliliğini ve güvenirliğini artırmıştır.

Ortaya çıkan istatistiklere göre, deney grubunda yer alan öğrencilerin başarı testi ön test - son test puanları arasında anlamlı bir farklılık tespit edilmiş ve değişim etkisinin önemli ölçüde olduğu belirlenmiştir. Bu bulgular, İngilizce öğretiminde Web 2.0 araçlarının kullanımının deney grubundaki öğrencilerin akademik başarılarını ciddi şekilde artırdığını göstermektedir.

Elde edilen sonuçlar, kontrol grubundaki öğrencilerin başarı testi ön test - son test puanları arasında anlamlı bir fark olduğunu ve bu değişimin orta düzeyde olduğunu göstermiştir. Kontrol grubundaki öğrencilerin performansındaki değişim de anlamlıdır. Bu durum, kontrol grubundaki geleneksel öğretim yönteminin de öğrencilerin başarıları üzerinde olumlu bir etkiye sahip olduğunu ortaya koymaktadır.

Elde edilen sonuçlara göre, deney ve kontrol grupları arasında istatistiksel olarak anlamlı bir farklılık olduğu belirlenmiştir. Ayrıca, testin etki büyüklüğü incelendiğinde, deney ve kontrol gruplarının son test sonuçları arasındaki farkın büyük oranda olduğu gözlemlenmiştir. Bu sonuçlar, deney grubunda Web 2.0 araçları kullanılarak işlenen derslerin, kontrol grubunda geleneksel yöntemlerle işlenen derslere kıyasla öğrencilerin akademik başarıları üzerinde daha büyük bir etkiye sahip olduğunu göstermektedir.

Yapılan analizler sonucunda, deney grubunda yer alan kız öğrenciler ile erkek öğrenciler arasında başarı testi sonuçları açısından anlamlı bir farklılık olduğu belirlenmiştir. Testin etki değerleri değerlendirildiğinde, kız öğrencilerin başarı puanlarının erkek öğrencilerin puanlarından önemli ölçüde daha yüksek olduğu görülmektedir. Deney grubu kız öğrencilerinin erkek öğrencilere oranla daha başarılı olduğu sonucuna ulaşılmıştır. Bu sonuçlar, cinsiyetin öğrencilerin başarıları üzerinde etkili bir faktör olabileceği yönünde önemli bir göstergedir.

Verilerin analizi neticesinde, kontrol grubunda yer alan kız öğrenciler ile erkek öğrenciler arasında başarı testi sonuçları açısından anlamlı bir farklılık bulunmamaktadır. İki cinsiyet grubunun başarı puanları arasında istatistiksel olarak anlamlı bir fark gözlemlenmemiştir. Bu sonuçlar, kontrol grubundaki cinsiyetlerin öğrencilerin başarıları üzerinde benzer etkilere sahip olduğunu düşündürmektedir. Kontrol grubunda yer alan kız ve erkek öğrenciler arasındaki başarı testi sonuçlarındaki değişimin etki düzeyinin küçük olduğu belirlenmiştir. Yani, cinsiyetin başarı üzerindeki etkisinin kontrol grubunda daha az belirgin olduğu anlaşılmaktadır.

Araştırma sonuçları, deney grubundaki öğrencilerin Web 2.0 araçlarıyla işlenen derslerde, kontrol grubundaki geleneksel öğretim yöntemleri ile öğrenim sürecini geçirmiş öğrencilere kıyasla daha yüksek akademik başarı elde ettiklerini göstermektedir. Bu da Web 2.0 araçları kullanılarak gerçekleştirilen öğretimin, geleneksel yöntemlerle gerçekleştirilen bir öğretimden daha fazla bir etkisinin olduğu sonucunu ortaya koymaktadır. Altunkaynak ve Sarıkaya (2024)'nın araştırması da bu bulguları desteklemektedir. Araştırmada elde edilen sonuçlara göre, müzik eğitiminde kullanılan Web 2.0 araçlarının deney grubunda yer alan öğrencilerin ön test ve son test analizleri incelendiğinde, müzik başarılarında deney grubunun başarısı hususunda anlamlı bir artış olduğu gözlemlenmiştir. Üçel ve Karagözoğlu (2024)'nun araştırması kapsamında İHYD (İnsan Hakları, Yurttaşlık ve Demokrasi) dersinde Web 2.0

araçlarıyla yürütülen yaratıcı drama yönteminin gerçekleştirildiği deney grubu ile mevcut öğretim programı doğrultusunda ders işlenen kontrol grubu arasında yapılan son testlerde de deney grubunun lehine istatistiksel olarak anlamlı bir farklılık ortaya koyulmuştur. Bu bulgu, deney grubunda uygulanan yaratıcı drama yönteminin öğrencilerin akademik başarısını artırdığını ve yöntemin yararlı olduğunu göstermektedir. Alperen ve Kayacı (2023) araştırmasının sonucuna göre de, dil öğreniminde Web 2.0 araçlarının öğretim sürecine dahil edilmesi, öğrencilerin yabancı dil yeteneklerini artırmada kullanışlı bir strateji olabilir. Araştırmada elde edilen verilere göre deney grubunda kontrol grubuna oranla belirgin bir farklılık tespit edilmiştir, bu da bu araçların dil öğreniminde olumlu etkilerinin olduğunu göstermektedir. Bu tür araçların daha fazla kullanılması, öğrencilerin dil öğrenme motivasyonunu artırabilir ve dil öğreniminde daha yüksek başarılar elde etmelerine yardımcı olabilir. Can (2023)'ın araştırmasında da elde edilen bulgulara göre, deney grubunda ön test ile son test puanları arasında belirgin bir değişimin ve öğrenci başarısında ciddi bir değişimin olduğu belirtilmiştir. Bu değişim, Web 2.0 araçlarının öğretim ve öğrenme süreçlerini basitleştirmedeki etkinliği ile ilişkilendirilmiştir. Çoban ve Adıgüzel (2022)'in çalışmasında varılan sonuçlara göre de, 7. sınıf İngilizce dersinde "Celebrations" ünitesi kelime öğretme aşamasında Web 2.0 araçlarının önemli bir etkiye sahip olduğu belirlenmiştir. Deney ve kontrol gruplarındaki öğrencilerin ön-test ve son-test verileri incelendiğinde, son test puanlarının karşılaştırılmasıyla, deney grubu açısından pozitif bir değişim olduğu gözlemlenmiştir. Ahmadnejad vd. (2024)'nin yapmış olduğu araştırma bulguları ise, İran'daki geleneksel dil öğretim sürecine dahil edilen WhatsApp'ın, öğrencilerin dil başarıları üzerinde önemli bir etki yarattığını göstermektedir. Sosas (2021)'ın araştırmasında da, İngilizce öğreniminde teknolojinin kullanımının giderek daha yaygın ve verimli hale geldiği belirtilmektedir. Ayrıca, teknoloji sayesinde bilgiye daha kolay ulaşıldığı ve kolay kullanımı nedeniyle, eğitim uygulamaları, akıllı telefonlar ve tabletler gibi belirli teknolojilerin öğrenciler tarafından sıkça kullanıldığı gözlemlenmiştir. Araştırma bulguları, teknolojinin dil öğrenme sürecindeki etkinliğini ve öğrencilere sağladığı faydaları desteklemektedir. Van vd. (2021)'nin yapmış olduğu araştırma ise, İngilizce öğreniminde teknolojinin kullanımının giderek daha yaygın ve verimli hale geldiğini ortaya koymaktadır. Ayrıca, teknoloji sayesinde bilgiye erişim daha kolay hale gelmektedir. Kullanılabilirliği nedeniyle, eğitim uygulamaları, akıllı telefonlar ve tabletler gibi belirli teknolojilerin öğrenciler tarafından sıkça kullanıldığı gözlemlenmiştir. Bu bulgular, teknolojinin dil öğrenme sürecindeki etkinliğini ve öğrencilere sağladığı faydaları desteklemektedir. Zulkarnain ve Yunus (2023)'un araştırması ise, yabancı dil öğreniminde teknolojinin kullanımının hem anlama hem de üretim becerilerini önemli ölçüde geliştirdiğini göstermektedir. Dil öğrenme uygulamaları ve çevrimiçi tartışma forumları gibi etkileşimli platformların kullanımı, öğrencilere anında geri bildirim sağlayarak sürekli gelişimi ve aktif katılımı destekleyen bir ortam yaratmaktadır. Kovalenko ve Skvortsova (2022) tarafından yapılan çalışmada, teknoloji temelli eğitim oyunlarının dil öğretiminde kullanılmasıyla öğrencilerin katılımının arttığı ve kelime bilgisi, dilbilgisi ve konuşma becerilerinin daha etkileşimli ve eğlenceli bir şekilde kazandırıldığı bulunmuştur. Araştırma bulguları, oyun tabanlı öğrenmenin anında geri bildirim sağladığını ve bunun dilin daha kalıcı bir şekilde öğrenilmesine ve derinlemesine anlaşılmasına katkı sağladığını ortaya koymaktadır. Bu, teknoloji aracılığıyla oyunların, yabancı dil eğitiminde aktif katılımı teşvik ederek genel dil yeterliliğini artıran etkili bir pedagojik araç olarak kullanılabileceğini desteklemektedir. Malhiwsky (2010)'nin araştırma sonuçlarına göre ise Web 2.0 araçlarının öğrencilerin akademik başarılarını pekiştirdiği ve öğrenme motivasyonlarını artırdığı doğrulanmaktadır. Araştırma bulguları, Web 2.0 destekli derslere katılımın öğrencilerin dil bilgisi, anlama ve iletişim becerilerini önemli ölçüde artırdığını ortaya koymaktadır. Ön test ve son test sonuçları, öğrencilerin dilsel yetkinliklerinde belirgin bir gelişim olduğunu göstermektedir. Bu bulgu, Web 2.0 araçlarının öğrencilerin öğrenme süreçlerine etkileşimli ve katılımcı bir şekilde uyumlanmasının dil becerilerini pekiştirmede ve geliştirmede önemli bir rol oynadığını desteklemektedir. Ayrıca, Web 2.0 destekli derslerin, öğrencilerin sınıf içindeki topluluk hissi

ve bağlılık düzeyleriyle anlamlı bir ilişki içerisinde olduğu bulunmuştur. Bu sonuç, dijital araçların yalnızca dil öğretimi üzerindeki etkisini değil, aynı zamanda sınıf içindeki etkileşim ve topluluk duygusunu güçlendirme potansiyelini de göstermektedir. Shih (2011)'in yaptığı araştırma sonuçları ise, Web 2.0 araçlarının, özellikle Facebook üzerinden gerçekleştirilen akran değerlendirmesinin, İngilizce yazma derslerinde öğrencilerin dil becerilerini geliştirmede önemli bir rol oynadığını ortaya koymaktadır. Gou (2023)'nun yapmış olduğu çalışmanın sonuçları, Web 2.0 araçları olarak mobil uygulamaların, özellikle İngilizce öğrenimi bağlamında, eğitim ortamında etkili bir şekilde uyumlanabileceğini göstermektedir. Araştırmada deney grubu katılımcılarının final sınavında kontrol grubuna kıyasla daha yüksek puanlar alması, mobil öğrenme teknolojilerinin öğrenci başarısını artırma potansiyeline sahip olduğunu ortaya koymaktadır. Bu bulgu, mobil uygulamaların yalnızca öğrencilerin akademik başarılarını desteklemekle kalmayıp, aynı zamanda çevrimiçi işbirliği süreçlerinde de öğrencilerin etkileşimli öğrenmeye olan ilgisini artırdığını göstermektedir. Abusamra ve Triwiyanto (2023)'nun yapmış olduğu araştırmanın bulguları, katılımcıların Web 2.0 araçlarının faydalılığı konusunda benzer olumlu algılar paylaştıklarını göstermektedir. Bu araçların dil öğrenme süreçlerine katkı sağladığını ve öğretmenleri ile akranlarıyla etkileşimde faydalı olduklarını belirtmişlerdir. Ayrıca, Web 2.0 araçlarının öğrenmeyi daha eğlenceli, çeşitli ve rahat hale getirdiğini, ayrıca yaratıcılık ve yenilikçilik açısından da katkı sağladığını belirtmişlerdir. Bu bulgular, Web 2.0 teknolojilerinin dil öğreniminde etkileşimi ve işbirliğini destekleyerek öğrencilerin öğrenme süreçlerine olumlu etkiler sunduğunu göstermektedir. Sonuç olarak alanyazında yer alan araştırmaların geneline bakıldığında , deney grubunda yer alan öğrencilerin Web 2.0 araçları ile gerçekleştirilen öğretim sonrası akademik başarılarındaki artışın, geleneksel öğretim yöntemleri ile öğrenim sürecini geçiren kontrol grubundan daha fazla olduğu gözlemlenmiştir. Bu durum, Web 2.0 araçlarının dahil edildiği öğretimin öğrencilerin akademik başarıları açısından daha etkili olduğu sonucuna ulaşılmasını sağlamaktadır.

Ayrıca araştırmada, İngilizce öğretiminde Web 2.0 araçlarının kullanımının öğrencilerin akademik başarıları üzerindeki etkisi incelenirken, cinsiyet değişkeni de göz önünde bulundurulmuştur. Deney grubunun son test sonuçları cinsiyet değişkeni açısından incelendiğinde, kız öğrenciler ile erkek öğrencilerin akademik başarıları arasında anlamlı bir farklılık bulunmuştur. Ancak, kontrol grubunda yer alan öğrencilerin son test sonuçları arasında bir değişime rastlanılmamıştır. Bu durum, genellemeler yapmadan önce dikkatlice değerlendirilmesi gerektiğini göstermektedir ve bu durumun birden fazla sebebi olabileceği düşünülmektedir. Bu bağlamda, cinsiyetin öğrencilerin akademik başarıları üzerindeki etkisi ve bu etkinin farklı öğretim yöntemleri altında nasıl değiştiği gibi konuların daha ayrıntılı olarak incelenmesi gerekmektedir. Bu bulgular, öğrencilerin farklı özelliklerinin ve ihtiyaçlarının dikkate alınması gerektiğini ortaya koymaktadır. Özdemir ve Eren (2024)'in çalışmasında elde edilen bulgular da araştırmanın bulgularını destekler niteliktedir. Araştırma kapsamında varılan sonuçlar neticesinde, Web 2.0 araçlarının Fen Bilimleri dersinde kullanımının, öğrencilerin cinsiyetleri üzerinde herhangi bir belirgin etkisi tespit edilememiştir. Yıldırım (2020)'ın araştırmasında da iki grupta yer alan kız ve erkek öğrencilerin son test sonuçları arasında anlamlı bir değişime ulaşılamamıştır. Sonuç olarak, deney ve kontrol gruplarındaki öğrencilerin cinsiyetlerine bağlı olarak farklı bir performans sergilemediklerini göstermektedir. Mert ve Şen (2019)'in çalışmasında da derslerde teknoloji Web 2.0 araçlarının uygulandığı deney grubu öğrencileri ile alışılagelmiş öğretim yöntemlerinin gerçekleştirildiği kontrol grubu öğrencilerinin ön ve son test puanları cinsiyetlerine göre potansiyel bir farklılığın varlığı araştırma konusu olmuştur. Bu araştırmada dai deney grubu öğrencileri ile kontrol grubu öğrencileri arasında cinsiyet faktörünün son test başarı testi sonuçları üzerinde herhangi bir fark oluşturmadığı sonucuna ulaşılmıştır. Buluş Kırıkkaya vd. (2016)'nın araştırmasında da deney ve kontrol gruplarındaki kız ve erkek öğrencilerin kazanımlara dair başarıları arasında ciddi bir farklılık meydana gelmemiştir. Bu bulgulara dayanarak, deney ve kontrol gruplarında yapılan uygulamaların öğrencilerin akademik başarısı üzerinde cinsiyetin herhangi bir etkisinin olmadığı söylenebilir. Ocak

(2015)'ın araştırma sonuçlarına göre de, kontrol grubu öğrencileri ile deney grubu öğrencilerinin son test puanları arasında cinsiyet değişkenine göre önemli bir değişim bulunmamıştır. Wen-Hao vd. (2013)'nin yapmış olduğu araştırma bulguları, özellikle, kız üniversite öğrencilerinin Web 2.0 uygulamalarını kullanma konusunda erkek öğrencilere kıyasla daha fazla kaygı duyduklarını göstermektedir. Erkek öğrencilerin ise, Web 2.0 araçlarını daha etkin bir şekilde kullanarak, bu araçlardan daha fazla faydalandıkları ve dolayısıyla kız öğrencilere göre daha başarılı oldukları ortaya çıkmıştır. Vella vd. (2016)'nin yaptıkları araştırmanın bulguları, Web 2.0 araçları kullanılarak işlenen derslerde, akademik başarıyı etkileyen çeşitli faktörlerin arasında cinsiyet faktörünün üzerinde de durmuştur. Özellikle genç yaşlarda kadınların erkeklere göre daha başarılı olduğu fakat yaşlandıkça cinsiyetler arası öğrenme farkının daha az belirgin olduğunun üzerinde durulmuştur. Bu durum, yaşın ve cinsiyetin, öğrencilerin başarı düzeylerinde önemli bir rol oynadığını ve özellikle yaş ilerledikçe, cinsiyet farkının daha belirgin olmadan azalabileceğini göstermektedir. Yussiff vd. (2013)'nin yaptığı çalışma sonucunda, her iki cinsiyet de Web 2.0 araçlarını kullanarak gerçekleştirilen öğretim sonrası benzer başarı seviyelerine ulaşmış, akademik yazma becerilerini geliştirmede eşit bir performans sergilemişlerdir. Kız ve erkek öğrenciler arasında akademik yazma becerileri konusunda anlamlı bir farklılık bulunmamıştır. Bu bulgu, cinsiyetin akademik yazma becerilerinde belirleyici bir faktör olmadığını, Web 2.0 araçlarının her iki cinsiyet için de eşit derecede faydalı ve etkili bir öğrenme desteği sağladığını göstermektedir. Wei vd. (2013)'nin gereçekleştirmiş olduğu çalışmanın bulguları, Web 2.0 araçlarının kullanımında cinsiyet farklılıklarına işaret etmektedir. Özellikle, kız öğrencilerin erkek öğrencilere kıyasla Web 2.0 araçlarını daha fazla kullandıkları ve bu araçlar üzerinden çalıştıkları derslerde daha başarılı oldukları gözlemlenmiştir. Bu durum, kız öğrencilerin akademik başarılarının, teknolojinin eğitimdeki rolüyle daha fazla ilişkilendirilebileceğini göstermektedir. Sonuç olarak, cinsiyet değişkeninin öğrencilerin İngilizce başarıları üzerindeki etkisinin karmaşık olduğu ve öğretim sürecinde dikkat edilmesi gereken mühim bir durum olduğu sonucuna ulaşılmıştır.

Araştırmanın sonuçları doğrultusunda, İngilizce öğretiminde daha etkili yöntemler ve stratejiler geliştirilmesi için bazı öneriler sunulmaktadır;

• Web 2.0 araçları, öğretim programlarıyla ilişkilendirilerek ders içeriğinin daha etkili bir şekilde iletilmesine yardımcı olabilir. Eğitimciler, derslerinde bu araçları kullanarak öğrencilerin konuları daha iyi anlamalarını sağlayabilirler.

• Eğitimciler, öğrencilerin öğrenme ihtiyaçlarına uygun materyaller oluşturarak öğrenme süreçlerini destekleyebilirler. Bu materyaller, öğrencilerin ilgisini çekecek şekilde tasarlanabilir ve öğrencilerin öğrenme süreçlerini destekleyebilir.

• Araştırmada kullanılan Wordwall, Quizizz ve Edpuzzle gibi araçlar dışında da farklı Web 2.0 araçları bulunmaktadır. Bu araçlar da denenebilir ve öğrencilerin eğitim-öğretim tecrübelerini geliştirmek amacıyla uygulanabilir.

• Bu araştırma, İngilizce dersinde Web 2.0 araçları kullanımının öğrencilerin akademik başarılarını arttırdığını ispatlamıştır. İngilizce dersinde olduğu gibi, diğer branşlarda ve konularda da Web 2.0 araçlarının kullanımının öğrencilerin akademik başarılarını arttırabileceğini gösteren bu araştırmadan ilham alınarak, farklı branş derslerinde de bu araçlar etkin bir şekilde kullanılabilir.

• Araştırma, geleneksel öğretim yöntemlerinin yerine Web 2.0 araçlarının kullanılmasının daha etkili olduğunu göstermektedir. Bu nedenle, geleneksel yöntemlerden uzaklaşarak öğrencilerin ilgisini çekecek ve öğrenmeyi kolaylaştıracak yeni yöntemler denenebilir.

• Araştırma, ortaöğretim öğrencileri ile yapılmış olsa da Web 2.0 araçları farklı eğitim kademesindeki öğrencilerle de kullanılabilir. Bu araçlar, ilkokuldan üniversiteye kadar farklı yaş gruplarındaki öğrencilerin öğrenme süreçlerini destekleyebilir.

• Bu araştırmada, Wordwall, Quizizz ve Edpuzzle adlı Web 2.0 araçları kullanılmıştır. Web 2.0 araçlarının öğrencilerin akademik başarılarına etkisi konusunda yapılan araştırmaların azlığına yönelik olarak, araştırmacılar farklı araçları inceleyerek bu alandaki boşluğu doldurabilirler.

• Bu araştırma kapsamında ortaöğretim öğrencileri ile birlikte çalışmalar yapılmış ve sadece İngilizce dersinin "Human in Nature" ünitesi çalışma kapsamına alınmıştır. Araştırmacılar farklı eğitim kademesinde ve farklı konularda da Web 2.0 araçlarının etkisini inceleyebilirler. Bu şekilde, araştırmaların genel geçerliliği arttırılabilir.

• Araştırmacılar, cinsiyetin Web 2.0 araçlarının kullanımı ve etkisi üzerindeki potansiyel etkilerini daha kapsamlı bir şekilde inceleyebilirler.

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The effect of using Web 2.0 tools in teaching English on students' academic achievement[1]

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Abstract
This study aims to examine the effects of using Web 2.0 tools on students' academic achievement in English language teaching. The research was conducted during the 2023-2024 academic year with 9th grade students from a high school in Kilis, Turkey, adopting an experimental research design. The students were divided into two groups with similar achievement levels: the experimental group, which was exposed to a teaching process supported by Web 2.0 tools, and the control group, which received instruction using traditional teaching methods. The focus of the study was the "Human in Nature" unit from the 9th grade English curriculum as defined by the Ministry of National Education (MNE) of Turkey. In the study, a custom English academic achievement test developed by the researcher was used as the data collection tool. The test was administered as a pre-test to both groups before the teaching process to assess their initial achievement levels. The experimental group underwent a teaching process enhanced with Web 2.0 tools, while the control group received traditional instruction. After the teaching process, both groups were given the same test as a post-test to assess the effects of the teaching methods. The findings of the study indicate that the use of Web 2.0 tools led to a significant increase in the academic achievement of the experimental group. Furthermore, analyses based on gender showed a statistically significant difference in favor of female students in the experimental group, whereas no significant gender-related differences were observed in the control group. These results suggest that Web 2.0 tools are an effective pedagogical tool for enhancing students' academic achievement in English language teaching. It is emphasized that educators should adapt to technological advancements and integrate these tools into their teaching processes. Additionally, the study suggests that Web 2.0 tools can be effectively used not only in English language teaching but also to enrich learning experiences in other subject areas. Finally, the study indicates that further research is needed to explore the role of gender in academic achievement in more depth.

Keywords: English lesson, academic success, Web 2.0 tools, teaching methods

INTRODUCTION

Education is one of the most fundamental and important elements of human history, and it has been in a continuous state of change and transformation from the past to the present (Akın & Çeçen, 2015). Traditional teaching methods have dominated for many years, relying on the transmission of knowledge through blackboards and books in classrooms. However, these methods have certain limitations, particularly in terms of engaging and motivating students. Despite the time, effort, and money invested in foreign language education, a low level of foreign language proficiency remains a serious issue in Turkey. The persistence of traditional methods and habits in language teaching/learning, along with deficiencies in language planning, can be considered as the primary causes of this problem (Işık, 2008). The challenges faced in language teaching emphasize the importance of new research and developments in teaching methods and strategies, making it necessary to develop new approaches and models for language education (Bican, 2019). Today, with the rapid advancement of technology, the use of technology in

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education has become a widely discussed topic. However, there are numerous benefits to using technology in language teaching (Wang & Vasques, 2012). Firstly, it encourages students to take an active role in the learning process. Additionally, it enriches the learning environment by adding diversity, vibrancy, and quality to the teaching process (Elmas & Geban, 2012). Thanks to the opportunities provided by technology, students have the chance to learn at their own pace and are able to repeat lessons as many times as they wish (Faizi, 2018; Kuznetsova & Soomro, 2019). This ensures that the learning process becomes more effective and efficient. Technology also offers flexibility in planning and the opportunity for instant feedback, providing students with greater control and guidance throughout their learning journey (Göçen et al., 2020). Furthermore, the use of technology saves time and enhances computer literacy. Particularly, it contributes to attention development in preschool and post-school individuals, and the interactions on the screen encourage individuals to focus on the learning process without distraction. This, in turn, supports better understanding and retention of information. Technology also improves an individual's ability to multitask, for instance, by enhancing hand-eye coordination and strengthening the ability to perform multiple tasks simultaneously (Akdağ & Karahan, 2004). The advancement of educational technology encourages teachers to update their teaching methods in line with these developments. In this context, foreign language instructors have also started to implement these advancements in their classrooms. This is because if educators' teaching methods are not aligned with the learning habits of the new generation, the learning process may become challenging (Karasar, 2004). Therefore, it is crucial for teachers to renew their teaching strategies by effectively utilizing educational technologies (Temizyürek & Ünlü, 2015). In today's world, one of the innovative technologies, Web 2.0 tools, is bringing about a significant transformation in the educational process (Göker & İnce, 2019). These tools provide students with interactive learning experiences, making the learning process more enjoyable, while also offering educators the opportunity to present materials more effectively and monitor student progress (Alexiou-Ray et al., 2003). Thus, it is of utmost importance to understand the transformation in education from the past to the present and the role of technology in education. Recognizing the limitations of past educational methods and evaluating the opportunities brought by new technologies enables the development of a more effective and efficient approach to education (Baş & Yıldırım, 2018). Furthermore, the gender variable may have the potential to create differences in students' learning processes and academic achievements. Gender is an important variable that can influence individuals' educational processes, learning styles, motivations, and habits regarding the use of technology (Orhan & Tekin, 2019). The use of technology in education, especially innovative digital tools such as Web 2.0 tools, can differentiate individuals' learning experiences. However, understanding how gender develops an attitude toward these digital tools and how these tools effect students' academic achievements is of great importance in understanding gender equality and achievement gaps in education. Therefore, the aim of this study is to understand and evaluate the effect of incorporating Web 2.0 tools into English language teaching on students' academic success, investigate the significance of educational and technological practices from the past to the present, examine the effects of Web 2.0 tools on English teaching while considering the role of gender in this process, and answer the following research questions:

1. Is there a significant difference between the pre-test scores of the experimental and control group students in the academic achievement test in the English course?
2. Is there a significant difference between the pre-test and post-test scores of the experimental group students in the academic achievement test in the English course?
3. Is there a significant difference between the pre-test and post-test scores of the control group students in the academic achievement test in the English course?
4. Is there a significant difference between the post-test scores of the experimental and control group students in the academic achievement test in the English course?

5. Is there a significant difference in the post-test results of the achievement test according to the gender variable among the experimental group students in the English course?
6. Is there a significant difference in the post-test results of the achievement test according to the gender variable among the control group students in the English course?

METHOD

Research Design

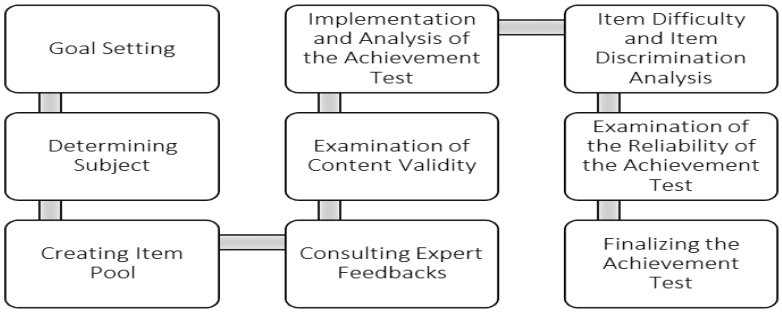
Since the aim of the study is to examine the effect of using Web 2.0 tools on students' academic achievement in the 9th-grade English course, an experimental model, which is one of the quantitative research methods, was used. Experimental research can be defined as calculations based on measuring the effect of selected variables on the dependent variable. These types of studies include specifically designed experiments to test causal relationships between variables. The researcher decides how the experimental process will be conducted, which variables will be controlled, how the experiment will be implemented, and which groups will be involved. These decisions are crucial as they can affect the outcomes of the experiment, making careful planning and design essential in experimental research (Büyüköztürk et al., 2024). In this study, a quasi-experimental design, which is one of the experimental designs, was chosen. The quasi-experimental design is implemented by using certain pre-measures and criteria to determine the experimental and control groups. In this study, two different classes of 9th-grade students who had not previously acquired the achievements in the "Human in Nature" unit were selected as the experimental and control groups.

Research Group

The research was conducted during the fall semester of the 2023-2024 academic year at a high school located in the center of Kilis province. Necessary correspondence with the Ministry of National Education (MEB) was made, and permission was obtained to carry out the study, completing the required procedures. In the experimental study, the experimental and control groups were formed from students selected from two different classes that were equivalent to each other. The groups were carefully analyzed based on the students' English course grade averages, and students with the most similar achievement levels were selected. In this way, one class was designated as the experimental group, and the other class was assigned as the control group. A total of 54 students participated in the study, with 27 students from each class included in the research. This arrangement allowed the study to produce more reliable and valid results.

Data Collection Tool

In the scope of the research, an achievement test developed by the researcher was used to measure the academic success of the students. This test was designed to assess how successfully the students had acquired the achievements in the "Human in Nature" unit. The achievement test consists of multiple-choice questions aimed at measuring students' grammar, vocabulary, and comprehension skills. This test served as an important data collection tool to compare the achievement levels of the experimental and control groups and to achieve the purpose of the study. The process followed in the development of the achievement test is provided in Visual 1.



Visual 1. Achievement Test Development Process

Initially, during the phase of determining the subject of the achievement test, the 9th-grade English curriculum and textbook, as defined by the Ministry of National Education, were used as the basis. In particular, the learning outcomes and topic headings of the "Human in Nature" unit were taken into consideration to shape the content of the test. During this process, the learning objectives that students were expected to achieve in relation to the unit were the focus, and the scope of the test was developed accordingly.

In the stage of creating the item pool, the 9th-grade English textbook for the 2023-2024 academic year was used as the source. A total of 47 multiple-choice questions were initially prepared, with each question designed to assess specific learning outcomes of the unit. In this phase, care was taken to ensure that an equal number of questions were included for each outcome.

Next, to enhance the validity and reliability of the test, expert opinions were sought. The initial version of the test was thoroughly reviewed by 5 education experts, 1 Turkish language expert, and 2 English language teachers. Based on the feedback received from the experts, it was noted that some questions required clarifying notes, some questions needed adjustments in difficulty level, and some questions needed to be completely revised. In response to this feedback, significant revisions were made to the test's content, clarity, and difficulty level. The experts' feedback enhanced the validity of the test, leading to the creation of a more reliable and effective assessment tool.

Following expert feedback, a blueprint table was created to ensure the content validity of the test. This table was used to assess which learning outcomes each question was designed to measure and to determine whether the learning outcomes in the test were equally distributed. With the help of the blueprint table, the overall balance of the test was ensured, and the distribution of questions was reviewed for appropriateness. During this phase, it was observed that more questions needed to be added from certain topics, while fewer questions were necessary from others. However, this adjustment can be considered a conscious choice, taking into account the length and significance of the topic headings.

The application process of the achievement test and the detailed item analysis were crucial steps in ensuring the validity and reliability of the test. The test was administered to a group of 144 students, all 10th-grade students who had previously learned the achievements of the unit.

After the test was administered, the data obtained were analyzed using the SPSS 27.0 software. The analysis process focused on determining the difficulty level (item difficulty index) and discriminability (item discriminability index, Rjx) of each question. Initially, the test consisted of a pool of 47 questions, but as a result of the item analysis, 11 questions that did not serve the purpose were removed. These 11 questions were replaced with 36 more appropriate questions to create the final achievement test. The selected questions were of medium difficulty and had moderate to high discriminability, aiming to accurately measure students' achievements. In terms of discriminability, questions with an index value of 0.40 or above were typically preferred, with a small number of items having values between 0.30 and 0.40 included in the test.

To assess the reliability of the test, the Kuder-Richardson-20 (KR-20) coefficient was calculated. This coefficient is a reliability index that measures the internal consistency of the test, with a value range considered acceptable between 0.70 and 0.90. The calculated KR-20 value of 0.86 indicates high reliability, suggesting that the test accurately measures the English language skills it aims to assess, and that the students' results are consistent.

In conclusion, the achievement test, supported by expert feedback and item analysis, became a reliable tool for measuring students' knowledge, skills, and comprehension of the "Human in Nature" unit. This test has been carefully developed in terms of both validity and reliability, providing an effective means of evaluating students' success in relation to this unit.

Data Collection Process

Ethical approval for the study was obtained from the Ethics Committee of Kilis 7 Aralık University with the approval number E-76062934-044-45024, dated February 7, 2024. Additionally, informed consent forms were completed for each participant. Two 9th-grade classes with similar overall academic performance levels were selected at a high school in Kilis, and one class was assigned as the experimental group, while the other class served as the control group. A total of 27 students from each group were selected to maintain balance between the groups. Students not included in the groups also took the achievement test, but their data were not considered in the analysis. For reliability and validity purposes, however, this information was kept confidential.

To avoid disrupting the natural classroom atmosphere and the normal flow of lessons, the researcher worked alongside the class's English teacher and conducted observations over a sufficient period. This approach helped maintain the independence of the study while not interfering with the students' regular routines. After the final version of the achievement test was prepared through analysis, it was administered as a pre-test to both the experimental and control groups at the beginning of December, before the "Human in Nature" unit began. The duration for administering the test was 54 minutes, with 1.5 minutes allocated for each question for both classes.

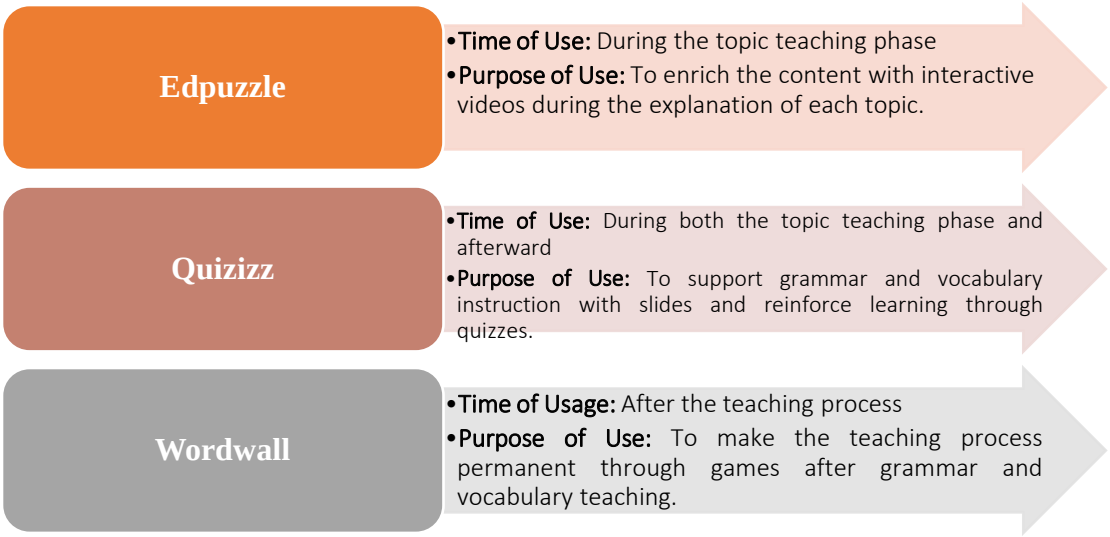
Following the pre-test, the lessons for the experimental group were conducted using Web 2.0 tools in line with the English curriculum objectives provided by the Ministry of National Education. During the research process, various Web 2.0 tools such as Edpuzzle, Quizizz, and Wordwall were used to enrich students' English learning experiences.

The experimental group's sessions lasted for 3 weeks, with 4 hours of classes per week, totaling 12 hours. These sessions were conducted by the students' English teacher. Throughout the process, the researcher actively utilized Web 2.0 tools prepared for the lessons. Before starting the application, the English teacher involved in the study was briefed on the entire process and provided with details about the 3-week study. Additionally, the teacher was given the necessary training to effectively use Web 2.0 tools, with comprehensive information about their functions. The training focused on which tools would be used and how to integrate them effectively into the classroom. During the training period, the researcher limited their observations to avoid disrupting the natural flow of the class.

For the experimental group, the lessons were conducted using interactive whiteboards, allowing students to engage with technology and participate more actively in the lessons. The researcher created lesson materials in the form of videos and shared them with students via the Edpuzzle platform. As students watched these videos, they encountered interactive quizzes and content related to the lesson, engaging them in the learning process.

Additionally, Quizizz was used to allow students to review the material and assess their learning. Students had the opportunity to complete the quizzes at their own pace, personalizing their learning experiences. The competitive environment provided by Quizizz further boosted motivation and made the lessons more enjoyable. Furthermore, Wordwall was utilized to improve students' vocabulary, reinforce grammar rules, and enhance communication skills. Game-based activities through Wordwall increased students' interest in learning and encouraged participation.

The Web 2.0 tools used in this study were designed to capture students' attention, make the learning process more enjoyable, and help them better understand lesson materials. These tools facilitated the development of students' English language skills and helped them achieve a deeper understanding of the learning objectives in the "Human in Nature" unit. Further details of all the Web 2.0 tools used in the study can be found in Visual 2 below.



Visual 2. Web 2.0 Tools Used in the Instructional Process

After the lessons conducted with the experimental group, achievement tests were administered to evaluate the effects of Web 2.0 tools on students' academic performance. These tests aimed to assess the students' grammar, vocabulary, and other skills related to the relevant unit. The test results facilitated an analysis of whether or not Web 2.0 tools contributed to an increase in the academic success of the students.

In the control group, language instruction was carried out using traditional methods, in accordance with the English language teaching curriculum developed by the Ministry of National Education. This group, in contrast to the experimental group, was exposed to conventional teaching methods without the integration of technology. This approach served as an important reference point for determining the effects of traditional teaching methods when compared to the experimental group.

When both the experimental and control groups completed the learning process for the “Human in Nature” unit, the same achievement test was re-administered as a final test to ensure consistency in the research and to make the results comparable. Each question was allotted 1.5 minutes, and the test duration was set to 54 minutes for both classes. This step was crucial in ensuring equal conditions between the two groups and enabling accurate data comparison. During the administration of the achievement test, standard procedures were carefully followed, and equal opportunities were provided to each student. As a result, the reliability of the obtained data was enhanced, and the research findings were based on a more solid foundation.

Data Analysis Process

The analysis of the achievement tests administered to the experimental and control groups consisting of 9th-grade students in the study was conducted comprehensively using the SPSS 27.0 software. In data analysis, when the sample size in groups is less than 30, it can be difficult to meet the assumptions required for parametric tests. In such cases, more flexible methods that do not require normal distribution are preferred instead of making strict assumptions about the distribution of the data. Non-parametric tests provide reliable results when sample sizes are small or the data do not follow a normal distribution. Therefore, in research with limited sample sizes, non-parametric tests are considered a more appropriate option for performing accurate and reliable analyses (Sümbüloğlu & Sümbüloğlu, 2007).

In this study, due to the sample sizes being less than 30 in the groups, non-parametric tests such as the Mann-Whitney U and Wilcoxon Signed-Rank Test were used in the data analysis. These tests are effective in evaluating differences between groups in non-parametric data. These selections were made considering the distribution characteristics of the data and facilitated the correct execution of the analyses.

FINDINGS

Findings Regarding the Pre-Test Achievement Results of the Experimental and Control Group Students

To determine potential differences in the pre-test achievement scores between the students in the experimental and control groups, the Mann-Whitney U Test, a non-parametric method, was used (Table 1).

Table 1. Mann-Whitney U Test Results for the Pre-Test Achievement Scores of the Experimental and Control Group Students

Pre-test of experimental and control groups	N	Rank average	z	U	*p
Pre-test of experimental group	27	30,50	-	283,500	.159
Pre-test of control group	27	24,50	1,408		
	Total 54				

As a result of this test, the obtained "p" value was found to be 0.159. This "p" value is greater than the generally accepted significance level of 0.05. Therefore, it was determined that there was no statistically significant difference between the pre-test scores of the experimental and control group students. This finding indicates that the academic achievement levels of the students in both the experimental and control groups were similar.

Findings Regarding the Pre-Test and Post-Test Achievement Results of the Experimental Group Students

The Wilcoxon Signed-Rank Test, a non-parametric method, was used to determine potential differences between the pre-test and post-test achievement scores of the students in the experimental group (Table 2).

Table 2. Wilcoxon Signed-Rank Test Results for the Pre-Test and Post-Test Achievement Scores of the Experimental Group Students

Experimental group	N	Rank average	z	U	*p	**Effect size (r)
Pre-Test	27	21,81	-2,668	211,00	.008	0,51
Post-Test	27	33,19				
	Total 54					

**p<0.05 Significant Difference Exists*
***(r)=0,51 Large Effect Size*

As a result of this test, it was found that there was a statistically significant change between the pre-test and post-test scores of the experimental group students. This finding indicates that the students in the experimental group experienced a change in their performance.

To measure the magnitude of this change, the effect size of the Wilcoxon Signed-Rank Test result was examined using the formula below.

$$r = \frac{2,668}{\sqrt{27}} = 0,51$$

According to the formula results, the effect size of the Wilcoxon Signed-Rank Test (r) was calculated to be 0.51. Based on this result, it can be concluded that there was a large effect between the pre-test and post-test scores of the experimental group students. This indicates that the change in the performance of the students in the experimental group, under the conditions of the study, was statistically significant, and the difference between the scores is notable. This finding provides evidence that the experiment had a significant effect on the students' academic achievements.

Findings Regarding the Pre-Test and Post-Test Achievement Results of the Control Group Students

The Wilcoxon Signed-Rank Test, a non-parametric test, was used to evaluate the potential differences between the pre-test and post-test achievement scores of the control group (Table 3).

Table 3. Wilcoxon Signed-Rank Test Results for the Pre-Test and Post-Test Achievement Scores of the Control Group Students

Control group	N	Rank average	z	U	*p	**Effect size (r)
Pre-Test	27	23,1	2,327	368,0	.020	0,44
Post-Test	27	24,0				
	Total 54					

**p<0.05 Significant Difference Exists*
***(r)=0,44 Medium Effect Size*

The result of the Wilcoxon Signed-Rank Test suggests that the control group students performed better over time, indicating that traditional teaching methods were effective in improving student achievement. To determine the effect size of the change between the pre-test and post-test performance of the control group students, the following formula was applied.

$$r = \frac{2,327}{\sqrt{27}} = 0,44$$

When the above formula is applied, the effect size of the change between the pre-test and post-test performance of the control group students was calculated to be 0.44. This value indicates a medium effect size. This suggests that while the effect of traditional teaching methods in the control group was not as strong as that of the experimental group, it still had a measurable effect on the students' academic performance.

Findings Regarding the Post-Test Achievement Results of the Experimental and Control Group Students

The Mann-Whitney U Test, one of the non-parametric methods, was used to evaluate the potential differences between the post-test achievement scores of the experimental and control group students (Table 4).

Table 4. Mann-Whitney U Test Results for the Post-Test Achievement Scores of the Experimental and Control Group Students

Post-Test of experimental and control groups	N	Rank average	z	U	*p	** Effect size (r)
Post-Test of experimental group	27	33,83	2,971	193,50	.003	0,57
Post-Test of control group	27	21,19				
	Total 54					

**p<0.05 Significant Difference Exists*
***(r)=0,57 Large Effect Size*

As a result of this test, it was concluded that there was a meaningful change between the results of the experimental and control groups. This finding indicates that the post-test results differed between the experimental and control groups, with the experimental group exhibiting higher performance. To examine the effect size of the difference between the post-test results of the experimental and control groups, the following formula was applied.

$$r = \frac{2,971}{\sqrt{27}} = 0,57$$

The effect size (r) of the Mann-Whitney U Test was calculated to be 0.57. This result indicates that the effect size of the difference between the post-test scores of the experimental and control groups is large. In other words, the difference in student achievements is significant and noteworthy.

Findings Regarding the Post-Test Achievement Results of the Experimental Group Students Based on Gender

The post-test achievement scores of the experimental group students, based on the gender variable, were analyzed using the Mann-Whitney U Test (Table 5).

Table 5. Mann-Whitney U Test Results for the Post-Test Achievement Scores of the Experimental Group Students Based on Gender

Post-Test of experimental group	N	Rank average	z	U	*p	** Effect size (r)
Female	16	17,38	-2,700	34,00	.007	0,51
Male	11	9,09				
	Total 27					

**p<0.05 Significant Difference Exists*
***(r)=0,51 Large Effect Size*

According to these findings, a meaningful difference in the achievement test results is observed between the female and male students in the experimental group. It can be stated that the achievement scores of female students were significantly higher than those of male students. This suggests that gender could be a potentially influential factor in students' academic performance.

To determine the effect size of the change between the post-test performance of female and male students in the experimental group, the following formula was applied.

$$r = \frac{2,700}{\sqrt{27}} = 0,51$$

According to the formula result, the effect size was calculated to be 0.51. This value indicates that the change in the achievement test results between female and male students in the experimental group has a large effect. In other words, it suggests that gender plays a significant role in the academic performance of students in the experimental group.

Findings Regarding the Post-Test Achievement Results of the Control Group Students Based on Gender

The Mann-Whitney U Test was used to evaluate the potential effect of the gender variable on the post-test achievement scores of the control group students (Table 6).

Table 6. Mann-Whitney U Test Results for the Post-Test Achievement Scores of the Control Group Students Based on Gender

Post-Test of control group	N	Rank average	z	U	*p	**Effect size (r)
Female	17	13,68	0,278	90,50	.781	0,05
Male	10	14,55				
	Total 27					

**p>0.05 No Significant Difference*
***(r)=,05 Small Effect Size*

According to the results of the Mann-Whitney U Test, the p value was found to be 0.781. These findings suggest that there is no significant difference between the achievement test results of female and male students in the control group. When examining the achievements of both gender groups, no significant difference was observed. This indicates that gender in the control group has a similar effect on the students' academic performance.

To determine the effect size of the change in the achievement test results between female and male students in the control group, the following formula was applied.

$$r = \frac{0{,}278}{\sqrt{27}} = 0{,}05$$

Based on the result obtained from the formula, the effect size was calculated to be 0.05. This value indicates that the change in the achievement test results between female and male students in the control group has a small effect. In other words, the effect of gender on academic achievement is less pronounced in the control group.

The findings of this study suggest that Web 2.0 tools are effective in improving students' academic performance when used in English language teaching. In the experimental group, a significant difference was observed in the achievement test scores of students who were taught using Web 2.0 tools. The results of the Wilcoxon Signed-Rank Test revealed a substantial difference between the pre-test and post-test scores of students in the experimental group, with a large effect size. On the other hand, it was found that traditional teaching methods also contributed to improving students' performance in the control group, although this effect was not as pronounced as the effect of Web 2.0 tools. According to the results of the Wilcoxon Signed-Rank Test in the control group, a significant improvement in the students' achievement test scores was observed, but the effect size of this improvement was lower compared to the experimental group.

When examining the gender variable, it was found that female students in the experimental group had higher achievement scores than male students, while no significant difference between genders was found in the control group.

CONCLUSION, DISCUSSION, and RECOMMENDATIONS

The homogeneity of the groups in experiments is crucial for the validity and reliability of the results obtained. Based on the analyses, no significant difference was found between the pre-test scores of both groups. This indicates that the academic achievement levels of students in the experimental and control groups were comparable at the start of the study. This fact enhances the validity and reliability of the research.

According to the statistics obtained, a significant difference was observed between the pre-test and post-test achievement scores of students in the experimental group, and the effect of the change was found to be substantial. These findings demonstrate that the use of Web 2.0 tools in English teaching significantly improved the academic performance of students in the experimental group.

The results indicate that there was a meaningful difference between the pre-test and post-test scores of students in the control group, and the effect size was moderate. The change in the performance of students in the control group was also significant. This suggests that traditional teaching methods in the control group also had a positive effect on students' academic achievements.

Based on the obtained results, a statistically significant difference was found between the experimental and control groups. Moreover, when examining the effect size, it was observed that the difference in post-test scores between the two groups was substantial. These results show that lessons conducted using Web 2.0 tools in the experimental group had a greater effect on students' academic achievements compared to lessons taught using traditional methods in the control group.

The analysis also revealed a significant difference in the achievement test results between female and male students in the experimental group. When evaluating the effect size, it was observed that female students had significantly higher achievement scores than male students. This indicates that female students in the experimental group were more successful than male students. These results provide important evidence that gender may be a significant factor influencing students' academic performance.

However, the analysis of the control group revealed no significant difference in the achievement test results between female and male students. Statistically, no significant difference was observed in the achievement scores between the two gender groups. These results suggest that gender has similar effects on academic performance in the control group. Additionally, the effect size of the change in achievement test results between female and male students in the control group was found to be small. This suggests that the effect of gender on achievement was less pronounced in the control group.

The results of the study show that students in the experimental group, who were taught using Web 2.0 tools, achieved higher academic success compared to students in the control group who underwent the traditional teaching methods. This suggests that teaching conducted with Web 2.0 tools has a greater effect than traditional teaching methods. The findings support the research conducted by Altunkaynak and Sarıkaya (2024). According to their study, when analyzing the pre-test and post-test results of students in the experimental group in music education, a significant improvement in the students' musical success was observed. Similarly, Üçel and Karagözoğlu (2024) found a statistically significant difference favoring the experimental group, which used creative drama methods with Web 2.0 tools, compared to the control group, which followed the current curriculum in the Human Rights, Citizenship, and Democracy course. This finding indicates that the creative drama method used in the experimental group effectively increased students' academic success, showing the method's usefulness. According to Alperen and Kayacı (2023), the incorporation of Web 2.0 tools in language learning can be a useful strategy to enhance students' foreign language skills. The data collected from the study show a significant difference between the experimental and control groups, indicating that these tools have a positive effect on language learning. The increased use of such tools can motivate students to learn a language more effectively and help them achieve higher success in language acquisition. Can (2023) also reported that a significant change in the students' achievement scores was observed between the pre-test and post-test in the experimental group, indicating a serious improvement in student success. This change was associated with the effectiveness of Web 2.0 tools in simplifying the teaching and learning processes. According to Çoban and Adıgüzel (2022), Web 2.0 tools had a significant effect on the word-teaching stage of the "Celebrations" unit in the 7th grade English class. When analyzing the pre-test and post-test data from the experimental and control groups, a positive change was observed in the experimental group. The research findings by Ahmadnejad et al. (2024) indicate that WhatsApp, integrated into the traditional language teaching process in Iran, had a significant effect on students' language achievements. Similarly, Sosas (2021) found that the use of technology in English learning is becoming increasingly common and efficient. Moreover, the use of technology, including educational applications, smartphones, and tablets, facilitates easier access to information and is widely adopted by students due to its convenience. The findings support the effectiveness of technology in the language learning process and the benefits it provides to students. Van et al. (2021) conducted research that reveals the increasing widespread and efficient use of technology in English learning. Furthermore, technology has made accessing information easier. Due to its usability, certain technologies, such as educational apps, smartphones, and tablets, are frequently used by students. These findings support the effectiveness of technology in the language learning process and the benefits it provides to students. Research by Zulkarnain and Yunus (2023) shows that the use of technology in foreign language learning significantly improves both comprehension and production skills. The use of interactive platforms such as language learning apps and online discussion forums creates an environment that supports continuous development and active participation by providing instant feedback to students. In a study by Kovalenko and Skvortsova (2022), it was found that using technology-based educational games in language teaching increased student engagement, and vocabulary, grammar, and speaking skills were taught in a more interactive and enjoyable manner. The research findings show that game-based learning provides instant feedback, which contributes to more permanent language learning and deeper understanding. This supports the idea that games, through technology, can be used as an effective pedagogical tool that fosters

active participation and improves overall language proficiency in foreign language education. According to Malhiwsky (2010), the research confirms that Web 2.0 tools reinforce students' academic achievements and increase their learning motivation. The findings show that participation in Web 2.0-supported lessons significantly improves students' language skills, comprehension, and communication abilities. Pre-test and post-test results show a marked improvement in students' linguistic competencies. This finding supports the role of Web 2.0 tools in enhancing and developing language skills by aligning with interactive and participatory learning processes. Additionally, it was found that Web 2.0-supported lessons had a meaningful relationship with students' sense of community and their level of engagement in the classroom. This result not only shows the effect of digital tools on language teaching but also highlights their potential to strengthen interaction and the sense of community in the classroom. According to the research by Shih (2011), Web 2.0 tools, particularly peer assessment conducted through Facebook, play an important role in developing students' language skills in English writing courses. Gou's (2023) study shows that mobile applications, as Web 2.0 tools, can be effectively adapted in the educational environment, especially in the context of English learning. The results of the study show that the experimental group participants scored higher on the final exam compared to the control group, indicating the potential of mobile learning technologies to enhance student success. This finding suggests that mobile applications not only support students' academic achievements but also increase students' interest in interactive learning in online collaboration processes. The research conducted by Abusamra and Triwiyanto (2023) shows that participants shared similar positive perceptions about the usefulness of Web 2.0 tools. They mentioned that these tools contributed to the language learning process and were beneficial in interactions with their teachers and peers. They also noted that Web 2.0 tools made learning more enjoyable, diverse, and comfortable, while also contributing to creativity and innovation. These findings show that Web 2.0 technologies support interaction and collaboration in language learning, positively effecting students' learning processes.

Looking at the overall research in the literature, it is observed that the increase in academic success after instruction using Web 2.0 tools for the experimental group is greater compared to the control group, which underwent the learning process through traditional teaching methods. This finding leads to the conclusion that teaching that incorporates Web 2.0 tools is more effective in terms of students' academic success.

Additionally, in the study, the effect of Web 2.0 tools on students' academic achievements in English language teaching was examined, taking gender as a variable into account. When the final test results of the experimental group were analyzed in terms of gender, a significant difference was found between the academic achievements of female and male students. However, no change was observed in the final test results of the control group students. This suggests that careful consideration is needed before making generalizations, and it is thought that there could be multiple reasons for this. In this context, topics such as the effect of gender on students' academic achievements and how this effect changes under different teaching methods should be examined in more detail. These findings highlight the importance of considering students' different characteristics and needs. The findings of Özdemir and Eren (2024) also support the results of this study. Based on the conclusions of the research, it was found that the use of Web 2.0 tools in Science lessons did not have a significant effect based on students' gender. In Yıldırım's (2020) study, no significant change was observed between the final test results of male and female students in both groups. In conclusion, this shows that students in both the experimental and control groups did not perform differently based on gender. In Mert and Şen's (2019) study, the potential difference in pre-test and post-test scores based on gender in lessons where Web 2.0 tools were applied to the experimental group and traditional teaching methods were applied to the control group was investigated. In this study, it was concluded that the gender factor did not create any difference in the final test scores of the experimental and control group students. In the research of Buluş Kırıkkaya et al. (2016), there was no significant difference in the achievements of male and female students in both the experimental and control groups. Based on these findings, it can be said that gender does not

have any effect on students' academic success in the applications made in both the experimental and control groups. According to the results of Ocak (2015), no significant change was found in the final test scores of the control group and experimental group students based on the gender variable. The findings of Wen-Hao et al. (2013) reveal that, particularly, female university students experience more anxiety than male students when using Web 2.0 applications. Male students, on the other hand, were found to use Web 2.0 tools more effectively, benefiting more from these tools, and consequently achieving higher success compared to female students. The findings of the study by Vella et al. (2016) also emphasized the gender factor among various factors influencing academic success in courses conducted using Web 2.0 tools. It was particularly highlighted that, at younger ages, women are more successful than men, but as age increases, the learning gap between genders becomes less pronounced. This suggests that both age and gender play an important role in students' achievement levels, and that the gender gap may decrease without being as prominent as age progresses. According to the study conducted by Yussiff et al. (2013), both genders reached similar levels of success after instruction using Web 2.0 tools, showing equal performance in developing academic writing skills. No significant difference was found between male and female students in academic writing skills. This finding indicates that gender is not a determining factor in academic writing skills, and that Web 2.0 tools provide equal support and effectiveness as a learning aid for both genders. The findings of the study conducted by Wei et al. (2013) point to gender differences in the use of Web 2.0 tools. Specifically, it was observed that female students used Web 2.0 tools more than male students and achieved higher success in the courses they worked on using these tools. This situation suggests that female students' academic success may be more closely related to the role of technology in education. As a result, it has been concluded that the effect of the gender variable on students' English achievement is complex and is an important factor that should be carefully considered during the teaching process.

In line with the results of the study, some recommendations are presented for the development of more effective methods and strategies in English language teaching:

- Web 2.0 tools can be integrated with curricula to enhance the delivery of lesson content more effectively. Educators can use these tools in their lessons to help students better understand the topics being taught.
- Educators can support the learning process by creating materials that cater to students' learning needs. These materials can be designed to capture students' interest and enhance their learning experience.
- In addition to the tools used in this study, such as Wordwall, Quizizz, and Edpuzzle, there are various other Web 2.0 tools available. These tools can also be tested and implemented to improve students' educational experiences.
- This research has proven that the use of Web 2.0 tools in English lessons increases students' academic success. Inspired by the findings of this study, Web 2.0 tools could be effectively used in other subjects and disciplines to enhance students' academic performance.
- The study shows that the use of Web 2.0 tools is more effective than traditional teaching methods. Therefore, moving away from traditional methods and experimenting with new methods that engage students and facilitate learning can be a good approach.
- Although this study was conducted with secondary school students, Web 2.0 tools can be used with students at different educational levels. These tools can support the learning process of students across various age groups, from primary school to university.
- In this study, tools such as Wordwall, Quizizz, and Edpuzzle were used. Given the limited number of studies on the effect of Web 2.0 tools on academic success, researchers can investigate different tools to fill this gap in the field.

- In this research, secondary school students participated, and only the "Human in Nature" unit of the English curriculum was considered. Researchers could explore the effect of Web 2.0 tools in different educational levels and across other subjects, which would increase the generalizability of the findings.
- Researchers can conduct a more comprehensive examination of the potential effects of gender on the use and effect of Web 2.0 tools.

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An Investigation into the EFL Teachers' Self-Efficacy Beliefs and Their Individual Innovativeness Levels[1]

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Abstract
Teacher self-efficacy and individual innovativeness in English language teaching are critical concepts in regard to improving the quality of education and supporting teachers' professional development. Accordingly, this study aims to investigate the relationship between English language teachers' self-efficacy and individual innovativeness levels and the predictive effect of self-efficacy on individual innovativeness. In addition, it is also examined whether teacher self-efficacy and individual innovativeness variables differ in terms of gender, age, and seniority year, faculty of graduation, educational status, school level worked at, and type of school demographic variables. The research was conducted in accordance with the correlational research model. "Teacher Self-Efficacy Scale" and "Individual Innovativeness Scale" were used as the instruments of gathering the data. The sample of the study consisted of 306 participants, who volunteered to take part in the study and who were working as English teachers in educational institutions in Istanbul. Of the teachers, 199 (65%) were female and 107 (35%) were male. To analyze the data, IBM SPSS Statistics 22 program was used. The findings of the study show that there is a moderate positive relationship between English language teachers' self-efficacy beliefs and individual innovativeness levels. At the same time, English language teachers' self-efficacy beliefs explain 18% of individual innovativeness.

Keywords: teacher, EFL teacher, teacher self-efficacy, individual innovativeness

INTRODUCTION

Undoubtedly, teaching constitutes the pivotal part of an education system. It is not possible for a school to function without a teacher. With the development of educational technologies, it is important for teachers to keep up with these developments in the organization of teaching and to feel themselves adequate (Erden, 2009). Teachers' ability to acquire the competencies required by the teaching profession stems from their belief that they can fully fulfill their tasks and responsibilities as well as having a good education (Yılmaz, Köseoğlu, Gerçek and, Soran, 2004). Therefore, one of the most important factors affecting teachers' performance is their beliefs about whether or not they are professionally competent enough in order to carry out this job. (Berkant, 2017). This can be expressed as teacher self-efficacy (TSE) perception. TSE beliefs are defined as their expectations about their capability to influence students' performances (Ashton, 1984). Teachers with high self-efficacy perception are more open to innovations and can use most of their time in the classroom for academic learning and provide the necessary guidance to learners (Gibson and Dembo, 1984; Guskey, 1988). An innovative teacher is expected to be able to improve himself/herself in his/her field, increase the quantity of activities in which his/her learners can participate in accordance with the developing teaching strategies and the activities needed, try new approaches and ways in presenting information, apply various methods to increase learner participation, and implement new abilities by changing habits (Ritchhart, 2004). The fact that teachers, who are the key figures in the formation of the knowledge society, are open to innovations, follow social developments, constantly update

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themselves and have lifelong learning skills play a vital role in the students they will raise to acquire these competencies (Yenice and Tunç, 2019).

Purpose of the Research

The purpose of this study is to examine the relationship between TSE belief and individual innovativeness level in English language teaching contexts, including demographic variables.

Accordingly, the study has aimed to seek answers to the following research questions:

1. How are English teachers' self-efficacy beliefs?

2. How are English teachers' individual innovativeness levels?

2. Do English teachers' self-efficacy beliefs and individual innovativeness levels differ according to demographic variables (gender, age, seniority year, faculty of graduation, educational status, school level worked at, and type of school)?

3. What is the relationship between English teachers' self-efficacy beliefs and their individual innovativeness levels?

This study is considered to be significant and have a contribution to the field as it focuses on the exploration of EFL teachers' TSE beliefs in relation to a diverse variable such individual innovativeness, which has not been handled for this purpose. In other words, conducting this research is also important with regard to expressing how TSE is linked to the tendency to adopt innovative methods and technologies. This may provide ideas to stakeholders working in the field of education on how to promote change and development in education systems. Finally, it can be considered that the findings obtained from this research have a crucial importance in terms of supporting the professional development of individual innovators and teachers in education.

LITERATURE REVIEW

Teacher Self Efficacy

The concept of 'self-efficacy', which was first proposed by Bandura (1977) in relation to his social cognitive theory, is defined as an individual's beliefs about what they can do and how they can do it or their beliefs about how well they can take the actions necessary to cope with possible situations. In other words, self-efficacy beliefs are one's perceptions about his capacity to accomplish certain tasks. Bandura (1982) underscores its importance as a factor in shaping an individual's behaviour and refers to an individual's subjective judgment about his/her performance in successfully organizing the skills required to perform behaviour.

TSE refers to a teacher's belief and confidence in using their abilities, knowledge and skills in relation to the teaching profession. This concept directly affects the teacher's performance in learning environments. In other words, TSE is accepted as one of the basic factors of successful teaching and learning process (Hoang, 2018). TSE is about teacher's ability to manage their professional duties, responsibilities and difficulties (Barni, Danioni, and Benevene, 2019). Research shows that high TSE beliefs contribute to their learners' understanding of subjects better and faster (Freiberg, 1998; Gürol, Altunbaş and Karaarslan, 2010). In addition, TSE belief also includes the belief in the teacher's ability to manage the difficulties faced in the educational process (Alzubi, 2013). This concept is related to a teacher's confidence in areas such as applying effective teaching strategies in the classroom, communicating effectively with learners, developing classroom management skills, and increasing student achievement. TSE can affect students' social and academic development (Shahzad and Naureen, 2017). A strong TSE may increase teacher motivation, set a strong example for students, and provide a positive learning environment. This, in turn, can increase students' achievement and strengthen their self-confidence. To increase TSE, teachers should have access to continuous professional development opportunities (Yoo, 2016). However, it is also important to take student feedback into account and be open to continuously improve themselves. In this way, teachers can increase

their self-confidence and guide students more effectively. Teachers' self-efficacy can be enhanced by continuously staying up-to-date and developing themselves about new teaching methods and pedagogical approaches (Hall, Uribe-Flórez, and Rice, 2019), a supportive communication between the management and their colleagues (Aldridge and Fraser, 2016), teachers' regular self-reflection and self-evaluation of their practice (Schunk and Usher, 2011).

Also, there are some basic dimensions of TSE. These include classroom management, teaching competence, interest and motivation, professional development and collaboration, and communication skills. These are the basic components that shape a teacher's self-confidence and professional competence (Berkant, 2017; Yeşilyurt, 2013).

Accordingly, high TSE is a very important skill because teachers with high TSE lead in the classroom, give confidence to students and motivate them by increasing student achievement. This also increases students' academic achievement (Öqvist and Malmström, 2018). When teachers succeed in increasing student interest and engagement, students can be confident. These teachers create a positive learning environment and enable learners to actively take part in the learning process. These skills are effective in solving problems effectively, too (Kılıç, 2019). Teachers with high self-efficacy effectively identify, analyze, evaluate and solve the problems they face. This enables them to respond better to student needs.

Teachers with high self-efficacy continuously improve themselves, acquire new skills and follow current educational trends. This enables them to grow professionally and provide students with a better educational experience. In addition, teacher self-efficacy contributes to creating a positive school culture (Beaudoin and Taylor, 2004). High teacher self-efficacy usually has a positive impact on the general atmosphere in the school. Teachers' confidence and leadership can increase the motivation of students, other teachers and school staff and create a positive school culture.

Teachers who have high self-efficacy are confident in themselves, which is important for a teacher to set an example for students and lead in the classroom (Dierking and Fox, 2013). Also, they have the ability of flexibility and adaptability. Being adaptable and flexible to student differences refers to the teacher's ability to respond to this diversity as each student has different learning styles, needs, strengths and weaknesses (Felder and Brent, 2005). Teachers with high self-efficacy are motivated and eager to continuously improve themselves and be open to new learning opportunities (Moè, Pazzaglia, and Ronconi, 2010), can understand students and communicate effectively with them (Mottet, Beebe, Raffeld, and Medlock, 2004), have the ability to cope with challenges and find effective solutions to various problems is another factor that increases teachers' self-efficacy (Yost, 2006).

In terms of EFL teachers' self –efficacy beliefs, Faez and Karas (2017) stated that using English in the classroom as the content and the language to convey provided an exceptional situation to EFL teachers. EFL teacher's self efficacy beliefs can be defined as teacher's perceptions that how well they can teach English effectively (Thompson, 2016). As foreign language teaching and learning is different from other types of teaching and learning, more focus should be placed on how students grow in self-efficacy and what influences it in circumstances involving foreign languages (Raoofi, Tan, and Chan, 2012).

Individual Innovation in Teaching

Education is one of the cornerstones of individual innovation (Kangas, Korhonen, and Salo, 2022). Education increases people's innovation potential by enabling them to develop their knowledge and skills. Countries that recognize innovation have been using various innovative learning methods for a long time. These include the use of technology tools in education, interactive and project-based teaching, e-learning applications, creative methods such as design and robotic coding, game-based learning, museum and fair visits (Su, Guo, Chen, and Chu, 2023).

In this regard, individual innovation in teaching refers to teachers developing and implementing new and creative approaches in the classroom and throughout the school (Shermukhammadov,

2022). This understanding encourages teachers to develop and use teaching methods and materials that are appropriate to students' needs and learning styles. Teachers' individual innovativeness can manifest itself in a wide range of areas, from classroom interaction to student assessment (Kahraman, 2020). Individual innovativeness can be manifested through practices such as teachers conducting research in their fields, using new instructional technologies, trying different strategies to motivate students, and creating student-centered learning environments (Thurlings, Evers, and Vermeulen, 2015). In other words, innovation in teaching diffuses and changes to meet the various pedagogical needs of different classroom environments (Widdowson, 1993). At the same time, teachers' continuous self-improvement by attending in-service trainings and collaborating with their colleagues is also a part of individual innovativeness (Atlı, 2019). In this way, teachers can provide a more effective and meaningful education to their students.

Specifically, English teachers' individual innovativeness focuses on developing more effective and creative teaching methods that transcend traditional approaches to language teaching (Hyland and Wong, 2013). These may include student-centered teaching techniques, communication-oriented approaches, gamification methods, technology-assisted learning, and teaching strategies that take into account different learning styles. English teachers try to provide individual learning experiences by customizing the language learning process according to students' needs and interests (Blaz, 2013). For example, they may use teaching methods supported by technological tools such as language learning apps, online learning platforms, digital storytelling tools and virtual classroom environments. Hence, there are a large number of accounts of attempts to change the aspects of foreign language teaching methodology and materials, as well as initiatives concerned with teacher training (Waters, 2009).

Consequently, English language teachers keep abreast of innovations in the area of language teaching and continuously update their own instructing practices by attending in-service trainings (Gençer, Taşyürek, Duran, and Ulukaya, 2023). In this way, they can introduce innovative teaching methods and materials which allow learners to develop their language skills more efficiently.

As a result, it is urgent to train innovative and adaptable prospective teachers who can use technological opportunities together with pedagogical approaches and accordingly, to update teacher competencies within the framework of information society requirements (Çuhadar, Bülbül, and Ilgaz, 2013). Teachers' high self-efficacy enables them to be more open to trying and implementing innovative practices while lecturing in the classroom or fulfilling their teaching role outside the classroom. This is also important as it enables students to have more effective and engaging learning experiences. Moreover, a teacher's adoption of individual innovativeness contributes to a faster and more effective integration of educational technologies and new pedagogical methods into the educational system. Therefore, this kind of research can also provide important clues for improving educational policies and teacher education programs. Furthermore, understanding how self-efficacy predicts individual innovativeness has a prominent function in the designing of teacher professional development programs. Preparing programs to increase teachers' self-efficacy can increase their innovative thinking and practices. In conclusion, understanding which characteristics of teachers influence individual innovativeness in teachers can shed light on the content of all kinds of policies and studies to be conducted for teachers in the education system.

Related Studies

When the literature on the concepts in question is searched, it is seen that both self-efficacy and individual innovativeness have been separately the research issue of various studies with different variables. Smith (2019) examined the dispositional and situational factors affecting teacher self-efficacy, work-related stress and professional burnout on the road to burnout. According to the results obtained from the study, there is a negative relationship between job stress and self-efficacy. In a study conducted by Li (2023), the effects of teacher self-efficacy,

teacher resilience and emotion regulation on teacher burnout were examined. According to the findings of the research, teacher self-efficacy and teacher resilience show a direct and negative relationship with teacher burnout. Hölscher, Gharaei, Schachner, Ott, and Umlauft (2024) examined the effects of supporting students in culturally diverse classrooms on teacher self-efficacy, stress, and job satisfaction. The data from the study suggest that teachers who are more concerned about appearing racist also experience more stress and less self-efficacy in teaching in culturally diverse classrooms.

Alibakhshi, Nikdel, and Labbafi (2020) examined the English teaching self-efficacy of non-native EFL teachers in their study. The themes created according to the results of the study are; burnout, pedagogical and student-related. The study deduced that high TSE affects teachers' teaching styles, students' interest and success. It also affects teachers' burnout, mental state and job satisfaction. Xiyun, Fathi, Shirbagi, and Mohammaddokht (2022) investigated the relationships between TSE, emotion regulation, and psychological well-being in EFL teachers. The findings of the study showed that both TSE and emotion regulation were notable signs of teachers' psychological well-being. However, TSE is a variable that predicts psychological well-being more strongly compared to emotion regulation. In their study, which aimed to explore native and non-native EFL teachers' beliefs about teaching English, Tajeddin, Atai, and Shayeghi (2019) concluded that native EFL teachers were better in using the language more authentically, teaching cultural elements while non-native EFL teachers had superiority over native ones in terms of understanding the students' challenges and helping them as they experienced similar difficulties. Hoang (2018), reviewing twenty seven studies on TSE beliefs of EFL teachers, concentrated on examining these studies in terms of some features such as research types, context of the research, and method of these studies. One of the most important findings in his study was that most of the studies on this issue were conducted in Middle Eastern countries. Similarly, Wyatt (2018) examined more than 155 studies and found that the majority of the studies made in Asia. Wyatt (2021), in his review study, in which he aims to make a connection between language learner self-efficacy and language teacher self-efficacy, underlining that teaching includes the process of learning, emphasizes that TSE beliefs of non-native-speaking language teachers should be searched in relation to L2 proficiency. He also suggests that TSE beliefs of in-service language teachers should also be explored in terms of their skills to make the learners autonomous. In their study, Rashidi and Moghadam (2014) revealed a positive but insignificant correlation between EFL teachers' SE beliefs and learners' satisfaction Moreover, there is a significant correlation between EFL teachers' self-efficacy and their classroom management skills (Lap, Lien and Thao (2022). TSE affects positively theirs classroom management skills (Hicks, 2012).

In reference to the studies on TSE beliefs in Turkish contexts, in a study conducted by Aka (2014), the relationship between school climate and TSE was examined. In accordance with the results of the study, it is seen that there is a moderate positive relationship between high school teachers' perceptions of school climate and TSE. In a study carried out by Memiş (2021), the relationship between teachers' styles of managing conflicts with colleagues and TSE was examined. The results obtained from the study indicate a satisfying relationship between teacher conflict management styles and TSE. Köstekçi (2023) examined the relationships between instructional leadership, teacher reflection behaviour and TSE. The results show that there is a low and positive relationship between instructional leadership behaviours and TSE. In addition, teacher reflection behaviours were found to mediate the relationship between principal instructional leadership expectations and TSE.

As concerns the studies on teachers' II levels, Evers, Brouwers and Tomic (2002) examined the relationship between teachers' burnout and self-efficacy in an individual innovative education system in a study conducted on teachers working in the Netherlands. Finally, teachers' self-efficacy beliefs were found to be related to their burnout levels. Teachers with determined self-efficacy beliefs seem to be more willing to try and then fulfil new educational practices. Gomes, Curral, and Caetano (2015) examined the relationship between individual innovativeness and

self-leadership and tested the mediating effect of workplace engagement in this relationship. The results also revealed that work engagement has a mediating effect on the relationship between personal leadership and individual innovation. In general, this research shows that personal leadership and work engagement contribute to individual innovation. Sturmer, Seidel, and Holzberger (2016) applied an innovative teacher training program for the development of professional vision for pre-service teachers and examined its effect with experimental methods. When the content of the developed program is examined, it is observed that it is a program for gaining skills for the ability to reason about classroom situations. In the program, the three dimensions of this ability, namely defining, explaining and predicting classroom situations, were addressed separately. This study investigated whether an innovative teacher education program (integrating theory and practice) resulted in individual differences in pre-service teachers' professional visions, whether these differences led to different changes, and whether participation in the program led to similar individual developments. According to the results of the study, there was a linear growth and increase in all three skills during the program. Moreover, Tampi, Binilang, Rawis, and Londa (2019) examined the relationships between teachers' performance and individual innovativeness, trust, and job satisfaction. The study showed that there is a strong relationship between teachers' performance and innovativeness, confidence, and occupational gratification. Moreover, innovativeness, trust and job satisfaction are positively and significantly based on teachers' performance. In another study handled by Kilag et al. (2024), the transformational leadership and individual innovativeness in education were correlatively examined. The results of the study suggest that transformational leadership has a crucial role in fostering and encouraging educational innovation in schools.

As regards to the studies on II levels of teachers in Turkish context, in a study carried out by Koşum (2023), the relationship between teacher leadership and individual innovativeness variables was examined. The individual innovativeness of teachers varied significantly according to their age, length of service and branches. Finally, there is a moderate positive relationship between teachers' individual innovativeness and leadership levels. Üstün (2023) investigated the relationship between individual innovativeness and digital citizenship variables in his research. The study reveals that the individual innovativeness situations of the participants differ depending on age and there is a significant positive relationship between digital citizenship and individual innovativeness levels. Uçar (2024) examined the relationship between teachers' individual innovativeness levels and their perceptions of learning schools. In addition, it was also examined whether teachers' individual innovativeness levels were affected by school perceptions, school level, number of teachers in the school, education level, and professional seniority. The findings of the study show that individual innovativeness in teachers differs according to factors such as teachers' age, educational level, number of teachers, professional and school seniority. It was concluded that teachers' school perceptions and individual innovativeness levels had a low level positive relationship.

METHOD

Research Model

This study focuses on investigating the predictive connection between self-efficacy and individual innovativeness along with the relationship between self-efficacy beliefs and individual innovativeness levels among EFL teachers. Thus, one of the quantitative research techniques that were used for this study was the correlational research model. This model is a research model that examines, without intervention, the link between many variables (Karasar, 2014). The correlational survey model uses a correlation coefficient to show the relationship or influence between two distinct quantitative variables (Frankel, Wallen, and Hyun, 2012). Examining whether the variables change together or how a change happens is the primary goal of correlational research.

Sample of the Study

The participants of the research were EFL teachers employed in Istanbul. The study's sample size was determined using Cattel's (1978) recommendation to reach a sample five times the total number of items in the inventory. As a result, 306 English teachers who willingly took part in the survey and gave their informed consent constituted the study's sample. A convenience sampling approach was chosen to obtain the sample for the study. Convenience sampling involves choosing a sample from readily available and suitable units because of time, financial, and labour constraints. (Karasar, 2014). This sample technique has a number of intrinsic advantages, such as being inexpensive, time-efficient and easy to use (Stratton, 2021; Golzar, Noor and Tajik, 2022). Details regarding the participants are shown in Table 1.

Table 1.The participant variables

Variables	Subcategory	f	%
Gender	Female	199	65.0
	Male	107	35.0
Age	20-30	68	22.2
	31-40	162	52.9
	41 and over	76	24.8
Seniority year	1-10 years	139	45.4
	11-20 years	125	40.8
	21 years and over	42	13.7
Faculty of graduation	Education	201	65.7
	Science and Letters	105	34.3
Educational status	Bachelor	251	82.0
	Master	55	18.0
School level	Primary school	73	23.9
	Middle school	97	31.7
	High school	136	44.4
Type of school	Public	226	73.9
	Private	80	26.1

Table 1 shows that 199 (65.0%) of the 306 English teachers in the study were female while 107 (35.0%) were male. Of the English teachers, 68 (22.2%) were between 20-30, 162 (52.9%) were between 31-40, and 76 (24.8%) were 41 years old and above. With respect to the experience of English teachers, 139 (45.4%) of the participants had 1-10 years of seniority, 125 (40.8%) had 11-20 years of seniority, and 42 (13.7%) had 21 years or more seniority. While 201 (65.7%) English teachers graduated from the faculty of education, 105 (34.3%) graduated from the faculty of science and letters. While 251 (82.0%) of the English teachers have bachelor's degrees, 55 (18.0%) of them have master's degrees. Furthermore, 73 (23.9%) of the English teachers are employed at primary school level, 97 (31.7%) at secondary school level, and 136 (44.4%) at high school level. Eventually, 226 (73.9%) of the English teachers work in public schools, while 80 (26.1%) work in private schools.

Instruments

The data collection instruments of the study are "Teacher Self-Efficacy Beliefs Scale" and "The Individual Innovativeness Scale". The permission for using the scales was taken from the authors via e-mail.

TSEB Scale was developed by Çolak, Yorulmaz, and Altınkurt (2017). In the study, the 4-factor and 27-item structure of the scale was confirmed. These factors are Professional, Social, Academic, and Intellectual Self-Efficacy. The scale is scored on a 5-point Likert scale. The confirmatory factor analysis values of the scale were found to have acceptable fit; RMSEA = .06, AGFI = .82, GFI = .85, RMR = .03, SRMR = .06, CFI = .97, NFI = .95 and NNFI = .97. However, the χ2/sd ratio was found to be 2.12. The internal consistency coefficient of the scale was calculated as .93.

The Individual Innovativeness Scale, which was originally developed by Hurt, Cook and Joseph (1977) was adapted into Turkish by Kılıçer and Odabaşı (2010). The scale, which consists of 20-item, and scored on a 5-point likert scale, has four sub-dimensions such as "Resistance to change", "Opinion leadership", "Openness to experience" and "Risk taking". The internal consistency coefficient for the overall scale was 0.82. The test-retest reliability coefficient is 0.87.

Data Collection and Analysis

Ethics committee permission was granted from the Social and Human Sciences Research Ethics Committee of the university. (The permission date is 29.09.2023 and number is 2023-758). After obtaining the necessary permission, the inventory was applied by the researcher to English teachers in Istanbul. English teachers were informed about the research and their voluntary participation was ensured. After consent was taken, the scale inventories were completed in a paper-and-pencil method.

While analyzing the data of the study, first descriptive statistics and normality assumptions were examined. Then, the relationship between variables was analyzed with the Pearson correlation coefficient. In addition, given that the data were normally distributed for the difference tests, the One-Way ANOVA Test and Independent Groups T-Test were analyzed. The predictive relationship between the variables was analyzed by simple linear regression analysis.

Table 2.Descriptive statistics

Variables	N	Crα	X̄	SD	Skewness	Kurtosis
Self-efficacy beliefs	306	.895	119.00	21.98	-1.22	1.11
Individual innovativeness	306	.981	69.04	12.14	-.27	.10

It is seen in table 2 that the skewness and kurtosis values for teacher self-efficacy belief (S = -1.22, K= 1.11) and individual innovativeness (S = -.27, K = .10) variables. The results show that the skewness and kurtosis values are within the range of ±1.5 and thus the data set shows a normal distribution (Tabachnick and Fidell, 2013). However, the arithmetic means and standard deviation of the scores obtained from the scale of EFL teachers' self-efficacy beliefs were calculated as X̄ = 119.00 and SD=21.98, respectively. The Cronbach's Alpha value in this current study was calculated as Crα = .895. The arithmetic mean of the scores on the individual innovator scale was calculated as X̄ = 69.04 and the standard deviation was calculated as SD = 12.14. The Cronbach's Alpha value in this study was calculated as Crα = .981.

FINDINGS

Analyses of the TSE belief Scale

The information gathered with the TSEBS analysis is shown in this section. In this case, it was investigated whether the TSEBS scores of the study group of English teachers varied based on their demographic characteristics (gender, age, seniority year, faculty of graduation, educational status, school level worked at, type of school worked at).

Table 3. T-test results for the TSE beliefs and the 'gender' variable

						t-test		
Variable	Groups	N	X̄	SD	SE	*t*	df	*p*

Self-Efficacy Beliefs	Female	199	109.67	23.30	1.65	-2.585	304	.010
	Male	107	116.00	18.71	1.81			

As seen in table 3, it was analyzed whether the scores of the English language teachers in the study group from the TSEBS differed based on the gender variable. As a result of the Independent Groups T-Test, the arithmetic mean difference of TSE beliefs showed a significant difference according to gender (t = -2.585; p < .05). It is found that this is in favor of male English teachers. As a result, male English teachers have significantly higher TSE beliefs than female English teachers.

Table 4. One-Way ANOVA results for the TSE beliefs and the 'age' variable

Variable	Group	N	X̄	SD		Sum of Squares	df	Mean Square	*F*	*p*
Self-Efficacy Beliefs	20-30	68	113.60	19.73	Between groups	277.767	2	138.89	.286	.751
	31-40	162	111.20	23.15	In-group	147096.00	303	485.47		
	41-50	76	111.80	21.52	Total	147373.76	305			
	Total	306	111.88	21.98						

As illustrated in table 4, the difference between the arithmetic means of the groups was examined by One-Way ANOVA to determine whether the scores for the TSE beliefs differed in terms of age variable. As stated in the results of One-Way ANOVA, there is no meaningful difference in TSE beliefs according to age (F = .286; $p > .05$). As a result, TSE beliefs of EFL teachers do not diverge based on age.

Table 5. One-Way ANOVA results for the TSE beliefs and the 'seniority year' variable

Variable	Group	N	X̄	SD		Sum of Squares	df	Mean Square	*F*	*p*
Self-Efficacy Beliefs	1-10	139	110.96	23.03	Between groups	271.33	2	135.667	.279	.756
	11-20	125	112.98	20.86	In-group	147102.43	303	485.3487		
	21-30	42	111.88	22.06	Total	147373.77	305			
	Total	306	111.88	21.98						

As seen in table 5, in order to determine whether the scores related to the TSE beliefs differed in terms of the 'seniority year' variable, the difference of the arithmetic means of the groups was examined by One-Way ANOVA. In line with the results of One-Way ANOVA, there is no significant difference in English teachers' self-efficacy beliefs according to seniority year (F = .756; $p > .05$). As a result, TSE beliefs do not vary depending on the seniority year.

Table 6.T-Test results for the TSE beliefs and the 'faculty of graduation' variable

						t-test		
Variable	Groups	N	X̄	SD	SE	*t*	df	*p*
Self-Efficacy Beliefs	Education	201	111.87	20.48	1.44	.003	304	.997
	Science and Letters	105	111.88	24.71	2.41			

As seen in table 6, it was analyzed whether the scores related to TSE beliefs differed according to the 'faculty of graduation' variable. As a result of the Independent Groups T-, it was found that the arithmetic mean difference of English teachers' self-efficacy beliefs did not show a significant difference according to the faculty of graduation variable (t=.003, p>.05). As a result, English language teachers' self-efficacy beliefs do not vary depending on the faculty of graduation variable.

Table 7. T-Test results for the TSE beliefs and the 'educational status' variable

						t-test		
Variable	Groups	N	X̄	SD	SE	*t*	df	*p*
Self-Efficacy Beliefs	Undergraduate	251	111.92	21.31	1.35	.064	304	.949
	Master	55	111.71	25.04	3.37			

As displayed in table 7, it was analyzed whether the 'educational status' variable made a difference in TSE beliefs of the teachers. As a result of the Independent Groups T-Test, the arithmetic mean difference of English teachers' self-efficacy beliefs did not show a significant difference according to the educational status variable (t=.064, p>.05). As a result, EFL teachers' TSE beliefs do not vary depending on the 'educational status' variable.

Table 8.One-Way ANOVA results for the TSE beliefs and the 'school level' variable

Variable	Groups	N	X̄	SD		Sum of Squares	df	Mean Square	*F*	*p*
Self-Efficacy Beliefs	Primary school	73	111.85	22.15	Between groups	157.525	2	78.762	.162	.850
	Middle school	97	112.87	21.51	In-group	147216.24	303	485.862		
	High school	136	111.20	22.35	Total	147373.77	305			
	Total	306	111.88	21.98						

As seen in table 8, to determine whether the 'school level' variable made a difference in TSE beliefs of the teachers, the difference of the arithmetic means of the groups was examined by One-Way ANOVA. As per the results of One-Way ANOVA, there is no significant difference in English teachers' self-efficacy beliefs according to school level worked at (F = .162; $p > .05$). As a result, TSE beliefs of the EFL teachers do not vary depending on the 'school level' variable.

Table 9. T-Test results for the TSE beliefs and the 'school type' variable

						t-test		
Variable	Groups	N	X̄	SD	SE	*T*	df	*p*
Self-Efficacy Beliefs	Public	226	110.23	22.08	1.47	-2.218	304	.027
	Private	80	116.54	21.15	2.36			

As clarified in table 9, it was analyzed whether the scores of the EFL teachers' TSE beliefs differed pursuant to the 'school type' variable. As a result of the Independent Groups T-Test, it was found that the arithmetic mean difference of EFL teachers' TSE beliefs showed a significant difference according to school type (t = -2.218; p < .05). And this is in favor of English teachers working in private schools. As a result, TSE beliefs of EFL teachers working in private schools are significantly higher than those of the EFL teachers working in public schools.

Analyses of the Individual Innovativeness Scale

The analyses of the Individual Innovativeness (II) Scale was made to determine whether the related scores varied in terms of the demographic characteristics of the teachers (gender, age, seniority year, faculty of graduation, educational status, school level, type of school).

Table 10. T-Test results for the II and the 'gender' variable

						t-test		
Variable	Groups	N	$\bar{X}$	SD	SE	*t*	df	*p*
Individual Innovativeness	Female	199	68.58	11.48	.81	-.907	304	.365
	Male	107	69.90	13.28	1.28			

As shown in table 10, it was analyzed whether the scores related to the EFL teachers' II levels differed according to the gender variable. As a result of the Independent Groups T-Test, it was seen that the arithmetic mean difference of English teachers' II levels did not differ according to the 'gender' variable (t = -.907, p > .05). Consequently, it seems that the 'gender' variable did not make a difference in English teachers' II levels.

Table 11. One-Way ANOVA results for the II and the'age' variable

Variable	Group	N	$\bar{X}$	SD		Sum of Squares	df	Mean Square	*F*	*p*
Individual Innovativeness	20-30	68	68.90	9.94	Between groups	1016.08	2	508.04	3.506	.031
	31-40	162	70.49	12.62	In-group	34903.44	303	144.90		
	41-50	76	66.07	12.45	Total	44919.53	305			
	Total	306	69.04	12.14						

As demonstrated in table 11, the difference between the arithmetic means of the groups was examined by One-Way ANOVA to determine whether the scores of the IIS of the English language teachers constituting the study group differed in terms of age variable. In accordance with the results of One-Way ANOVA, there is significant difference in English teachers' individual innovativeness levels according to age (F = 3.506; p < *.05).* Complementary analyses were conducted to examine which group was in favor of the significant difference. At this stage, the homogeneity of the variances was first checked by Levene's test. As a result of Levene's test, it was understood that the data were homogeneous (L = 2.216; p > .05). Scheffe test (Kirk, 1968), which gives the best results in groups with homogeneous data, was preferred as the Post Hoc test.

Table 12. Scheffe test results

Groups (i)	Groups (j)	$\bar{X}_{(i)} - \bar{X}_{(j)}$	$SE_{\bar{x}}$	*p*
20-30	30-40	-1.597	1.739	.657
	40-50	2.831	2.009	.372
31-40	20-30	1.597	1.739	.657
	40-50	4.428*	1.673	.031
41-50	20-30	-2.831	.372	.372
	30-40	-4.428*	.031	.031

*p < .05

As seen in table 12, Scheffe's Test was use to determine in what way the teachers' II level scores varied according to their age ranges. As reported by the results of the analysis, it was seen that there was a difference between the 30-40 age group and the 41-50 age group. The difference between these two groups is in favour of the 30-40 age group (i-j = 4.428; $p < .05$). There is no arithmetic and statistical difference between the other groups ($p > .05$).

Table 13. One-Way ANOVA results for the II and the 'seniority year' variable

Variable	Group	N	X̄	SD		Sum of Squares	df	Mean Square	*F*	*p*
Individual Innovativeness	1-10	139	69.38	11.39	Between groups	274.40	2	137.198	.931	.395
	11-20	125	69.45	12.28	In-group	44645.13	303	147.344		
	21-30	42	66.67	13.96	Total	44919.53	305			
	Total	306	69.04	12.16						

As seen in table 13, in order to determine whether the teachers' II level scores differed in terms of the 'seniority year' variable, the difference of the arithmetic means of the groups was examined by One-Way ANOVA. The results showed that there is no meaningful difference in English teachers' II levels according to the 'seniority year' variable. ($F = .931$; $p > .05$). As a result, English language teachers' individual innovativeness does not vary depending on the seniority year.

Table 14.T-Test results for the II and the' faculty of graduation' variable

						t-test		
Variable	Groups	N	X̄	SD	SE	*t*	df	*p*
Individual Innovativeness	Education	201	68.94	11.67	.82	-.197	304	.844
	Science and Letter	105	69.23	13.03	1.27			

As illustrated in table 14, the teachers' II level scores were analyzed according to the faculty of graduation variable. As a result of the Independent Groups T-Test, it was seen that the arithmetic mean difference of English teachers' individual innovativeness levels did not change according to the faculty of graduation ($t = -.197$, $p > .05$). As a result, it can be noted that the 'faculty of graduation' variable did not make a change in their II level scores.

Table 15. T-Test results for the II and the 'educational status' variable

						t-test		
Variable	Groups	N	X̄	SD	SE	*t*	df	*p*
Individual Innovativeness	Bachelor	251	68.78	11.93	.75	-.795	304	.527
	Master	55	70.23	13.08	1.76			

As indicated in table 15, the teachers' II level scores were analyzed according to the 'educational status' variable through the Independent Groups T-Test. It was seen that the arithmetic mean difference of English teachers' individual innovativeness levels did not differ according to their educational statuses. ($t = -.795$, $p > .05$). As a result, English teachers' individual innovativeness does not change depending on the educational status variable.

Table 16.One-Way ANOVA results for the II and the 'school level' variable

Variable	Groups	N	X̄	SD		Sum of Squares	df	Mean Square	*F*	*p*
Individual Innovativeness	Primary school	73	68.68	12.36	Between groups	141.507	2	70.754	.479	.620
	Middle school	97	69.62	11.51	In-group	44778.02	303	147.78		
	High school	136	68.28	12.50	Total	44919.53	305			
	Total	306	69.04	12.14						

As seen in table 16, One-Way ANOVA was used to detect whether the scores of the teachers' II level differed in terms of the 'school level' variable. The results show that there is no significant difference in the teachers' II levels in the view of school level. (F = .479; $p > .05$). Therefore, it can be indicated that *EFL* teachers' II does not change depending on the school level.

Table 17. T-Test results for the II and the 'type of school' variable

						t-test		
Variable	Groups	N	X̄	SD	SE	*t*	df	*p*
Individual Innovativeness	Public	226	68.35	12.03	.80	-.167	304	.097
	Private	80	70.98	12.29	1.37			

As seen in table 17, the scores of the English language teachers who constitute the study group from the IIS were analyzed according to the type of school. As a result of the Independent Groups T-Test, the arithmetic mean difference of English teachers' individual innovativeness according to type of school was not found to be significant (t = -.167; p > .05). Thus, the individual innovativeness levels of English teachers do not differ depending on whether they work in public or private schools.

Findings of the Correlative Analysis of TSE Beliefs and II levels

Pearson Product Moment analysis was carried out to present whether there is a relationship between the total scores of the teachers' TSE beliefs and the II levels. Also, Simple Regression analysis was conducted to examine the extent to which the teachers' TSE beliefs predicted their II levels. The correlation values for the relationships between EFL teachers' TSE beliefs and their II levels are given in Table 18.

Table 18. The results of Pearson product moment analysis

Variables	1	2
1. Self-Efficacy Beliefs	-	
2. Individual Innovativeness	0.43*	-
Standard Deviation	21.98	12.14
Mean	111.88	69.04

p<.05

As seen in table 18, it is seen that there is a moderate positive and significant relationship between TSE beliefs and individual innovativeness (r = .43, p < .05). As a result, it can be said that as EFL teachers' TSE beliefs increase, their II levels increase, and as their TSE belief levels decrease, their II levels decrease. Since the correlation result was significant, a simple regression analysis was used to test to what extent the EFL teachers' TSE beliefs predict their II levels, and these results are demonstrated in Table 19.

Table 19.Simple regression analysis of TSE beliefs predicting II levels

Variables		b	(β)	R^2	SE	Mean Square	*p*
Self-Efficacy Beliefs ⟶	*Individual Innovativeness*	.24	.43	.18	.03	8.25	.00

As seen in table 19, the direct effect of the teachers' TSE beliefs on their II levels was significant (β = .43, p < .05). In addition, teacher self-efficacy beliefs explained 18% of individual innovativeness levels. As a result, it can be emphasized that TSE beliefs are a prominent predictor for the II levels of EFL teachers.

DISCUSSION

Discussion on demographic variables of EFL teachers' TSE beliefs

The teachers' scores related to their TSE beliefs demonstrate a statistically significant difference in terms of the gender demographic variable. This was found to be in favour of male English teachers. The fact that female teachers have lower self-efficacy compared to male teachers may be due to traditional gender roles and expectations, gender discrimination in the education system and business life. In addition, the fact that female teachers try to balance both home and work load, and that they are evaluated more critically by the society may create anxiety on the performance of female teachers, which may reduce their self-efficacy. On the other hand, in Deneme's study (2022), it was found that EFL teachers' self-efficacy did not display a significant difference in term of gender. The result can be defined by the fact that increasing gender equality perception or participants' personality traits. Unlike our research finding, Veisi, Azizifar, Gowhary, and Jamalinesari (2015) conducted a study on Iranian foreign language teachers and found a statistical difference between genders in teacher self-efficacy, but this difference was in favour of women. This may be due to the complexity of the concept of self-efficacy or the fact that the aforementioned research was conducted in a different culture.

The scores related to the EFL teachers' TSE beliefs do not display a statistically meaningful difference in accordance with the demographic variable of age. This can be accounted by the fact that teachers' professional competencies generally go through similar education and experience processes regardless of age. However, the fact that there is a continuous professional development process in the field of education may allow teachers to maintain their knowledge and skills up to date. Similar to our research finding, Delican and Adıyaman (2021) examined teachers' TSE perceptions towards teaching literacy methods in their research and found that self-efficacy did not differ according to age. This can also be explained by the fact that teachers who have recently graduated from undergraduate education have fresh knowledge, while older teachers feel themselves sufficient by using their experience. However, Tutkun (2017) stated that older teachers' have more self- efficacy and this situation may stem from their experience and social respect. Moreover, Bausch, Michel and Sonntag (2014) revealed that there was a significant relationship between age and self-efficacy in favour of the older ones. On the contrary, Authier (2012) stated that the younger teachers had higher sense of teacher self-efficacy. Also, according to a study conducted by Gkolia, Dimitrios, and Koustelios (2016) teachers' age affect their self-efficacy factors.

The teachers' scores related to their TSE beliefs do not indicate a statistically significant difference in term of the demographic variable of seniority year. Similar to our research result, Oğuz Özcanlı and Bada (2022) find that the EFL teachers' TSE perceptions do not differ with respect to their years of seniority. This result is in parallel with the finding obtained from the age variable. As stated in the analysis of the age demographic variable, the current knowledge that newly graduated teachers have may make the teacher feel competent, while the years of experience of senior teachers may cause them to feel self-efficacious. At the same time, the fact that educational institutions offer similar training and professional development programs for

all teachers regardless of seniority may also explain why self-efficacy does not differ according to seniority. Still, Eker and Seçkin (2022) stated that newly started EFL teachers had higher self-efficacy than the experienced ones owing to the fact that newly started teachers may count on their fresh knowledge and they are excited about teaching. Different from this research finding, Soodak and Podell (1997) examined the relationship between teacher experience and self-efficacy and stated that self-efficacy increased as years of seniority increased. The reason for obtaining a different result from this study may be cultural differences since the study was conducted in another country and a different educational policy was implemented.

The teachers' TSE belief scores do not show a statistically significant difference considering the demographic variable of the faculty of graduation. This can be explained by the fact that teachers graduated from the faculties indicated have a similar degree of competence in English language. At the same time, graduates of the faculties of science and letters can catch up with graduates of the faculties of education regarding teacher self-efficacy since they usually participate in pedagogical formation programs to become teachers. Similarly, Aslan (2019) found that the TSE perception of English teachers does not differ statistically depending on the department of graduation.

The teachers' TSE beliefs do not show a statistically significant difference with respect to the demographic variable of educational status. This can be explained by the fact that basic pedagogical skills and language teaching methods are given in undergraduate education and teachers are given the opportunity to develop in the field of scientific research in master's/doctoral studies. At the same time, self-efficacy in teaching may also be increased by practicing in the classroom. Similar to our research finding, Aslan (2019) found that TSE did not differ according to the level of education achieved. Unlike this study, Şen and Yildiz-Durak (2022) stated in their study that English teachers' technological self-efficacy scores were higher in teachers with postgraduate education than in teachers with bachelor education. Teachers with postgraduate education can follow technological developments while receiving training in scientific research. Moreover, postgraduate education enriches research skills, the motivation for continuous learning, and critical thinking abilities.

As for the teachers' TSE belief scores, they do not show a statistically significant difference based on the demographic variable of school level. This may be because the basic pedagogical knowledge required for teaching is independent of the level of teaching. In addition, the trainings that teachers receive may be generally designed to teach at different levels. Similar to our research results Aygüneş (2023) concluded in his study that teacher efficacy does not vary according to the level at which teachers work. However, Şen and Yildiz-Durak (2022) stated in their study that self-efficacy results differed according to school level and this differentiation is against the secondary education level. Also Ryan, Kuusinen, and Beyoda-Skoog (2015) reported that middle school teachers' self-efficacy in managing peer relationship and classroom was lower than primary school teacher.

The teachers' TSE belief scores reveal a statistically significant difference according to the demographic variable of the school type they work in. This is in favour of the private school type. This difference can be clarified by the fact that private schools have more resources and better technological equipment. This may enable teachers to conduct their lessons with more effective and innovative methods. In addition, the lower class sizes in private schools may cause teachers to feel more competent by paying more attention to students. Similar to our research result, in their study, Kararmaz and Arslan (2014) discovered that among English teachers working in primary schools, those working in private schools had higher TSE. Similarly, Butucha (2013) found that teachers in private schools are more self-efficacious in instructional strategies and overall self-efficacy than their colleagues in the public schools.

Discussion on demographic variables of English teachers' II levels

The scores of English teachers' II levels do not show a statistically significant difference based the gender demographic variable. This can be explained by the fact that individual

innovativeness develops with education and experience rather than gender-related factors. In an environment of collaboration and information sharing, teachers of both genders can freely express their innovative ideas. Similar to our research finding, Li and Chang (2023) found that the II levels of teachers working in China did not differ according to gender. According to this result, it can be thought that both genders have similar characteristics in adopting and spreading individualism. Similarly, Kotsev and Stoycheva (2024) found no significant gender differences in individual attitudes towards innovativeness.

The II level scores of EFL teachers indicate a statistically significant difference depending on the age variable. The difference between the group of English teachers aged 31-40 and the group of English teachers aged 41-50 is in favour of the 31-40 age group. This can be interpreted by the fact that young teachers are educated in a period when technology is more widely used in education and they are more familiar with digital tools and new teaching methods. Also, younger teachers may be more open to change and new methods and more senior teachers may have become accustomed to certain teaching methods and routines over the years. Similar to our research result, Üstün (2023) sought the relationship between individual innovativeness and digital citizenship and stated that individual innovativeness differs according to age. According to the results of the research, this difference was between 25-34 years old and 18-24 years old, and the difference was in favour of 18-24 years old. Similar to our study, the younger group was found to be more innovative.

The demographic variable of seniority year did not make a statistically meaningful difference in the teachers' II level scores. This can be explained by the fact that individual innovativeness is an action based on continuous learning and development. At the same time, a school's or educational institution's attitude towards innovation may also affect leadership style and innovation potential. Similar to our research finding, Atalay-Altaş (2021) examined the critical thinking and II levels of English teachers and found that their II attitudes of English teachers did not differ according to seniority. On the other hand, in his study, Kocasaraç (2021) found that the II levels of the teachers differed according to the 'seniority' variable, and it was discovered that the TSE beliefs of the teachers with 6-10 years of teaching practice was lower than those of the teachers with other seniority.

The teachers' II level scores do not exhibit a statistically significant difference according to the demographic variable of faculty of graduation. This can be explained by the fact that both the teachers who graduated from the faculty of science and letters, and the teachers who graduated from the faculty of education were able to provide students with similar skills related to teaching and learning processes although they received education in different disciplines. In addition, individual innovativeness in teaching may be shaped by the professional development process and experiences rather than the faculty from which teachers graduated. Similar to our research finding, Atalay-Altaş (2021) examined English teachers' critical thinking and individual innovativeness and concluded that individual innovativeness did not differ according to the faculty from which teachers graduated.

The II level scores of the teachers do not demonstrate a statistically meaningful difference according to the demographic variable of educational status. The reason may be the fact that individual innovativeness is not a theoretical knowledge that can be acquired through education, but a skill developed through practical experience and continuous learning. Moreover, a teacher's innovativeness may stem from his/her personal characteristics and motivation regardless of his/her level of education. Similar to our research finding, Kocasaraç (2018) examined the innovativeness of high school teachers and concluded that individual innovativeness did not differ according to educational status.

As concerns the 'school level' variable, the teachers' II level scores do not display a statistically significant difference in this respect. This can be interpreted by the fact that teachers working at each school level develop new methods and approaches in accordance with the needs of their students. In addition, the fact that individual innovativeness is more influenced by school culture

rather than school level may also be a reason. Similar to our research finding, Şentürk, Uçar, Gümüş and Diksoy (2021) examined the relationship between teachers' techno- pedagogical levels and II levels; and found that innovativeness did not differ according to school level variable.

The II level scores of English teachers do not demonstrate a statistically remarkable difference according to the demographic variable of school type. The reason could be the fact that the teaching profession is basically the same in all kinds of schools and educational institutions and that innovative approaches are necessary to provide education in accordance with the interests and abilities of students in every school type. When the literature was examined, no study was encountered in which individual innovativeness in teachers did not differ according to school type. This may be due to the limited group of teachers working in private schools in our study. Unlike our research result, Kocasaraç (2021) examined the innovative status of teachers in his study and found that individual innovativeness differed according to whether they worked in a private or public institution. This distinctness was found to be in favour of teachers in private schools. The teachers working in private schools are laid off when they have the slightest problem with their administrators, feel the need to fulfil every request of the students, and most importantly, they have to struggle with financial problems (Cerev and Çoşkun, 2020).

Discussion on the correlation between II levels and TSE Beliefs

As indicated, the study found that there is a moderate positive relationship between the TSE scores and their II level scores of the EFL teachers. Their TSE beliefs explain 18% of their individual innovativeness. When the research is reviewed, it is seen that some studies support the findings in this study. Zainal and Mohd-Matore (2021) concluded that teachers' TSE and school principals' transformational leadership roles have a predictive effect on teachers' individual innovativeness levels in their research on educators working in secondary education institutions. Hsiao, Chang, Tu, and Chen (2011) examined the effect of self-efficacy on innovative work behaviour in secondary school teachers. In the research findings, it was concluded that teachers with high self-efficacy showed better innovative work behaviour. In another study, Gündüz (2018) investigated the pre-service teachers' TSE and II levels and found that there was a significant positive relationship between their II levels and academic self-efficacy levels. Huang, Lee, and Yang (2019) also conducted a study on self-efficacy and creative identity levels of kindergarten teachers. The results of the study show that teachers' self-efficacy has an impact on their creative role identities and creative practice attitudes. Self-efficacy denotes a person's belief in their ability to effectively accomplish a particular task, and possessing high self-efficacy can bolster teachers' confidence in themselves and encourage them to experiment with new techniques and approaches. (Tschannen-Moran and McMaster, 2009)

CONCLUSION

According to the study's findings, it can be concluded that there is a statistically significant difference in the TSE belief scores of English language teachers based on the demographic variables of gender and school type. This discrepancy favours private schools and male English teachers. However, there is no statistically significant difference in the TSE belief scores of EFL teachers with respect to the factors such as age, experience, faculty of graduation, educational attainment, or school-level demographics.

Furthermore, there is no statistically significant difference in the II level ratings of the English teachers according to demographic variables such as gender, experience, faculty of graduation, educational level, school level, or school type. However, based on the demographic variable of age, there is a statistically significant variation in the II level scores of EFL teachers. The age group of English teachers between the ages of 31 and 40 has a statistically significant advantage over the group of English teachers between the ages of 41 and 50.

Moreover, there is a moderate positive correlation between EFL teachers' scores on TSE beliefs and their II level scores. It is necessary to remark that and EFL teachers' TSE beliefs explain 18% of individual innovativeness.

To boost teachers' self-efficacy, policymakers should set up professional development programs. To raise teachers' skill and self-efficacy, these programs may incorporate creative instructional techniques, methods, and activities. Through in-service or other training, policymakers can give teachers the tools and chances they need to improve their self-efficacy. Additionally, they can develop courses that inspire teachers to experiment. Planning early intervention initiatives can also be made easier by policymakers regularly assessing teachers' self-efficacy. The education system might incorporate a mentorship and support structure for teachers, whereby experienced teachers guide novice ones, promoting self-efficacy and creative abilities. Additionally, by encouraging teachers to attempt new methods, school principals can reward and promote creative teaching methods.

In the research, the relationship between TSE and II level was obtained using cross-sectional methods. In future studies, longitudinal methods can be used to present the causal relationship between TSE and II level more clearly. In addition, such studies can reveal the changes in teachers' TSE and II levels throughout their careers and their effects on student achievement. However, the data and results obtained from this study reflect teachers who live in Türkiye. In future studies, a multicultural study can be conducted by including teachers living in different countries. Thus, comparative results can be obtained about teacher education and education systems in different countries. Such a study would also allow for cross-cultural comparisons of the English teachers' TSE and II levels. Finally, the data from this study only reflects quantitative data obtained from teachers. In prospective studies, a multidimensional view of the variables examined can be obtained by collecting data from educational stakeholders (school administration, students, families) who witness, affect and are affected by teacher self-efficacy and individual innovativeness. In addition, future studies based on the mixed methods by including qualitative data may provide more detailed information on the background of these variables.

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Farklı Özel Gereksinim Gruplarında Müzik Eğitimine Yönelik Programların İncelenmesi ve Uygulamaya Yansımaları

An Examination of Music Education Programs for Different Special Needs Groups and Their Implications for Practice

Sinem Miraç ÖZTÜRK[1]

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Öz

Bu araştırma, özel gereksinim gruplarına yönelik müzik eğitimi programlarının kuramsal temelleri ve uygulama süreçlerini kapsamlı biçimde incelemeyi amaçlamaktadır. Çalışma, müzik eğitiminin bireylerin bilişsel, duyuşsal ve sosyal gelişim süreçlerine sağladığı katkıları, öğrenme kuramları ve sosyal etkileşim yaklaşımları bağlamında ele almaktadır. Bu doğrultuda, görme, işitme, zihinsel, bedensel yetersizlik ve otizm gibi farklı özel gereksinim gruplarına yönelik programların, bireyselleştirilmiş ve çok boyutlu yaklaşımlar temelinde yapılandırılmasının önemi vurgulanmaktadır. Araştırma, ulusal ve uluslararası literatür taraması yapılarak elde edilen verilerin sistematik içerik analizi yöntemiyle değerlendirilmesine dayanmaktadır. Elde edilen bulgular, müzik eğitiminin öğrencilere sunduğu bilişsel destek, duyuşsal denge ve sosyal etkileşimi geliştirme kapasitesinin yanı sıra, programların teorik altyapısının uygulamaya yansıtılmasında karşılaşılan zorlukları da ortaya koymaktadır. Sonuç olarak, mevcut müzik eğitimi programları, özel gereksinimli bireylerin eğitim süreçlerine olumlu katkılar sağlasa da, uygulama aşamasında yapısal ve metodolojik eksiklikler gözlemlenmektedir. Bu bağlamda, teknolojik altyapının güçlendirilmesi, öğretmenlerin mesleki gelişiminin desteklenmesi ve bireyselleştirilmiş yaklaşımların daha etkin hale getirilmesi, programların sürdürülebilirliğini ve genel etkililiğini artırmak için önemli sayılabilmektedir.

Anahtar Kelimeler: Müzik eğitimi, özel gereksinim grupları, program etkililiği

Abstract

This research aims to comprehensively examine the theoretical foundations and implementation processes of music education programs designed for special needs groups. The study explores the contributions of music education to the cognitive, affective, and social development of individuals within the context of learning theories and social interaction approaches. In this regard, the importance of structuring programs for various special needs groups-including those with visual, auditory, intellectual, and physical disabilities, as well as autism-on the basis of individualized and multidimensional approaches is emphasized. The research is based on a systematic content analysis of data obtained from a review of both national and international literature. The findings reveal not only the capacity of music education to provide cognitive support, enhance affective balance, and foster social interaction among students, but also highlight the challenges encountered in translating theoretical frameworks into practice. In conclusion, although existing music education programs positively contribute to the educational processes of individuals with special needs, significant structural and methodological shortcomings are observed during implementation. Strengthening technological infrastructure, supporting the professional development of educators, and adopting more effective individualized approaches are essential for improving the sustainability and overall effectiveness of these programs. The results of this study serve as a foundation for further research and offer valuable insights for policymakers, practitioners, and researchers dedicated to enhancing the quality and inclusiveness of music education for special needs populations. Furthermore, this study contributes to literature by providing recommendations for enhancing outcomes and program design in educational settings.

Keywords: Music education, special needs groups, program effectiveness

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GİRİŞ

Müzik eğitimi; bireylerin bilişsel, duyuşsal ve devinişsel gelişimlerine çok yönlü katkılar sağlayan bir disiplin olmanın yanı sıra, sosyalleşme ve öz benlik gelişimi süreçlerinde de önemli bir rol oynamaktadır (Hallam, 2010). Özellikle özel gereksinimli bireyler söz konusu olduğunda müziğin sunduğu çoklu öğrenme ortamları, iletişim becerilerinin gelişmesi ve duygu ifadesinin zenginleşmesi bakımından kritik bir öneme sahiptir (Standley, 2002). Bu bağlamda, özel eğitime ihtiyaç duyan bireylerin eğitim süreçlerini desteklemek amacıyla müzik eğitimi programlarının tasarlanması, uygulanması ve değerlendirilmesi; yalnızca akademik bir araştırma konusu olmakla kalmayıp, aynı zamanda eğitim politikaları ve uygulamaları açısından da öne çıkan bir gereklilik hâline gelmiştir (Millî Eğitim Bakanlığı [MEB], 2018).

Farklı özel gereksinim grupları; görme, işitme, zihinsel, bedensel yetersizlik ve otizm gibi çeşitli yetersizlik türlerini kapsamaktadır ve her bir gruba yönelik planlanan eğitim programlarının bireyselleştirilmiş ve çok boyutlu olması beklenmektedir (Williams et al., 2023). Örneğin, işitme yetersizliği olan bireylere yönelik müzik eğitimi uygulamaları, ritim ve titreşim algısının ön plana çıkarılmasını gerektirirken; otizm spektrum bozukluğu olan bireylerle gerçekleştirilen müzik çalışmaları, sosyal etkileşim ve iletişim becerilerinin geliştirilmesi amacına daha fazla ağırlık vermektedir (Standley, 2002). Bu farklılaşan gereksinimlerin, öğretim süreçlerindeki yöntem ve materyal seçiminde belirleyici olması (Hallam, 2010) ve eğitimcilere, rehberlik uzmanlarına ve ebeveynlere yol gösterecek nitelikte programların geliştirilmesi önemli olabilmektedir. Dolayısıyla, farklı özel gereksinim gruplarının müzik eğitimi programlarını incelemek ve bu programların uygulamaya yansımalarını belirlemek; alan yazına kuramsal bir katkı sağlamakta ve uygulamadaki etkililiği artırmak adına gerekli verileri sunmaktadır. Bu doğrultuda, öncelikle farklı yetersizlik gruplarına yönelik müzik eğitimi programlarına ilişkin kuramsal altyapı ve ulusal-uluslararası çalışmalar incelenecek, ardından alan yazından elde edilen veriler doğrultusunda programların etkili ve sürdürülebilir şekilde hayata geçirilmesi için önerilerde bulunulacaktır.

Ayrıca bu çalışmada özel gereksinim gruplarına yönelik müzik eğitiminin kuramsal altyapısını ve uygulamadaki etkilerini ortaya koyma çabasıyla yürütülen araştırmalar, çok boyutlu ve disiplinlerarası perspektiflerle ele alınmıştır. Uluslararası literatürde, müzik eğitiminin çocukların bilişsel, duyuşsal ve sosyal gelişim süreçlerine olan katkıları incelenmiş; bu bağlamda müzik temelli müdahalelerin nörolojik süreçlere, dikkat ve hafıza gibi bilişsel fonksiyonlara olumlu etkiler sunduğu ileri sürülmüştür (Hallam, 2010). Standley (2002) tarafından gerçekleştirilen meta-analiz çalışmasında ise, müzik terapisi uygulamalarının özel gereksinimli çocuklar üzerindeki etkililiği sistematik olarak ortaya konulmuş, bu müdahalelerin hem terapötik hem de pedagojik açıdan destekleyici rol oynadığı belirlenmiştir. Wigram, Pedersen ve Bonde (2002) müzik terapisinin klinik uygulamalarda ve eğitim süreçlerinde disiplinlerarası yaklaşımlarla nasıl bütünleştirilebileceğini ortaya koyarak, müzik eğitiminin çok katmanlı etkilerini gözler önüne sermiştir.

MEB'in (2018) yayımladığı dokümanlar, özel eğitim hizmetleri kapsamında müzik eğitiminin standart ve eğitim politikası düzeyinde nasıl yapılandırılması gerektiğine dair rehberlik sunarak, uygulama sürecinin kuramsal temellerini güçlendirmiştir. Son yıllarda, dijital araçların ve etkileşimli platformların eğitim süreçlerine entegrasyonu, müzik eğitiminin erişilebilirliğini ve sürdürülebilirliğini artırma yönünde önemli katkılar sağlamaktadır. Ayrıca, müzik eğitiminin pedagojik ve terapötik boyutlarını aynı anda ele alan çalışmalar, kullanılacak yöntem ve tekniklerin belirlenmesinde karma yöntem araştırma yaklaşımlarının (nicel ve nitel yöntemlerin birlikte kullanılması) önemini vurgulamaktadır.

Bu çalışma kapsamında özel gereksinim gruplarına yönelik müzik eğitimi programlarının değerlendirilmesinde, sonuçların genellenmesinde bazı kısıtlamalar bulunmaktadır. Ayrıca, araştırmada büyük ölçüde erişilebilir yayımlanmış literatüre, resmi dokümanlara ve mevcut uygulama örneklerine dayalı veri toplama yöntemleri tercih edilmiş; bu durum, programların uygulama sürecinde ortaya çıkan bireysel deneyim ve farklılıkların tam anlamıyla temsil

edilememesine yol açarak elde edilen verilerin kapsamını sınırlamıştır. Uygulama sürecinde kullanılan yöntemsel yaklaşımlar ve veri analiz tekniklerinin, programların uzun dönemli etkilerini ve dinamiklerini ölçmede belirli kısıtlamalara sahip olması; sınıf ortamında yaşanan değişkenlik, materyal ve teknolojik altyapının yetersizliği ile eğitmenlerin uzmanlık düzeylerinin sonuçların yorumlanmasında belirsizliklere neden olabileceği göz önüne alınmıştır. Buna ek olarak, farklı müzik eğitimi uygulamalarının karmaşık yapısını tam anlamıyla kavrayabilmek için daha geniş örneklem grupları ve uzun vadeli araştırmalarla desteklenmesi gerekliliği düşünülmektedir. Bu çerçevede:

1. Çalışmada ele alınan müzik eğitimi programlarının, ilgili yetersizlik gruplarının özellikleri dikkate alınarak hazırlandığı ve bilimsel ilkelere uygun olarak uygulandığı,
2. Araştırma kapsamında incelenen uygulamalardaki eğitmenlerin, özel eğitim ve müzik eğitimi alanlarında yeterli bilgi birikimi ve deneyime sahip olduğu,
3. Literatür taraması ve uygulama örneklerinden elde edilen verilerin doğru ve güvenilir olduğu varsayılmaktadır.

Araştırmanın Amacı ve Önemi

Bu araştırmanın temel amacı, farklı özel gereksinim gruplarına (görme, işitme, zihinsel, bedensel yetersizlik ve otizm gibi) yönelik müzik eğitimi programlarının kuramsal temellerini ve uygulama süreçlerini inceleyerek, bu programların etkililiğini ve sürdürülebilirliğini değerlendirmektir. Bu bağlamda, mevcut literatürde sunulan örnek uygulama ve yöntemlerin hangi ölçütlere göre geliştirildiği ve uygulamada hangi başarılar ile sınırlılıklar gözlemlendiği sistematik bir şekilde irdelenecektir. Elde edilen sonuçlara dayanarak, özel gereksinimli bireylerin eğitim-öğretim süreçlerinde müziğin daha etkin biçimde kullanılabilmesi için kapsamlı ve güncel bir çerçeve oluşturulması hedeflenmektedir. Aynı zamanda, araştırma bulgularının özel eğitim alanı ve müzik eğitimi disiplininin birleşim noktasında yapılacak yeni çalışmalara kaynaklık edebileceği, uygulamalara rehberlik ederek daha kapsayıcı bir eğitim anlayışının benimsenmesine katkı sağlayacağı öngörülmektedir.

Müzik eğitimi, özel gereksinimli bireylerin sosyal, duygusal ve bilişsel gelişimlerine çok yönlü katkı sunan bir araç olmasının yanı sıra, iletişim ve etkileşim becerilerini desteklemesi bakımından da önemli fırsatlar sunmaktadır (Hallam, 2010; Standley, 2002). Ancak her bir özel gereksinim grubunun farklı gereksinimleri ve öğrenme özellikleri, müzik eğitimi programlarının tasarımı, uygulanması ve değerlendirilmesi süreçlerinde özenli ve sistematik bir yaklaşım gerektirmektedir (Van Vreden, 2023). Bu noktada, mevcut programların bilimsel dayanakları ve sahadaki uygulamaya yansımaları hakkındaki verilerin sınırlı oluşu, araştırmayı önemli kılabilmektedir. Özel gereksinimli bireylerin eğitim süreçlerinde müziğin potansiyelinden daha fazla yararlanılması ve alanyazında var olan kuramsal açıklamaların uygulamaya yansıtılması sürecine rehberlik edilmesi hedeflenmektedir.

Problem Durumu ve Araştırma Soruları

Müzik eğitimi, özel gereksinimli bireylerin bilişsel, duyuşsal ve psikomotor gelişimlerini destekleyen çok yönlü bir öğrenme alanı olarak dikkat çekmektedir (Hallam, 2010). Ancak her bir özel gereksinim grubunun (görme, işitme, zihinsel, bedensel yetersizlik ve otizm spektrum bozukluğu vb.) kendine özgü öğrenme ihtiyaçlarına sahip olması, müzik eğitiminin tasarım ve uygulama süreçlerinde bireyselleştirilmiş yaklaşımların ön plana çıkmasını zorunlu kılmaktadır (Grimsby & Jones, 2024; Stavrou, 2024). Bu durum, hem müzik eğitimi hem de özel eğitim alanlarında disiplinler arası iş birliğini, program geliştirme çalışmalarını ve uygulamadaki etkililiğin bilimsel temellerle desteklenmesini gerektirmektedir (MEB, 2018).

Alanyazında, farklı özel gereksinim gruplarına yönelik müzik eğitimi uygulamalarının etkililiğini inceleyen araştırmalar bulunmakla birlikte, bu araştırmaların sınırlı örneklemlere dayandığı veya uygulamaların derinlemesine analizlerini kapsamaktan uzak olduğu

görülmektedir (Standley, 2002). Özellikle her bir yetersizlik grubuna uygun öğretim materyalleri, yöntemleri ve değerlendirme ölçütleri gibi konularda kapsamlı program örneklerine ve bunların uygulama sonuçlarını ortaya koyan çalışmalara ihtiyaç olduğu dikkat çekmektedir. Dolayısıyla, özel gereksinimli bireylere yönelik müzik eğitimi programlarının uygulamaya yansımalarının incelenmesi ve bu süreçte elde edilen deneyimlerin sistematik olarak ortaya konması, alanyazında bulunan boşluğun doldurulması bakımından önem taşıyabilmektedir. Bu doğrultuda aşağıdaki araştırma sorularına cevap aranacaktır:

1. Farklı özel gereksinim gruplarına (görme, işitme, zihinsel, bedensel yetersizlik, otizm vb.) yönelik mevcut müzik eğitimi programları hangi kuramsal temellere dayanmaktadır?
2. Program uygulama sürecinde kullanılan yöntem ve teknikler nelerdir ve bu süreçte hangi zorluklarla karşılaşılmaktadır?
3. Mevcut programların etkililiği, öğrenci başarısı ve gelişimi açısından değerlendirildiğinde hangi kazanımlar ve eksiklikler ön plana çıkmaktadır?

Bu araştırma soruları, alanyazındaki mevcut bilgi birikiminin analizine ve eğitimcilerin uygulamalarına ışık tutarak, özel gereksinim gruplarına yönelik müzik eğitimi programlarının bütüncül bir çerçevede ele alınmasını hedeflemektedir.

KURAMSAL ÇERÇEVE

Müzik Terapisi Kuramları

Müzik terapisi, bireylerin duygusal ifade, sosyal etkileşim ve bilişsel süreçlerinin desteklenmesinde müziğin dönüştürücü rolünü esas alan bir müdahale yaklaşımıdır (Gebhardt et al., 2018). Standley (2002) tarafından yapılan sistematik incelemeler, müzik terapisi uygulamalarının, özellikle özel gereksinimli bireylerde terapötik etki yaratmada etkili olduğunu ortaya koymaktadır. Ayrıca, psikodinamik yaklaşımlar kapsamında müziğin, bireyin bilinçdışı süreçlerine erişim sağlayarak kişilik yapısının yeniden düzenlenmesinde önemli bir araç olduğu ileri sürülmektedir. Bu kuramsal temeller, müzik eğitimi programlarının bireyselleştirilmiş ve çok boyutlu olarak yapılandırılmasında, terapötik müdahalelerin sistematik entegrasyonunu destekleyerek uygulamadaki etkinliğin artırılmasına yönelik sağlam bir temel sunmaktadır (Hallam, 2010).

Nörobilim Temelli Yaklaşımlar

Günümüzde nörobilim alanında yapılan araştırmalar, müzik eğitiminin beyindeki yapısal ve fonksiyonel değişimlere etkisini ortaya koymaktadır. fMRI, EEG ve diğer nörogörüntüleme yöntemleriyle elde edilen bulgular, müziksel uyarımın sinaptik bağlantıları güçlendirerek nöroplastisiteyi artırdığını, dikkat, hafıza ve dil gibi bilişsel işlevlerin iyileşmesinde belirleyici rol oynadığını göstermektedir (Koelsch, 2010; Wan & Schlaug, 2010). Bu bağlamda, müzik eğitiminin sadece estetik ve duyuşsal bir deneyim sunmanın ötesinde, bireylerin nörolojik gelişimine doğrudan katkı sağladığı bilimsel olarak tespit edilmiştir. MEB, (2018) dokümanlarında vurgulanan teknolojik altyapının güçlendirilmesi ve dijital araçların entegrasyonu, müzik eğitiminin nörolojik temellerle desteklenmesi ve bu sayede eğitim süreçlerine entegre edilmesi açısından önemli stratejik adımlar olarak öne çıkmaktadır. Böylece, nörobilim temelli yaklaşımlar, müzik eğitim programlarının bilimsel dayanaklarını güçlendirirken uygulamadaki metodolojik eksikliklerin giderilmesine yönelik önerilerin geliştirilmesine zemin hazırlamaktadır.

Disiplinlerarası Yaklaşımlar

Özel eğitim ve müzik terapisi gibi farklı disiplinlerin entegrasyonu, özel gereksinimli bireylerin eğitim süreçlerine yönelik programların etkililiğinin artırılmasında kritik bir rol oynamaktadır. Wigram, Pedersen & Bonde (2002) tarafından önerilen disiplinlerarası model, müzik eğitiminin terapötik ve pedagojik boyutlarının birlikte değerlendirilmesinin, uygulamadaki

bütüncül etkiyi güçlendirdiğini göstermektedir. Ayrıca, dijital teknolojilerin ve etkileşimli platformların kullanımı, bu disiplinlerarası yaklaşımın pratikte uygulanabilirliğini artırarak, eğitim süreçlerinin sürdürülebilirliğine ve verimliliğine önemli ölçüde katkıda bulunmaktadır.

Özel gereksinimli bireylerin eğitim süreçlerine yönelik müzik eğitimi programlarının geliştirilmesi ve uygulanmasında, müzik terapisi kuramlarının derinlemesine incelenmesi, nörobilim temelli verilerle desteklenen yaklaşımların benimsenmesi ve disiplinlerarası uygulama modellerinin entegrasyonu büyük önem arz etmektedir. Literatürde yer alan güncel çalışmaların ışığında oluşturulan bu kuramsal çerçeve, müzik eğitiminin özel gereksinimi olan bireylerin gelişimine sunduğu çok yönlü katkıları bilimsel temellere dayandırarak daha kapsayıcı ve sürdürülebilir program modellerinin geliştirilmesine olanak sağlamaktadır.

YÖNTEM

Bu araştırma, farklı özel gereksinim gruplarında müzik eğitimine yönelik programların kuramsal bir çerçevede ele alınmasını amaçlayan betimsel bir literatür taraması çalışmasıdır. Araştırmanın modeli, farklı özel gereksinim gruplarında müzik eğitimine yönelik programların kuramsal temelleri ve uygulama süreçlerinin bütüncül bir perspektifle ele alınmasını sağlayan nitel araştırma yaklaşımına dayanmaktadır.

Bu model, ulusal ve uluslararası literatürde yer alan çalışmaların sistematik olarak taranması ve içerik analizine tabi tutulması suretiyle; programların yapıtaşlarını, uygulama stratejilerini ve elde edilen sonuçları derinlemesine incelemeyi amaçlamaktadır. Araştırma modeli, Creswell (2013) ve Cooper (2010) gibi yazarların önerdiği sistematik literatür taraması yöntemlerinin yanı sıra, Standley (2002) ve Hallam (2010) tarafından müzik eğitiminin özel gereksinimli bireyler üzerindeki etkilerine ilişkin ortaya konulan yaklaşımların sentezlenmesine olanak tanıyacak biçimde yapılandırılmıştır. Model, öncelikle belirlenen akademik veri tabanları aracılığıyla "özel gereksinim", "müzik eğitimi", "program değerlendirmesi" ve "uygulama" gibi anahtar kelimeler kullanılarak gerçekleştirilen literatür taramasına dayanmaktadır. Elde edilen veriler, MEB (2018) kaynaklarında vurgulanan uygulama kriterleri çerçevesinde tematik olarak sınıflandırılmış ve analiz edilmiştir. Bu süreç, programların hem kuramsal dayanaklarının hem de uygulamadaki etkililiklerinin kapsamlı bir şekilde değerlendirilmesine imkan tanımaktadır. Böylece, araştırmanın modeli, alan yazınındaki mevcut bilgi birikimini sistematik bir bakış açısıyla sentezleyerek, özel gereksinimli bireylerin müzik eğitimi yoluyla elde ettiği kazanımlar ve karşılaştıkları zorluklar hakkında sonuçlara ulaşmayı hedeflemektedir.

Örneklem

Bu araştırmada, geleneksel anlamda bir saha verisi toplanmadığı ve doğrudan katılımcıların yer aldığı bir uygulama yürütülmediği için, örneklem kavramı genellikle bir katılımcı grubunu değil, araştırmaya dahil edilen kaynakların oluşturduğu bir literatür havuzunu ifade eder. Bu nedenle, söz konusu betimsel literatür taraması kapsamında, özel gereksinim gruplarına ilişkin müzik eğitimi programlarını ve uygulamalarını ele alan ulusal ve uluslararası literatür örneklem işlevi görmektedir.

Örneklem kısmında, araştırmada kullanılan kaynakların hangi ölçütlere göre seçildiği ve hangi veri tabanlarından elde edildiği açıklanabilir. Bu bağlamda örneklem, sınırlı ya da tesadüfî bir katılımcı grubu yerine, ilgili anahtar kelimeler ışığında (örn. "müzik eğitimi," "özel gereksinim," "program değerlendirmesi," "uygulama," vb.) taranan ve betimsel literatür taramasının kapsamına alınan çalışmaları temsil etmektedir. Böylece, seçilen kaynakların son 15-20 yıl içerisinde yayımlanmış, hakemli ve erişilebilir olmasına dikkat edilerek geniş bir veri seti oluşturulmuştur.

Veri Toplama Araçları

Araştırma kapsamında, akademik veri tabanları ve YÖK Ulusal Tez Merkezi üzerinden literatür taraması yapılmıştır. MEB tarafından yayımlanan yönetmelikler ve kılavuz dokümanlar gibi resmî kaynaklara da ulaşılarak, mevcut müzik eğitimi politikalarıyla ilgili bilgilere yer verilmiştir. Tarama sonucunda tespit edilen çalışmaların başlık, özet ve tam metinleri incelenmiş; araştırmanın amacı ve sorularıyla ilgili olanlar, kuramsal ve uygulamaya yönelik katkı sağlayabilecek nitelikte bulunması halinde incelemeye dahil edilmiştir. Bu süreçte betimsel literatür taraması yöntemi çerçevesinde, kaynakların sorunsal ve kapsam bakımından birbirleriyle ne ölçüde ilişkilendirilebileceği de göz önünde bulundurulmuştur.

İşlem

İlk aşamada tanımlanan anahtar kelimeler aracılığıyla ilgili çalışmalara ulaşılmış, verilerin büyük bir bölümü uluslararası hakemli dergilerde ve tezlerde yayımlanmış makalelerden elde edilmiştir. İkinci aşamada, çalışmalarda yer alan kaynakçalar incelenerek alan yazınındaki önemli klasik ve güncel araştırmalara ulaşılması hedeflenmiş, böylece literatür taramasının genişletilmesi sağlanmıştır. Ardından, verilerin içerik analizi sürecine geçilmiş; her bir çalışmanın amaç, yöntem, örneklem/katılımcı profili (varsa), temel bulgular ve sonuç/öneriler gibi bölümleri sistematik olarak incelenmiştir. MEB (2018) dokümanları ile belirli üniversitelerin yayınladığı tezler de, farklı özel gereksinim gruplarına dönük müzik eğitimi programlarının kılavuz ilkelerine ve uygulama örneklerine ışık tutması bakımından sürece dahil edilmiştir.

Verilerin Analizi

Bu araştırmada, nitel bir bakış açısı benimsenmiş ve içerik analiziyle tematik analiz yöntemleri kullanılmıştır. Literatürdeki çalışmalar, "programların kuramsal temelleri," "uygulamada kullanılan yöntem ve teknikler," "zorluklar ve eksiklikler" gibi temalar üzerinden sınıflandırılmış, benzerlik gösteren veya birbirini tamamlayan bulgular bir araya getirilerek yorumlanmıştır. Bu süreçte, müzik eğitimi programlarına katılan özel gereksinimli bireylerin akademik, sosyal ve duyuşsal gelişimlerine ilişkin sonuçlar ile uygulamaya konulan programların hangi koşullarda başarı ya da sınırlılık gösterdiği incelenmiştir. İçerik analizi sonucunda, literatürde en sık vurgulanan noktalar derlenmiş ve araştırma soruları çerçevesinde bütüncül bir çerçeve sunulmuştur. Bu yaklaşım, betimsel literatür taramasının doğasına uygun biçimde, mevcut literatürü yansıtıcı ve sentezleyici bir tutumla gerçekleştirilmiştir.

BULGULAR

Özel Gereksinim Gruplarına Yönelik Müzik Eğitimi Programlarının Kuramsal Temelleri

Özel gereksinim gruplarına yönelik müzik eğitimi programlarının kuramsal temelleri, programların tasarım aşamasından uygulama süreçlerine kadar rehberlik eden çok katmanlı ve disiplinlerarası yaklaşımlara dayanmaktadır (Draper & Bartolome, 2021; Xin, Hwa, Cooper, & Wing, 2023; Daněk, 2024). Bu temeller, öncelikle müzik eğitiminin bilişsel gelişim, duyuşsal ve sosyal etkileşim üzerindeki olumlu etkilerini vurgulayan psikolojik ve pedagojik teorilerle şekillenmektedir. Örneğin, bilişsel gelişim kuramları, müzik etkinliklerinin çocukların dikkat, hafıza ve problem çözme becerilerini desteklediğini ortaya koyarken, Vygotsky ve Piaget gibi kuramcıların görüşleri, öğrenme süreçlerinde müziğin rolünü teorik bir zemin üzerine oturtmaktadır. Ayrıca, duyuşsal ve sosyal gelişim teorileri, müzik eğitiminin bireylerin duygusal ifade, empati ve grup içi etkileşim gibi alanlarda sağladığı katkıları detaylandırmaktadır. Hallam (2010) ve Standley (2002), müzik eğitiminin bireylerin duygusal düzenleme becerilerini geliştirdiğini, sosyal etkileşimleri güçlendirdiğini ve kişisel gelişime olumlu yönde etki ettiğini belirtmişlerdir. Bu bağlamda, müzik eğitimi programlarının kuramsal altyapısı, sadece akademik bir bilgi aktarımını değil aynı zamanda öğrencilerin sosyal ve duyuşsal gelişimlerini destekleyen terapötik boyutları da içermektedir.

Müzik terapisi alanındaki kuramsal yaklaşımlar da, özel gereksinim gruplarına yönelik programların oluşturulmasında önemli bir referans noktası sunmaktadır. Wigram, Pedersen ve Bonde (2002) tarafından geliştirilen modeller, müzik temelli müdahalelerin terapötik etkililiğini ortaya koyarak, müzik eğitiminin sadece sanatsal bir etkinlik olmadığını, aynı zamanda bireylerin duygusal ve psikolojik iyileşme süreçlerine katkı sağlayan bütünleyici bir araç olduğunu göstermektedir.

Öte yandan, özel gereksinimli bireylerin eğitim ihtiyaçlarının bireyselleştirilmiş yaklaşımlarla ele alınması gerekliliği, kuramsal temellerin önemli bir bileşenini oluşturmaktadır. Aycan, (2018) ve Hernández-Bravo (2016) çalışmalarında, her öğrencinin kendine özgü öğrenme stilinin ve gereksinimlerinin dikkate alınmasının, müzik eğitimi programlarının etkililiğini artırdığını vurgulamışlardır. Bu yaklaşım, öğrenci merkezli ve katılımcı pedagojik modellerin benimsenmesiyle, programların esnek ve adaptif yapı kazanmasını sağlamaktadır.

Özel gereksinim gruplarına yönelik müzik eğitimi programlarının kuramsal temelleri; bilişsel, duyuşsal, sosyal ve terapötik boyutların entegrasyonu üzerine inşa edilebilmektedir. Bu çok boyutlu yapı programların planlanmasında, uygulanmasında ve değerlendirilmesinde, öğrencilerin bütüncül gelişimlerine katkı sağlayacak şekilde stratejik olarak kullanılmaktadır. Böylece, müzik eğitimi programları akademik ve uygulamaya yönelik olarak, özel gereksinimli bireylerin yaşam kalitesini artırmaya yönelik sağlam ve bilimsel temellere dayanan bir çerçeve sunmaktadır.

Program Uygulama Sürecinde Kullanılan Yöntem ve Teknikler ile Karşılaşılan Zorluklar

Program uygulama sürecinde kullanılan yöntem ve teknikler ile karşılaşılan zorluklar, özel gereksinimli bireylere yönelik müzik eğitimi uygulamalarının etkinliğini belirleyen önemli unsurlar arasında yer alabilmektedir. Bu süreçte, uygulayıcılar genellikle bireyselleştirilmiş öğretim stratejileri, grup etkinlikleri ve dijital teknolojilerin entegrasyonu gibi çok yönlü yöntemleri devreye sokabilmektedir. Bireyselleştirilmiş yaklaşımlar, her öğrencinin öğrenme stiline ve özel ihtiyaçlarına uygun olarak tasarlanmakta; bu sayede, öğrencinin duyusal, bilişsel ve duyuşsal gelişimine yönelik özelleştirilmiş aktiviteler uygulanabilmektedir. Aynı zamanda, grup çalışmaları, öğrenciler arası etkileşimi artırarak sosyal becerilerin geliştirilmesinde önemli bir rol oynamaktadır. Dijital teknolojilerin ve etkileşimli materyallerin kullanımı ise, öğrencilerin dikkat ve motivasyon düzeyini artırmada etkili bir araç olarak öne çıkmaktadır. Ancak, uygulama sürecinde bu yöntem ve tekniklerin etkin bir şekilde hayata geçirilmesinde çeşitli zorluklarla da karşılaşılabilmektedir. Öncelikle, eğitimcilerin alan bilgisi ve uzmanlık düzeyinin yeterliliği, programın başarısında belirleyici bir faktör olarak karşımıza çıkmaktadır. Öğretmenlerin özel gereksinimli bireylerin öğrenme stillerini ve ihtiyaçlarını doğru biçimde analiz edememeleri, bireyselleştirilmiş planlamanın uygulanmasında aksamalara neden olabilmektedir. Ayrıca, sınıf ortamının fiziksel koşulları, materyal ve kaynak eksiklikleri, uygulama sürecinde karşılaşılan yapısal zorluklardan biri sayılabilir. Özellikle, sınıf içi teknolojik altyapının yetersizliği, dijital materyallerin etkili kullanılmasını engelleyerek, öğrencilerin deneyimlerini kısıtlayabilmektedir.

Ek olarak, uygulama sürecinde ortaya çıkan diğer önemli bir sorun da, programların kurumsal destek ve koordinasyon eksikliğiyle bağlantılı olabilmektedir. Eğitim kurumlarının, müzik eğitimi programlarının sürdürülebilirliğini sağlamak için yeterli mali ve idari desteği sunamaması, uygulamanın sürekliliğini olumsuz yönde etkileyebilmektedir. Bu durum, uygulayıcıların ve öğrencilerin motivasyonunda düşüşe neden olabilmekte, programların beklenen etkililiğe ulaşmasını güçleştirebilmektedir. Bunun yanı sıra, müfredatın genel çerçevesi ile özel gereksinimli bireylerin ihtiyaçları arasındaki uyumsuzluklar, öğretim süreçlerinde çeşitli adaptasyon problemlerine yol açabilmektedir.

Tüm bu zorluklara rağmen, uygulama sürecinde kullanılan yöntem ve tekniklerin sürekli olarak gözden geçirilmesi, eğitimcilerin mesleki gelişimlerinin desteklenmesi ve teknolojik

altyapının güçlendirilmesi yoluyla çözüm önerileri geliştirilebilir. Bu bağlamda, uygulamada karşılaşılan sorunların sistematik bir biçimde analiz edilmesi, müzik eğitimi programlarının daha esnek ve etkili hale getirilmesi için bilimsel temelli stratejilerin geliştirilmesine olanak tanımaktadır (MEB, 2018; Standley, 2002; Hallam, 2010). Böylece, özel gereksinimli bireylere yönelik müzik eğitimi uygulamaları, hem pedagojik hem de teknolojik yönleriyle sürekli iyileştirilerek, öğrencilerin öğrenme deneyimlerinin maksimum düzeyde desteklenmesine katkı sağlayabilir.

Öğrenci Başarısı, Gelişimi ve Kazanımlar Bağlamında Mevcut Programların Etkililiği ile Belirlenen Eksiklikler

Bu başlık özelinde, özel gereksinimli bireylere yönelik müzik eğitimi programlarının etkililiği, öğrencilerin akademik performansı, sosyal beceri gelişimi, duyuşsal denge ve kişisel ifade yetenekleri değerlendirilmektedir. Araştırmalar, müzik eğitiminin öğrencilerin bilişsel süreçlerine olumlu katkılar sağladığını, dikkat, hafıza ve problem çözme becerilerini desteklediğini ortaya koyarken (Hallam, 2010; Standley, 2002), aynı zamanda duyuşsal gelişime de önemli katkılar sunduğunu belirtmektedir (Wang, Huang, Zeb, Liu, & Wang 2022; Muñoz & Mas, 2017). Bu kazanımlar, öğrencilerin programlara katılımı, etkileşimde bulunma düzeyleri ve genel yaşam kalitelerindeki iyileşmelerle somut olarak gözlemlenmektedir. Ancak uygulama sürecinde elde edilen veriler, programların bazı eksikliklerini de gözler önüne sermektedir. Özellikle bireyselleştirilmiş eğitim planlarının yeterince uygulanamaması, sınıf ortamının fiziksel ve teknolojik altyapısındaki yetersizlikler ile eğitmenlerin konuya dair uzmanlık düzeyinde görülen eksiklikler, programların beklenen etkililiğe ulaşmasında sınırlayıcı etmenler olarak sayılabilmektedir (MEB, 2018). Bu bağlamda, uygulama sürecinde karşılaşılan eksiklikler; materyal ve kaynak yetersizliği, sınıf içi teknolojik desteğin kısıtlılığı, ayrıca öğretmenlerin alan bilgisi ve uygulama deneyimlerine ilişkin sorunlar olarak öne çıkabilmektedir.

Programların etkililiği, hem nicel hem de nitel veri toplama yöntemleriyle ölçülmekte ve analiz edilmektedir. Nicel veriler, öğrencilerin sınav performansları, öğrenme sürecine aktif katılım oranları ve gözlemlenen davranışsal değişimler üzerinden değerlendirildiği gibi nitel veriler; öğrenci ve öğretmen görüşmeleri, gözlemler ve vaka analizleri gibi yöntemlerle desteklenebilmektedir. Bu çok boyutlu değerlendirme yaklaşımı, programların güçlü yanlarını ve kazanımlarını ortaya koyarken, aynı zamanda iyileştirme gerektiren alanların da sistematik bir biçimde belirlenmesine olanak tanımaktadır.

Özel gereksinimli bireylere yönelik müzik eğitimi programlarının etkililiği, öğrencilerin akademik, sosyal ve duyuşsal gelişim süreçlerinde kaydettikleri olumlu kazanımlar üzerinden değerlendirilmektedir. Ancak mevcut uygulamalarda gözlemlenen eksiklikler, programların sürdürülebilirliği ve uzun vadeli başarısı açısından önemli bir tartışma konusu olabilmektedir. Bu durum, uygulayıcıların mesleki gelişiminin desteklenmesi ile altyapı ve kaynak konularında yapılacak iyileştirmelerin gerekliliğini ortaya koymaktadır. Programların etkililiğinin artırılması için yenilikçi stratejiler geliştirilmesi ve uygulama süreçlerinin sürekli olarak gözden geçirilmesi, gelecekteki araştırmalar için sağlam bir temel sunabilmektedir.

SONUÇLAR VE TARTIŞMA

Sonuç

Bu araştırma özel gereksinim gruplarına yönelik müzik eğitimi programlarının kuramsal temelleri, uygulama sürecinde kullanılan yöntem ve teknikler, programların etkililiği ile öğrencilerin kazanımları ve eksiklikleri çerçevesinde bir değerlendirme sunmuştur. Elde edilen bulgular müzik eğitiminin özel gereksinimli bireylerin bilişsel, duyuşsal ve sosyal gelişim süreçlerine önemli katkılar sağladığını ortaya koyarken, aynı zamanda uygulama aşamasında karşılaşılan yapısal zorlukların programların başarısını kısıtlayan temel etmenler arasında yer aldığını göstermektedir.

Müzik eğitiminin bilişsel gelişim, duyuşsal denge ve sosyal etkileşim üzerindeki olumlu etkileri, öğrenme kuramları ve nörolojik gelişim modelleri çerçevesinde ele alınmış; bu temeller, özel gereksinim gruplarına yönelik programların bireyselleştirilmiş ve katılımcı pedagojik yaklaşımlarla desteklenmesi gerekliliğini ortaya koymuştur (Hallam, 2010; Standley, 2002). Uygulama sürecinde kullanılan yöntem ve tekniklerin detaylı analizi ise, bireyselleştirilmiş öğretim stratejileri, grup etkinlikleri ve dijital teknolojilerin entegrasyonu yoluyla öğrencilerin ihtiyaçlarına uygun yaklaşımların geliştirilmesinin önemini vurgulamıştır. Ancak eğitmenlerin uzmanlık düzeyi, sınıf ortamının fiziki ve teknolojik altyapısı ile kurumsal destek eksiklikleri gibi faktörler, uygulamanın etkinliğini sınırlayan temel sorunlar olarak belirlenmiştir (MEB, 2018).

Programların etkililiği açısından yapılan değerlendirmeler; müzik eğitimi programlarının özel gereksinimli bireylerin akademik başarıları, sosyal beceri gelişimleri, duyuşsal kazanımları ve kişisel ifadelerine olumlu katkılar sağladığını göstermiştir. Bununla birlikte, uygulamada bireysel farklılıkların tam olarak göz önüne alınamaması, sınıf içi etkileşimde yaşanan aksaklıklar ve kaynak yetersizlikleri gibi eksikliklerin, programların istenilen düzeyde etki yaratmasında engel teşkil ettiği tespit edilmiştir (Standley, 2002).

Son olarak, özel gereksinim gruplarında müzik eğitimi programlarının sürdürülebilirliğini ve etkililiğini artırmak amacıyla, teknolojik altyapının güçlendirilmesi, eğitmenlerin sürekli mesleki gelişiminin desteklenmesi, eğitim materyallerinin güncellenmesi ve bireyselleştirilmiş yaklaşımların daha etkin uygulanması yönünde odaklanılmıştır. Bu stratejiler, hem mevcut eksikliklerin giderilmesi hem de özel gereksinimli bireylerin yaşam kalitesinin artırılmasına yönelik uzun vadeli çözümler sunmayı hedeflemektedir (Wigram, Pedersen & Bonde, 2002; MEB, 2018).

Genel olarak bu araştırma, özel gereksinim gruplarına yönelik müzik eğitimi programlarının teorik ve uygulamaya yönelik boyutlarını bütüncül bir perspektifle ele alarak, alanda yapılacak yeni çalışmalara metodolojik temel oluşturmuş; uygulayıcılar ve eğitimciler için öneriler sunmuştur. Elde edilen sonuçlar, müzik eğitiminin özel gereksinimli bireyler üzerindeki potansiyel etkilerini ve bu etkinin artırılması için gerekli stratejik müdahaleleri ortaya koymaktadır.

Tartışma

Araştırmanın tartışma bölümünde; özel gereksinim gruplarına yönelik müzik eğitimi programlarının kuramsal temelleri, uygulama sürecinde kullanılan yöntem ve teknikler, elde edilen etkililik ile karşılaşılan eksiklikler ele alınmıştır. Bulgular, literatürde yer alan teorik yaklaşımların ve saha uygulamalarının sentezlenmesiyle elde edilen sonuçların, özel gereksinimli bireylerin eğitim süreçlerinde müzik eğitiminin kritik rolünü ortaya koyduğunu göstermektedir.

Öncelikle programlar kuramsal temelleri açısından değerlendirildiğinde, araştırmada elde edilen veriler, müzik eğitiminin bilişsel, duyuşsal ve sosyal gelişim süreçlerine olumlu katkılarının, öğrenme kuramları ve nörolojik gelişim modelleri ile temellendirildiğini doğrulamaktadır. Hallam (2010) ve Standley (2002) tarafından öne sürülen yaklaşımlar, müzik eğitiminin, öğrencilerin dikkat, hafıza ve problem çözme becerilerinde iyileşme sağladığını; aynı zamanda duygusal düzenleme ve sosyal etkileşim becerilerinin gelişimine katkıda bulunduğunu göstermiştir. Bu bağlamda, özel gereksinim gruplarına yönelik programların, bireyselleştirilmiş ve katılımcı pedagojik modeller çerçevesinde, öğrencinin kendi öğrenme stiline uygun olarak yapılandırılması gerekliliği belirlenmiştir. Johansen'a (2007) göre kuramsal altyapının sağlam temellere dayanması, programların uygulanabilirliğini ve sürdürülebilirliğini artıran en önemli faktörlerden biridir.

Program uygulama sürecinde kullanılan yöntem ve teknikler ile karşılaşılan zorluklar ise, uygulamadaki pratik engellerin altını çizmektedir. Araştırma bulguları bireyselleştirilmiş

öğretim stratejileri, grup etkinlikleri ve dijital teknolojilerin entegrasyonu gibi yöntemlerin, öğrencilerin ihtiyaçlarına yönelik olarak uygulanması gerektiğini ortaya koyarken; eğitimcilerin yeterli mesleki bilgiye sahip olmaması, sınıf ortamının ve teknolojik altyapının yetersizliği gibi sorunların programın etkinliğini kısıtlayan temel etmenler olduğunu göstermiştir. MEB'in (2018) dokümanları uygulama sürecindeki bu eksikliklerin, hem materyal kaynakları hem de eğitmen desteği açısından sistematik olarak ele alınması gerektiğini vurgulamaktadır. Bu durum, uygulamada karşılaşılan zorlukların, eğitim kurumları tarafından çözüm odaklı stratejiler geliştirilmesiyle giderilebileceğini düşündürmektedir.

Programların etkililiği, öğrencilerin akademik başarıları, sosyal beceri gelişimleri ve duyuşsal kazanımları üzerinden değerlendirildiğinde; müzik eğitiminin özel gereksinimli bireylerin yaşam kalitesini artırmada önemli bir rol oynadığı gözlemlenmektedir. Araştırma, öğrencilerin programlara katılım oranlarının artması, iletişim ve sosyal etkileşim becerilerinde belirgin iyileşmeler olduğunu ortaya koyarken; aynı zamanda, programların bazı alanlarda beklenen etkiyi yaratmada eksiklikler barındırdığını da göstermiştir. Standley (2002) tarafından rapor edilen bulgular müzik eğitiminin potansiyelini ortaya koysa da, uygulamada bireysel farklılıkların tam olarak göz önünde bulundurulamaması, sınıf içi etkileşimin yetersiz kalması gibi nedenlerle istenen düzeyde sonuç alınamadığını işaret etmektedir.

Teknolojik altyapının güçlendirilmesi, eğitmenlerin sürekli mesleki gelişiminin desteklenmesi ve eğitim materyallerinin güncellenmesi gibi stratejilerin, programların etkililiğini artırmada önemli rol oynayabilmektedir. Wigram, Pedersen ve Bonde (2002) tarafından sunulan kapsamlı müzik terapisi modelleri ile desteklenen öneriler, gelecekteki uygulamalara yönelik yol gösterici nitelikte olabilmektedir.

Öneriler

Araştırmanın sonuçları bağlamında:

Programların hem kuramsal altyapısının güçlendirilmesi hem de uygulama sürecinde karşılaşılan pratik sorunların giderilmesi yönünde şekillendirilmesi; müzik eğitiminin bilişsel, duyuşsal ve sosyal gelişim üzerindeki olumlu etkilerinin, öğrenme kuramları, nörolojik gelişim modelleri ve sosyal biliş kuramı çerçevesinde sağlam temellere dayandırılması; eğitimcilerin, özel gereksinimli öğrencilerin bireysel farklılıklarını dikkate alarak bireyselleştirilmiş eğitim planları oluşturması; sınıf içi teknolojik altyapının güçlendirilmesi ve eğitim materyallerinin düzenli olarak güncellenmesi; öğretmenlerin mesleki gelişimlerinin desteklenmesi amacıyla sürekli eğitim programlarının uygulanması; özel gereksinim gruplarında müzik eğitimine yönelik nicel ve nitel veri toplama yöntemlerinin entegre edildiği çok boyutlu araştırma modellerinin benimsenmesi; özel gereksinimli bireylerin yaşam kalitesini artırmayı hedefleyen müzik eğitimi uygulamalarının, teorik ve pratik boyutlarının güçlendirilerek daha etkin hale getirilmesi önerilmektedir.

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An Examination of Music Education Programs for Different Special Needs Groups and Their Implications for Practice

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Abstract
This research aims to comprehensively examine the theoretical foundations and implementation processes of music education programs designed for special needs groups. The study explores the contributions of music education to the cognitive, affective, and social development of individuals within the context of learning theories and social interaction approaches. In this regard, the importance of structuring programs for various special needs groups-including those with visual, auditory, intellectual, and physical disabilities, as well as autism-on the basis of individualized and multidimensional approaches is emphasized. The research is based on a systematic content analysis of data obtained from a review of both national and international literature. The findings reveal not only the capacity of music education to provide cognitive support, enhance affective balance, and foster social interaction among students, but also highlight the challenges encountered in translating theoretical frameworks into practice. In conclusion, although existing music education programs positively contribute to the educational processes of individuals with special needs, significant structural and methodological shortcomings are observed during implementation. Strengthening technological infrastructure, supporting the professional development of educators, and adopting more effective individualized approaches are essential for improving the sustainability and overall effectiveness of these programs. The results of this study serve as a foundation for further research and offer valuable insights for policymakers, practitioners, and researchers dedicated to enhancing the quality and inclusiveness of music education for special needs populations. Furthermore, this study contributes to literature by providing recommendations for enhancing outcomes and program design in settings.

Keywords: Music education, special needs groups, program effectiveness

INTRODUCTION

Music education, as a discipline that provides multifaceted contributions to individuals' cognitive, affective, and psychomotor development, also plays a significant role in the processes of socialization and self-identity formation (Hallam, 2010). In particular, when it comes to individuals with special needs, the diverse learning environments offered by music are critical for the development of communication skills and the enrichment of emotional expression (Standley, 2002). In this context, the design, implementation, and evaluation of music education programs intended to support the educational processes of individuals requiring special education have become not only an academic research subject but also an imperative in terms of educational policies and practices (Ministry of National Education [MEB], 2018).

Different special needs groups encompass various types of disabilities, such as visual, auditory, intellectual, physical impairments, and autism, and it is expected that the educational programs planned for each group be individualized and multidimensional (Williams et al., 2023). For instance, music education practices designed for individuals with hearing impairments require an emphasis on rhythm and vibration perception; whereas, music activities conducted with individuals on the autism spectrum place greater emphasis on developing social interaction and communication skills (Standley, 2002). These differing needs play a decisive role in the selection

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of methods and materials in instructional processes (Hallam, 2010) and underscore the importance of developing programs that can serve as guides for educators, guidance counselors, and parents. Therefore, examining the music education programs of different special needs groups and identifying their practical implications not only contributes theoretically to the literature but also provides the necessary data to enhance the effectiveness of implementation. In this regard, the theoretical underpinnings and national as well as international studies related to music education programs for various disability groups will first be examined, followed by proposals for the effective and sustainable implementation of these programs based on data derived from the literature.

Moreover, this study has approached the research efforts aimed at elucidating the theoretical underpinnings and practical impacts of music education for special needs groups from multidimensional and interdisciplinary perspectives. In the international literature, the contributions of music education to children's cognitive, affective, and social development processes have been examined; within this context, music-based interventions have been posited to yield positive effects on neurological processes as well as cognitive functions such as attention and memory (Hallam, 2010). In the meta-analysis conducted by Standley (2002), the effectiveness of music therapy interventions for children with special needs was systematically demonstrated, revealing that these interventions serve a supportive role from both therapeutic and pedagogical perspectives. Furthermore, Wigram, Pedersen and Bonde (2002) illustrated how music therapy can be integrated into clinical practices and educational processes through interdisciplinary approaches, thereby unveiling the multifaceted impacts of music education.

Documents published by the MEB (2018) have provided guidance on structuring music education at the standard and policy levels within the scope of special education services, thereby reinforcing the theoretical foundations of the implementation process. In recent years, the integration of digital tools and interactive platforms into educational processes has significantly contributed to enhancing the accessibility and sustainability of music education. Additionally, studies that simultaneously address the pedagogical and therapeutic dimensions of music education underscore the importance of mixed-method research approaches (combining quantitative and qualitative methods) in determining the appropriate methods and techniques to be employed.

Within the scope of this study, several limitations are associated with the evaluation of music education programs for special needs groups and the generalization of the results. Moreover, the research predominantly favored data collection methods based on accessible published literature, official documents, and existing examples of practice; this approach has limited the scope of the data by not fully representing the individual experiences and differences that emerge during the implementation process. The methodological approaches and data analysis techniques used in the implementation process possess certain constraints in measuring the long-term effects and dynamics of the programs. Variability in classroom settings, inadequacies in material and technological infrastructure and differences in the expertise levels of educators may contribute to uncertainties in interpreting the results. In addition, it is deemed necessary to support the complex nature of various music education practices with larger sample groups and long-term research to fully comprehend them. In this context, it is assumed that:

1. The music education programs examined in the study were developed in consideration of the characteristics of the relevant disability groups and implemented in accordance with scientific principles.
2. The educators involved in the practices analyzed within the research possess sufficient knowledge and experience in the fields of special education and music education.
3. The data obtained from the literature review and practice examples are accurate and reliable.

The Purpose and Significance of the Research

The primary objective of this research is to examine the theoretical foundations and implementation processes of music education programs designed for various special needs groups (such as those with visual, auditory, intellectual, physical impairments, and autism), and to evaluate the effectiveness and sustainability of these programs. In this context, the study systematically investigates the criteria by which the exemplary practices and methods presented in the existing literature have been developed, as well as the successes and limitations observed in their application. Based on the findings, the aim is to establish a comprehensive and up-to-date framework that facilitates the more effective use of music in the educational processes of individuals with special needs. Furthermore, it is anticipated that the research outcomes will serve as a resource for future studies at the intersection of special education and music education, guiding practice and contributing to the adoption of a more inclusive educational approach.

Music education not only offers multifaceted benefits to the social, emotional, and cognitive development of individuals with special needs but also provides significant opportunities to support their communication and interaction skills (Hallam, 2010; Standley, 2002). However, the distinct needs and learning characteristics of each special needs group necessitate a careful and systematic approach in the design, implementation, and evaluation of music education programs (Van Vreden, 2023). In light of the limited data available on the scientific underpinnings and practical implications of current programs, this research is rendered particularly significant. The study aims to enhance the potential benefits of music in the education of individuals with special needs and to guide the translation of theoretical frameworks present in the literature into practical application.

Problem Statement and Research Questions

Music education is recognized as a multifaceted learning domain that supports the cognitive, affective, and psychomotor development of individuals with special needs (Hallam, 2010). However, the distinct learning needs of each special needs group (such as those with visual, auditory, intellectual, physical impairments, and autism spectrum disorder, among others) necessitate the adoption of individualized approaches in the design and implementation of music education (Grimsby & Jones, 2024; Stavrou, 2024). This scenario calls for interdisciplinary collaboration within both music education and special education, alongside program development efforts that are underpinned by robust scientific evidence (MEB, 2018).

Although the literature contains studies examining the effectiveness of music education practices for different special needs groups, these studies often rely on limited samples or lack an in-depth analysis of the implementations (Standley, 2002). In particular, there is a need for comprehensive program examples and research that elucidates the outcomes of these implementations regarding appropriate instructional materials, methods, and evaluation criteria tailored to each disability group. Consequently, examining the practical implications of music education programs for individuals with special needs and systematically documenting the experiences gathered during their implementation is essential to address this gap in the literature. In this context, the following research questions are posed:

1. What theoretical foundations underpin the current music education programs designed for various special needs groups (visual, auditory, intellectual, physical impairments, autism, etc.)?
2. What methods and techniques are utilized during the implementation process of these programs, and what challenges are encountered throughout this process?
3. When assessing the effectiveness of these programs in terms of student achievement and development, which gains and deficiencies become evident?

These research questions aim to provide a comprehensive framework for music education programs for special needs groups by analyzing the existing body of knowledge and shedding light on educators' practices.

THEORETICAL FRAMEWORK

Music Therapy Theories

Music therapy is an intervention approach that is based on the transformative role of music in supporting individuals' emotional expression, social interaction, and cognitive processes (Gebhardt et al., 2018). Systematic reviews conducted by Standley (2002) have demonstrated that music therapy interventions are effective in creating therapeutic effects, particularly among individuals with special needs. Additionally, within the framework of psychodynamic approaches, music is posited as a crucial tool that facilitates access to an individual's unconscious processes, thereby contributing to the reorganization of personality structure. These theoretical foundations provide a robust basis for structuring music education programs in a personalized and multidimensional manner, as they support the systematic integration of therapeutic interventions to enhance the effectiveness of implementation (Hallam, 2010).

Neuroscience Based Approaches

Contemporary research in neuroscience has demonstrated the impact of music education on both the structural and functional aspects of the brain. Findings obtained through fMRI, EEG, and other neuroimaging methods indicate that musical stimulation strengthens synaptic connections, thereby enhancing neuroplasticity and plays a crucial role in improving cognitive functions such as attention, memory and language (Koelsch, 2010; Wan & Schlaug, 2010). In this regard, it has been scientifically established that music education contributes directly to neurological development beyond providing merely an aesthetic and affective experience. The strategic initiatives emphasized in the documents published by the MEB, (2018) including the reinforcement of technological infrastructure and the integration of digital tools are pivotal in underpinning music education with neurological foundations and integrating it into educational processes. Thus, neuroscience-based approaches not only bolster the scientific underpinnings of music education programs but also facilitate the development of recommendations to address methodological shortcomings in practice.

Interdisciplinary Approaches

The integration of distinct disciplines, such as special education and music therapy, plays a critical role in enhancing the effectiveness of programs designed for the educational processes of individuals with special needs. The interdisciplinary model proposed by Wigram, Pedersen, and Bonde (2002) demonstrates that evaluating the therapeutic and pedagogical dimensions of music education concurrently reinforces the holistic impact of its application. Moreover, the use of digital technologies and interactive platforms increases the practicality of this interdisciplinary approach, thereby significantly contributing to the sustainability and efficiency of educational processes.

In the development and implementation of music education programs for individuals with special needs, it is of paramount importance to conduct an in-depth examination of music therapy theories, to adopt approaches supported by neuroscience-based data, and to integrate interdisciplinary application models. This theoretical framework, constructed in light of current studies in the literature, provides a scientific basis for the multifaceted contributions of music education to the development of individuals with special needs, thereby facilitating the creation of more inclusive and sustainable program models,

METHOD

This study is a descriptive literature review aimed at examining music education programs for various special needs groups within a theoretical framework. The research model is based on a qualitative approach that enables a holistic examination of the theoretical foundations and implementation processes of music education programs for different special needs groups.

This model involves a systematic review and content analysis of studies available in both national and international literature, with the aim of thoroughly investigating the building blocks, implementation strategies and outcomes of these programs. The research model is structured in accordance with systematic literature review methods recommended by authors such as Creswell (2013) and Cooper (2010), while also facilitating the synthesis of approaches regarding the effects of music education on individuals with special needs as outlined by Standley (2002) and Hallam (2010). The model primarily relies on a literature search conducted through selected academic databases using keywords such as “special needs,” “music education,” “program evaluation” and “implementation.” The obtained data were thematically classified and analyzed within the framework of implementation criteria emphasized in the documents published by the Ministry of National Education (MEB, 2018). This process allows for a comprehensive evaluation of both the theoretical underpinnings and the practical effectiveness of the programs. Thus, the research model aims to synthesize the existing body of literature in a systematic manner, ultimately drawing conclusions about the benefits and challenges encountered by individuals with special needs through music education.

Sample

In this study, since traditional field data were not collected and no direct participant-based application was conducted, the term “sample” refers not to a group of participants but rather to the literature pool incorporated into the research. Within the scope of this descriptive literature review, the national and international literature that addresses music education programs and practices for special needs groups serves as the sample. In the sample section, the criteria for selecting the sources used in the research and the databases from which they were obtained are clarified. In this context, the sample represents studies retrieved through relevant keywords (“music education,” “special needs,” “program evaluation,” “implementation,” etc.) and included in the review, rather than a limited or random participant group. Consequently, by ensuring that the selected sources are published within the last 15–20 years, peer-reviewed, and accessible, a comprehensive dataset has been constructed.

Data Collection Instruments

As part of the study, a literature review was conducted using academic databases as well as the National Thesis Center of YÖK. Official sources, such as regulations and guideline documents published by the Ministry of National Education (MEB), were also accessed to gather information on current music education policies. The titles, abstracts, and full texts of the studies identified through the search were examined; those deemed relevant to the research aims and questions and capable of contributing both theoretically and practically were included in the analysis. During this process, the extent to which the sources could be related in terms of problem scope and coverage was also taken into consideration.

Procedure

In the first stage, relevant studies were identified using the predefined keywords, with a significant portion of the data obtained from articles published in international peer-reviewed journals and theses. In the second stage, the bibliographies of these studies were examined to identify important classical and contemporary research in the field, thereby expanding the literature review. Following this, a content analysis was performed, whereby each study’s sections such as purpose, methodology, sample/participant profile (if applicable), main findings, and conclusions/recommendations were systematically analyzed. Additionally, MEB (2018) documents and theses published by selected universities were included, as they provided

insights into the guideline principles and practical examples of music education programs for different special needs groups.

Data Analysis

A qualitative approach was adopted for this research, employing thematic analysis through content analysis. The studies were classified according to themes such as "theoretical foundations of the programs," "methods and techniques used in implementation" and "challenges and deficiencies." Similar or complementary findings were grouped together and interpreted. This process involved examining the academic, social, and affective developmental outcomes of special needs individuals participating in music education programs, as well as the conditions under which the programs demonstrated success or limitations. The content analysis resulted in the compilation of the most frequently emphasized points in the literature and the presentation of a comprehensive framework aligned with the research questions. This approach was conducted in a manner that both reflects and synthesizes the existing literature, in accordance with the nature of a descriptive literature review.

FINDINGS

The Theoretical Foundations of Music Education Programs for Special Needs Groups

The theoretical foundations of music education programs for special needs groups are based on multilayered and interdisciplinary approaches that guide programs from their design phase through to implementation (Draper & Bartolome, 2021; Xin, Hwa, Cooper, & Wing, 2023; Daněk, 2024). These foundations are primarily shaped by psychological and pedagogical theories that emphasize the positive effects of music education on cognitive development, as well as on affective and social interactions. For instance, cognitive development theories demonstrate that musical activities support children's attention, memory, and problem-solving skills, while the perspectives of theorists such as Vygotsky and Piaget provide a theoretical basis for understanding the role of music in learning processes. Moreover, affective and social development theories detail the contributions of music education in areas such as emotional expression, empathy, and group interaction. Hallam (2010) and Standley (2002) have noted that music education enhances individuals' emotional regulation skills, strengthens social interactions, and positively influences personal development. In this context, the theoretical infrastructure of music education programs encompasses not only academic knowledge transfer but also therapeutic dimensions that support the social and affective development of students.

Theoretical approaches in the field of music therapy also serve as important reference points in the development of programs for special needs groups. Models developed by Wigram, Pedersen, and Bonde (2002) illustrate the therapeutic efficacy of music-based interventions, demonstrating that music education is not merely an artistic activity but also a complementary tool that contributes to individuals' emotional and psychological recovery processes.

Furthermore, the need to address the educational requirements of individuals with special needs through individualized approaches constitutes a significant component of the theoretical foundations. Studies by Aycan (2018) and Hernández-Bravo (2016) have emphasized that considering each student's unique learning style and needs enhances the effectiveness of music education programs. This approach, by adopting student-centered and participatory pedagogical models, facilitates the development of flexible and adaptive program structures.

The theoretical foundations of music education programs for special needs groups can be constructed on the integration of cognitive, affective, social, and therapeutic dimensions. This multidimensional framework is strategically utilized in the planning, implementation, and evaluation of programs to contribute to the holistic development of students. Consequently, music education programs provide a robust and scientifically grounded framework, both academically and practically, aimed at enhancing the quality of life for individuals with special needs.

Methods and Techniques Used in the Program Implementation Process and the Challenges Encountered

The methods and techniques employed in the program implementation process, as well as the challenges encountered, constitute critical factors in determining the effectiveness of music education practices for individuals with special needs. In this process, practitioners typically deploy multifaceted strategies such as individualized teaching methods, group activities, and the integration of digital technologies. Individualized approaches are designed to cater to each student's learning style and specific needs, thereby allowing for customized activities that target the sensory, cognitive, and affective development of the student. Simultaneously, group work plays a significant role in enhancing interpersonal interactions and developing social skills. The utilization of digital technologies and interactive materials is also recognized as an effective tool for increasing students' attention and motivation.

However, various challenges can hinder the effective implementation of these methods and techniques. First and foremost, the adequacy of educators' subject matter expertise and professional skills emerges as a determining factor in the success of the program. Inability on the part of teachers to accurately assess the learning styles and needs of individuals with special needs may lead to disruptions in the implementation of individualized planning. Additionally, the physical conditions of the classroom, as well as deficiencies in materials and resources, constitute structural challenges in the implementation process. In particular, the inadequacy of technological infrastructure within the classroom can impede the effective use of digital materials, thereby restricting students' experiences.

Furthermore, another significant issue encountered during the implementation process is linked to a lack of institutional support and coordination. When educational institutions are unable to provide sufficient financial and administrative support to ensure the sustainability of music education programs, the continuity of implementation may be adversely affected. This situation can lead to a decrease in motivation among both practitioners and students, thus complicating the achievement of the programs' anticipated effectiveness. In addition, inconsistencies between the overall curriculum framework and the specific needs of individuals with special needs may result in various adaptation problems during the instructional process.

Despite these challenges, continuous review of the methods and techniques used in the implementation process, support for educators' professional development, and enhancement of technological infrastructure can lead to the development of effective solutions. In this context, systematically analyzing the issues encountered in practice allows for the formulation of scientifically based strategies to make music education programs more flexible and effective (MEB, 2018; Standley, 2002; Hallam, 2010). Thus, music education practices for individuals with special needs can be continuously improved, both pedagogically and technologically, thereby maximizing the support provided to students' learning experiences.

Effectiveness of Current Programs and Identified Shortcomings in the Context of Student Achievement, Development and Gains

In this section, the effectiveness of music education programs for individuals with special needs is evaluated in terms of students' academic performance, social skill development, affective balance, and personal expressive abilities. Research indicates that music education contributes positively to students' cognitive processes by supporting attention, memory, and problem-solving skills (Hallam, 2010; Standley, 2002), while also significantly enhancing affective development (Wang, Huang, Zeb, Liu, & Wang, 2022; Muñoz & Mas, 2017). These gains are concretely observable through increased program participation, higher levels of interaction, and overall improvements in quality of life. However, data gathered during the implementation process also reveal certain shortcomings in the programs. In particular, the insufficient implementation of individualized education plans, deficiencies in the physical and technological infrastructure of classrooms, and limitations in educators' subject-specific expertise have been identified as key factors restricting the programs from achieving the desired level of

effectiveness (MEB, 2018). In this context, the shortcomings encountered during the implementation process manifest as issues related to inadequate material and resource provision, limited technological support in the classroom, and problems concerning teachers' domain knowledge and practical experience.

The effectiveness of the programs is measured and analyzed using both quantitative and qualitative data collection methods. Quantitative data are derived from students' examination performances, active participation rates in the learning process, and observed behavioral changes, while qualitative data are supported by methods such as student and teacher interviews, observations, and case studies. This multidimensional evaluation approach not only reveals the strengths and gains of the programs but also systematically identifies areas that require improvement.

The effectiveness of music education programs for individuals with special needs is evaluated based on the positive gains that students achieve in their academic, social, and affective development. However, the shortcomings observed in current implementations remain a significant topic of debate regarding the sustainability and long-term success of these programs. This situation underscores the need for supporting the professional development of practitioners as well as for improvements in infrastructure and resource allocation. Developing innovative strategies to enhance program effectiveness and continuously reviewing the implementation processes can provide a solid foundation for future research.

RESULTS AND DISCUSSION

Results

This research has provided an evaluation of music education programs for special needs groups by examining their theoretical foundations, the methods and techniques employed during implementation, as well as the programs' effectiveness in relation to students' achievements and shortcomings. The findings reveal that music education significantly contributes to the cognitive, affective, and social development of individuals with special needs, while also demonstrating that structural challenges encountered during implementation are among the key factors that limit the programs' success.

The positive effects of music education on cognitive development, affective balance, and social interaction were analyzed within the frameworks of learning theories and neurological development models. These foundations underscore the necessity of supporting programs for special needs groups with individualized and participatory pedagogical approaches (Hallam, 2010; Standley, 2002). A detailed analysis of the methods and techniques used in the implementation process highlighted the importance of developing approaches tailored to students' needs through individualized teaching strategies, group activities, and the integration of digital technologies. However, factors such as the educator' level of expertise, the physical and technological conditions of the classroom, and the lack of institutional support were identified as fundamental issues that restrict the effectiveness of implementation (MEB, 2018).

Evaluations regarding the effectiveness of the programs indicated that music education initiatives contribute positively to the academic achievements, social skill development, affective gains, and personal expression of individuals with special needs. Nevertheless, limitations such as the insufficient consideration of individual differences, interruptions in classroom interaction, and resource deficiencies were found to hinder the attainment of the desired level of impact (Standley, 2002).

Finally, to enhance the sustainability and effectiveness of music education programs for special needs groups, the study emphasizes the need to strengthen technological infrastructure, support continuous professional development for educators, update educational materials, and more effectively implement individualized approaches. These strategies aim to address current deficiencies and offer long-term solutions to improve the quality of life for individuals with special needs (Wigram, Pedersen & Bonde, 2002; MEB, 2018).

In summary, this research has addressed both the theoretical and practical dimensions of music education programs for special needs groups from a holistic perspective, thereby laying a methodological foundation for future studies and offering recommendations for practitioners and educators. The results highlight the potential impact of music education on individuals with special needs and identify strategic interventions necessary to enhance this impact.

Discussion

In the discussion section, the theoretical foundations, the methods and techniques employed during the implementation process, and the identified challenges are examined. The findings demonstrate that the synthesis of theoretical approaches from the literature and practical field applications underscores the critical role of music education in the educational processes of individuals with special needs.

Firstly, when evaluating the programs from the standpoint of their theoretical foundations, the data collected in the study confirm that the positive contributions of music education to cognitive, affective, and social development are underpinned by learning theories and neurological development models. The approaches proposed by Hallam (2010) and Standley (2002) have shown that music education improves students' attention, memory, and problem-solving skills while also contributing to the development of emotional regulation and social interaction skills. In this context, it has been determined that programs for special needs groups should be structured within individualized and participatory pedagogical models that align with each student's unique learning style. According to Johansen (2007), basing the theoretical framework on solid foundations is one of the most important factors that enhance the feasibility and sustainability of the programs.

The methods and techniques employed during the implementation process and the challenges encountered emphasize the practical obstacles in the application of these programs. The research findings indicate that methods such as individualized teaching strategies, group activities, and the integration of digital technologies should be implemented in a manner that addresses the specific needs of the students. However, issues such as insufficient professional knowledge among educators, inadequate classroom conditions, and technological infrastructure represent key factors that limit the programs' effectiveness. The documents published by MEB (2018) stress that these shortcomings, in terms of both material resources and educator support, should be systematically addressed. This suggests that the challenges encountered in practice can be overcome through solution-oriented strategies developed by educational institutions.

When evaluating program effectiveness in terms of academic achievement, social skill development, and affective gains, it is evident that music education plays an important role in enhancing the quality of life for individuals with special needs. The research indicates that there are notable improvements in students' participation rates, as well as in communication and social interaction skills; however, it also shows that certain deficiencies such as the inadequate accommodation of individual differences and insufficient classroom interaction impede the programs from reaching the desired level of impact. Findings reported by Standley (2002) highlight the potential of music education, yet they also indicate that its full benefits are not realized due to these limitations.

Strategies such as strengthening technological infrastructure, supporting ongoing professional development for educators, and updating educational materials can play a crucial role in increasing program effectiveness. Recommendations supported by comprehensive music therapy models, as presented by Wigram, Pedersen and Bonde (2002), offer valuable guidance for future applications.

Recommendations

In light of the study's findings, it is recommended that:

Programs should be structured to both reinforce their theoretical foundations and address the practical challenges encountered during implementation.The positive effects of music education on cognitive, affective, and social development be firmly grounded in learning theories, neurological development models, and social cognition theory. Educators develop individualized educational plans that consider the unique differences of students with special needs.The technological infrastructure within classrooms be strengthened and educational materials be regularly updated. Ongoing professional development programs for teachers be implemented to support their career growth. Multidimensional research models that integrate quantitative and qualitative data collection methods for music education in special needs contexts be adopted. Music education practices aimed at enhancing the quality of life for individuals with special needs be strengthened both theoretically and practically to ensure greater effectiveness.

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Determination of Turkish Teachers' Perceptions Towards Turkish Lesson Activities

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Abstract
Activities are an important element that supports learning and forms the basis of student-centered approaches in education and training processes. In this context, the aim of this study is to determine the perceptions of Turkish teachers towards the activities in Turkish textbooks. In the study, the relational screening model, one of the quantitative research methods, was used. In line with the purpose of the study, the study group was determined through purposive sampling. The study group consisted of 225 Turkish teachers who volunteered to participate in the study. Data were collected using a semi-structured interview form prepared by the researchers and the "Turkish Teachers' Perceptions of Turkish Course Activities Scale". In the study, it was concluded that Turkish teachers have a very high level of perception towards Turkish course activities, that their perceptions of activities differ significantly according to age, and that there is no significant difference according to the gender variable.

Keywords: Turkish lesson, activity, perception

INTRODUCTION

In education and training processes, activities are an important element that supports learning and forms the basis of student-centered approaches. While the role of the teacher as a transmitter of knowledge is at the forefront in the traditional understanding of education, modern educational approaches emphasize the active participation and experiences of the student. In this context, activities make learning more effective and meaningful by enabling students to take an active role in the processes of accessing information, developing skills and gaining experience (Özmantar et al., 2010).

In general terms, an activity can be defined as any kind of work planned for a specific purpose that enables the active participation of the individual in the learning process. This definition shows that activities are not only limited to the classroom, but also include activities at home, in the garden and even while playing games. From this perspective, activities aim not only to help students acquire knowledge but also to develop skills such as problem solving, critical thinking, co-operation and communication. The concept of activity aims to put the student at the centre in learning-teaching processes and is based on the principle of learning by doing and living. This principle argues that students can achieve more permanent and meaningful learning through experiences. Activity appears as a basic component of learning processes. Activities that contribute to the development of individuals both in educational environments and in daily life are also associated with various learning approaches. Textbooks used in Turkish language teaching and the activities in these textbooks have a vital importance in terms of developing students' language skills, supporting their thinking processes and enriching their learning experiences (Batur & Özdemir, 2021; Baş, Turhan & Karaca, 2017). These activities not only help students learn grammar rules, but also aim to improve their reading, writing, listening and speaking skills (Çevik & Güneş, 2017). Effective activities should encourage students' active participation, develop their high-level cognitive skills (analysis, synthesis, evaluation, creativity) and make learning more meaningful (Oryaşın, 2021). For this reason, Turkish teachers'

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perceptions of activities in textbooks are of great importance in terms of the effectiveness of activities and their role in learning processes.

Activities aim to develop students' various thinking skills. These skills include recall, inference, problem solving, self-evaluation, discussion, analysing, questioning, transforming, comparing, evaluating and designing (Bayrak Özmutlu & Kanık Uysal, 2021). However, some studies show that the activities in textbooks give more weight to recall skills and less to high-level skills such as problem solving, self-evaluation and discussion (Karadağ & Tekercioğlu, 2019).

The design and content of activities are critical for the effective management of learning processes. Activities should be appropriate to the level of the student, interesting, supported by various materials and associated with daily life (Batur & Özdemir, 2021). Visual elements (pictures, photographs, graphics, cartoons) used in the activities should enrich learning, but they should be compatible with the text and encourage students to think (Sarıkaya, 2019). Some studies indicate that the use of visuals in textbooks is insufficient and that visuals are generally not compatible with the content (Muradoğlu & Işık, 2019). In addition, making the activities suitable for digital use is important in terms of ensuring students' active participation in the lesson and making learning more fun.

Activities in textbooks aim to develop students' various thinking skills. These skills include cognitive skills such as recall, comprehension, application, analysis, synthesis and evaluation, as well as higher-order thinking skills such as self-evaluation, discussion, problem solving, interpretation and design (Bayrak Özmutlu & Kanık Uysal, 2021). However, some studies show that the activities in textbooks generally remain at the recall level and do not adequately support higher-order thinking skills (Tosunoğlu & Demir, 2014). In particular, it is seen that less weight is given to skills such as analysis, synthesis and evaluation. This may negatively affect the development of students' critical thinking skills. In addition, some activities may be aimed directly at evaluation rather than developing prediction skills (Bayrak Özmutlu & Kanık Uysal, 2021; Karadağ & Tekercioğlu, 2019).

Activities in Turkish textbooks have important functions such as developing students' language skills, supporting their thinking processes and enriching their learning experiences (Batur & Özdemir, 2021; Erdoğan, 2014; Güneş, 2017). These activities aim for students to achieve certain outcomes and these outcomes include language skills (reading, writing, listening, speaking), thinking skills (analysis, synthesis, evaluation) and other cognitive processes (Baş, Turhan, & Karaca, 2017; Sarıkaya, 2019). Activities are expected to encourage student participation, develop high-level cognitive skills and activate learning (Oryaşın, 2021). In this context, Turkish teachers' perceptions of activities in textbooks are of great importance in terms of the effectiveness of activities and their role in learning processes.

Rather than presenting information, teachers should ensure the active participation of students, create a discussion environment and allow students to create products (Güneş, 2017). Measurement and evaluation processes are an integral part of the activities. These processes are used to determine students' prior knowledge and evaluate their learning levels (Göçer, 2008). Assessment criteria can be determined by teachers but should not be imposed on students. Teachers' roles during activities are to guide students, facilitate learning and provide support according to their individual needs (Baş, Turhan, & Karaca, 2017). Teachers should encourage students to ask questions, create discussion environments and help students take responsibility for their own learning processes (Güneş, 2017). The role of teachers is to manage the learning process and guide students rather than transferring knowledge. Measurement and evaluation processes in activities are an integral part of learning (Göçer, 2008). These processes are used to determine students' prior knowledge, assess their learning levels and give feedback. Assessment criteria can be determined by teachers, but students should also be involved in this process (Çerçi, 2016).

However, existing studies reveal that the activities in Turkish textbooks are not always of the desired quality (Çevik & Güneş, 2017; Güneş, 2017). Some activities are in the nature of

exercises and do not comply with the principles of the constructivist approach (Güneş, 2017). It was determined that student interests and needs were not paid enough attention, most of the activities were repetitive and did not sufficiently support students' critical and creative thinking skills (Tosunoğlu & Demir, 2014). In addition, it is seen that the use of mental skills in the activities is insufficient and the principles of interaction and social constructivist approach are not paid enough attention (Karadağ & Tekercioğlu, 2019).

According to the results of the literature review, teachers' perceptions of the activities can be summarised as follows:

Quality and Inadequacy of Activities: Teachers think that some of the activities in the textbooks remain at the exercise level and are not suitable for the constructivist learning approach (Güneş, 2017; Batur & Özdemir, 2021). It is stated that such activities are based on repetition rather than developing students' mental skills (Güneş, 2011). In addition, it is also stated that the activities do not fully address the interests and needs of the students (Güneş, 2017).

Relationship of Activities with Outcomes: Some teachers state that the activities do not fully overlap with the learning outcomes in the curriculum (Batur & Özdemir, 2021). Especially the fact that grammar acquisitions are not given enough space is an issue criticised by teachers. In addition to the teachers who think that the writing activities are appropriate for the learning outcomes, there are also opinions that the activities are below or above the student level. It is also stated that there are not enough activities suitable for the targeted outcomes in reading passages (Muradoğlu & Işık, 2019).

Appropriateness to Student Level: Many teachers state that the activities in the textbooks are not suitable for the student level. In particular, it is stated that visual reading activities are not interesting enough for children and the visuals are at a very simple level (Muradoğlu & Işık, 2019). In addition, the low number of words in the activities16 is a problem expressed by some teachers. This may cause difficulties in the learning process (Aydın, 2024).

Variety of Activities and Repetition: Teachers frequently criticise that most of the activities in the textbooks are similar and repetitive. Teachers emphasise that the activities should be more diverse and creative. It is seen that especially speaking activities are stereotyped activities and there is not enough space for original activities (Aydın, 2024; Güneş, 2017).

Difficulties in Implementing Activities: Teachers stated that they encountered problems such as lack of time, overcrowded class sizes and low developmental levels of students while implementing the activities. This situation may make it difficult to realise the activities in accordance with their purpose. Some teachers also emphasise the importance of parental support in the implementation of activities (Erdoğan, 2014).

Purpose of the Research

Turkish textbooks and Turkish lesson activities are the most basic resources for Turkish teachers to conduct Turkish lessons. In this context, the aim of this study is to determine the perceptions of Turkish teachers towards the activities in Turkish textbooks. In line with this purpose, the questions to be answered in the research process are as follows:

1- What is the level of Turkish teachers' perceptions of Turkish lesson activities?

2- Do Turkish teachers' perceptions of activities differ according to age?

3- Do Turkish teachers' perceptions of activities differ according to gender?

4- Do the activity perceptions of Turkish teachers differ according to professional seniority?

5- Do Turkish teachers' perceptions of effectiveness differ according to the faculty of graduation?

6- Do Turkish teachers' perceptions of effectiveness differ according to educational level?

7- Do Turkish teachers' perceptions of effectiveness differ according to the number of students in their classrooms?

METHOD

In this study, the relational survey model, one of the quantitative research methods, was used to determine the perceptions of Turkish teachers towards Turkish lesson activities. According to Karasar (2024, p. 81), the relational survey model is 'a research model that aims to determine the existence or degree of change between two or more variables.' Within the framework of this method, it was tried to reveal the perceptions of Turkish teachers working in secondary schools towards Turkish lesson activities.

Study Group

In line with the purpose of the study, the study group was determined through purposive sampling. According to Creswell (2019, pp. 266-267), researchers purposefully select individuals and research locations in order to have information about the main event. The study group of the research, which was selected to determine the perceptions of Turkish teachers towards Turkish lesson activities, consisted of 225 Turkish teachers working in public schools in Hatay province and participating in the research voluntarily.

Numerical results regarding the descriptive characteristics of the participants are shown in Table 1:

Table 1. Participant Information

Features	n	%
Age		
20-25	46	20.4
26-30	56	24.9
31-35	53	23.6
36-40	42	18.7
41-50	20	8.9
Over 50	8	3.6
Gender		
Female	129	57.3
Male	96	42.7
Year of Work		
1-5	107	47.3
6-10	45	19.9
11-15	44	19.5
16-20	12	5.3
21 and above	17	7.5
Graduate Faculty		
Faculty of Education	213	94.7
Other	12	5.3
Education Level		
Bachelor's degree	189	84
Master's degree graduate	36	16
Number of Students		
0-15	16	7.1
16-20	40	17.8
21-25	45	20
26-30	71	31.6
31-35	38	16.9
36 and above	15	6.7

The majority of the teachers in the study group (n=56, 14.9%) were between 26-30 years old and 57.3% of them were female. It was determined that the majority of the teachers had undergraduate education (n=189, 84%) and graduated from the faculty of education (n=213,

94.7%). It was also determined that 47.3% of them had been working for 5 years or less (Table 1).

Data Collection and Analysis

The data in the study were collected with a semi-structured interview form consisting of 7 items prepared by the researchers and the 'Turkish Teachers' Perceptions Scale for Turkish Course Activities' prepared by Şahan and Çerçi (2018). In order to determine the validity level of the scale, construct validity was examined and exploratory factor analysis and confirmatory factor analysis applications were performed. For each item in the scale, the participants were asked to tick one of the five-point Likert-based boxes graded between 'strongly disagree' and 'strongly agree'. Cronbach's alpha reliability coefficient was found to be 0.97 in the study in which the scale applied in the research was developed and 0.94 in this study.

The semi-structured interview form consisting of 7 items was checked by five field experts and the form was finalised after the necessary corrections were made. Before starting the study, the necessary permissions were obtained from Hatay Mustafa Kemal University Social and Human Sciences Research and Publication Ethics Committee (decision dated 04.04.2024 and numbered 24). Data were collected electronically through Google forms.

Before the analysis, it was checked whether the assumptions were met. Taking into account the number of participants, the assumption test (normality analysis) for all groups was evaluated with the Kolmogorov-Smirnov test and skewness and kurtosis values. As a result of the evaluations, it was determined that the participants' perception scores towards course activities did not meet the assumptions of parametric analysis on a group basis. Therefore, the data were analysed with nonparametric tests. In this context, Mann Whitney U and Kruskal Wallis analyses were performed using SPSS 20 software.

RESULTS

As a result of analysing the perceptions of Turkish teachers towards Turkish lesson activities, the following findings were obtained:

The perception levels of the Turkish teachers participating in the study towards Turkish lesson activities are shown in Table 2:

Table 2. Turkish teachers' perception levels towards Turkish course

N	$\bar{X}$	SS
225	124,80	24,759

Table 2 shows the mean values of the total scores of 225 participants, ignoring the variables. The mean value is 124.80, which indicates a very high level of perception.

Table 3 shows the perception levels of the Turkish teachers participating in the study towards Turkish lesson activities according to age variable:

Table 3. Perception of Turkish lesson activities according to age

Variable	Age Range	N	Rank Mean	sd	X^2	p	Significant difference
Age	A: 20-25	46	138,45	5	13,528	,019	A-C
	B: 26-30	56	116,36				A-D
	C: 31-35	53	107,80				A-E
	D: 36-40	42	94,24				
	E: 41-50	20	92,10				
	F: 50 and above	8	128,38				

According to Table 3, there is a significant difference between the groups depending on the age variable (X^2=13,528, p<0,05). The mean perception scores of the teachers in group A (20-25 years old) were higher than the averages of the other groups and this situation showed a

significant difference with groups C-D-E. The difference is in favour of group A. A-F group averages are close to each other and there is no significant difference between these groups. Similarly, no significant difference was observed between other age groups.

The perception levels of the Turkish teachers participating in the study towards Turkish lesson activities according to gender variable are shown in Table 4:

Table 4. Perception of Turkish lesson activities according to gender

Gender	N	Rank mean	Row total	U	p
Female	129	119,75	15448,00	5321,000	,071
Male	96	103,93	9977,00		
Total	**225**				

According to the gender variable, there is no statistically significant difference between the mean perception scores of female and male teachers (U=5321,00, p>0,05).

Table 5 shows the perception levels of the Turkish teachers participating in the study towards Turkish lesson activities according to the professional seniority variable:

Table 5. Perception of Turkish lesson activities according to the variable of professional seniority

Variable	Seniority	N	Rank Mean	sd	X^2	p	Significant difference
Professional seniority	A: 1-5	107	136,70	4	37,321	,000	A-B
	B: 6-10	45	80,30				A-C
	C: 11-15	44	82,43				D-B
	D: 16-20	12	139,71				D-C
	E: 21 an over	17	110,68				
	Total	**225**					

Table 5 shows the comparative analysis of the mean perception scores of teachers with different seniority levels. According to the Kruskal-Wallis analysis, there is a statistically significant difference between the groups depending on the seniority variable (X^2=37,321, p<0,05). The two groups with the highest mean values are D (16-20 years) and A (1-5 years) teachers respectively. The difference is between these two groups and other groups. In other words, a statistically significant difference was found between group A and groups B and C, and between group D and groups B-C. The difference is in favour of the groups with high mean values (A and D).

Table 6 shows the perception levels of the Turkish teachers participating in the study towards Turkish lesson activities according to the faculty of graduation variable:

Table 6. Perception towards Turkish course according to the faculty of graduation

Graduate Faculty	N	Rank Mean	Row total	U	p
Faculty of Education	213	109,68	23362,00	571,00	,001
Other	12	171,92	2063,00		
Total	**225**				

According to the results of Mann Whitney U analysis according to the faculty of graduation variable, the mean scores of the teachers in the other category are higher than the graduates of the faculty of education. This situation created a statistically significant difference in favour of the other group in the intergroup comparison (U= 571,00, p<0,05).

The perception levels of the Turkish teachers participating in the study towards Turkish lesson activities according to the education level variable are shown in Table 7:

Table 7. Perception towards Turkish lesson according to education level

Educational Level	N	Rank mean	Row total	U	p
Bachelor's degree	189	114,69	21675,50	3083,50	,373

Master's degree graduate	36	104,15	3749,50
Total	**225**		

The mean scores of the teachers according to the education level variable are close to each other. Therefore, it was observed that there was no statistically significant difference between the mean scores of the groups (U=3083,50, p>0,05).

The perception levels of the Turkish teachers participating in the study towards Turkish lesson activities according to the average number of students are shown in Table 8:

Table 8. Perception towards Turkish lesson according to the number of students

Variable	Seniority	N	Rank Mean	sd	X^2	p	Significant difference
Number of students	A: 0-15	16	138,41	5	32,922	,000	A-D, A-E
	B: 16-20	40	139,08				B-C, B-D, B-E
	C: 21-25	45	113,82				C-D
	D: 26-30	71	82,04				E-D
	E: 31-35	38	113,00				F-C, F-D, F-E
	F: 36 and above	15	160,43				
	Total	**225**					

Based on the number of students in the groups, there were differences in the mean perception scores of the teachers. The highest mean values were in groups F (36 and above), B (16-20), A (0-5), C (21-25), E (31-35) and D (26-30), respectively. The difference between these averages was analysed by Kruskal Wallis analysis. According to the findings, the difference between the averages is statistically significant (X^2=32,922, p<0,05). The difference observed between A-D and A-E groups is in favour of A group; the difference between B-C, B-D and B-E groups is in favour of B group; the difference between C-D group is in favour of C group; the difference between E-D is in favour of E group; the difference between F-C, F-D and F-E groups is in favour of F group.

CONCLUSION and DISCUSSION

In this study, it was aimed to determine the perceptions of Turkish teachers towards Turkish lesson activities. Turkish teachers' general perception scores from the scale were analysed. The average value of the 225 teachers who participated in the study was 124,80 and it was concluded that they had a very high level of perception. When the related literature is examined, the results of different studies (Şahan, 2017; Şimşek, 2015; Kaya, 2015), in which teachers' perceptions towards activities are at a high level, support the results obtained in our research.

In the first sub-problem of the research, the relationship between the perceptions of Turkish teachers towards Turkish lesson activities and their ages was examined. The mean perception scores of the teachers in group A (20-25 years old) were higher than the averages of the other groups and this situation showed a significant difference with groups C-D-E. As a result, it can be said that Turkish teachers' perceptions of effectiveness differ significantly according to age. It can be thought that the emergence of such a result may be due to the fact that Turkish teachers are dynamic, young and new to the profession in the first five years of their profession. When the related literature is examined, it is seen that there are research results that support (Şahan, 2017) and do not support (Şimşek, 2015; Üner, 2010) the research result in terms of professional seniority.

According to the results obtained from the research, no statistically significant difference was found between the mean perception scores of teachers in the female and male categories. According to the professional seniority variable, the highest group of Turkish teachers' perceptions towards Turkish lesson activities are the teachers with seniority between D (16-20 years) and A (1-5 years). The difference is between these two groups and other groups. According to the results of the analyses made according to the faculty of graduation variable, the

mean scores of the teachers in the other category are higher compared to the graduates of the faculty of education. The mean scores of the teachers according to the education level variable are close to each other. Therefore, it was observed that there was no statistically significant difference between the mean scores of the groups. Based on the number of students in the groups, there were differences in the mean perception scores of the teachers. When the literature is examined, there are studies supporting the results of the research in the context of professional seniority (Şimşek, 2015; Üner, 2010), education level (Şahan, 2017) and undergraduate programme (Özçakmak, 2011; Güfta & Özçakmak, 2013; Şahan, 2017).

When the results of the research are analysed holistically, Turkish teachers' perceptions of Turkish lesson activities are of great importance in terms of the quality of the activities and the effectiveness of the learning process. More effective and student-centred activities should be designed by taking teachers' criticisms and suggestions about the activities in the textbooks into consideration. The activities should be organised in accordance with the constructivist approach, diverse, appropriate to the level of the students and overlapping with the learning outcomes. In this way, Turkish lessons should be aimed to develop students' language skills, critical and creative thinking skills and contribute to their correct and effective use of Turkish. It is of great importance that teachers play an active role in this process, evaluate the activities in the textbooks and adapt them according to student needs.

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6 Şubat 2023 Depremleri Sonrası Konteyner Kentte Yaşayan Ortaokul Öğrencilerinin Yaşadıkları Sorunların Okula Yansımaları

6 February 2023 Effects of the Problems Experienced by Secondary School Students Living in Container City after the Earthquakes

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Öz

Bu çalışmanın amacı, 6 Şubat 2023 depremleri sonrası konteyner kentte yaşayan ortaokul öğrencilerinin yaşadıkları sorunları ve bu sorunların okula yansımalarını yönetici, öğretmen, veli ve öğrenci görüşlerine göre belirlemektir. Çalışma nitel araştırma yöntemlerinden durum çalışması yöntemi ile yürütülmüştür**.** Çalışma grubunu 2023-2024 eğitim öğretim yılı bahar döneminde Malatya ili Battalgazi ilçesine bağlı resmi ortaokullarda görev yapan 5 yönetici, 10 öğretmen ve bu okullarda öğrenim gören 10 öğrenci ile velileri oluşturmaktadır. Çalışmadaki veriler, yarı yapılandırılmış görüşme formu ile elde edilmiştir. Toplanan veriler betimsel analiz ve içerik analizi kullanılarak analiz edilmiştir. Çalışmada elde edilen bulgulara göre; öğrencilerde davranış problemleri görüldüğü, psikolojik sorunlara maruz kaldıkları, yeni okullarına ve sınıflarına uyumda güçlük çektikleri, akademik başarılarının düştüğü, dikkat eksikliği ve motivasyon kaybı yaşadıkları ortaya çıkmıştır. Konteyner alanının dar olmasından kaynaklı ders çalışamama, mahremiyet sınırlarının korunamaması gibi sorunların baş gösterdiği sonucuna ulaşılmıştır. Ayrıca öğrencilerde içine kapanma, boşluk hissine kapılma, kendini ifade etmede yetersizlik, çabuk sinirlenme, argo sözcük kullanma, akran zorbalığı, saldırgan davranışlar ve şiddete eğilimin arttığı da araştırmanın bulguları arasındadır. Çalışma bulgularına göre öğrencilerin yaşadıkları problemlere yönelik okul aile iş birliğinin artırılması, velilere gerekli eğitimlerin verilmesi, öğrencilerin aynı okul çatısı altında toplanması yerine farklı okullarda eğitim görmelerinin sağlanması, konteyner ortamının ve maddi olanakların iyileştirilmesi, farklı eğitim olanaklarının geliştirilmesi gibi önerilerde bulunulmuştur.

Anahtar Kelimeler: Deprem, eğitim, öğrenci, öğretmen, veli.

Abstract

The aim of this study is to determine the problems experienced by secondary school students living in container cities after the earthquakes of 6 February 2023 and the effects of these problems on the school according to the views of administrators, teachers, parents and students. The study was conducted with the case study method, one of the qualitative research methods. The study group consists of 5 administrators, 10 teachers working in official secondary schools in Battalgazi district of Malatya province in the spring term of 2023-2024 academic year, and 10 students and their parents studying in these schools. The data in the study were obtained through a semi-structured interview form. The collected data were analysed using descriptive analysis and content analysis. According to the findings of the study, it was revealed that students had behavioural problems, were exposed to psychological problems, had difficulty in adapting to their new schools and classrooms, their academic achievement decreased, and t[4]hey experienced attention deficit and loss of motivation. It was concluded that

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problems such as inability to study due to the narrowness of the container area and inability to protect privacy boundaries arose. In addition, it was also found that students became withdrawn, felt a sense of emptiness, inadequate self-expression, quick temper, use of slang words, peer bullying, aggressive behaviours and tendency to violence increased.According to the findings of the study, suggestions such as increasing school-family cooperation, providing necessary trainings to parents, ensuring that students are educated in different schools instead of gathering them under the same school roof, improving the container environment and financial opportunities, and developing different educational opportunities were made for the problems experienced by the students.

Keywords: Earthquake, education, student, teacher, parent.

GİRİŞ

Afet; insanların hayatını ve eylemlerini etkileyen, maddi ve manevi olarak kayıplara neden olan, etkilediği kişilerin elindeki olanakların eksik ve yetersiz kaldığı olağanüstü olayların sonucudur (Kadıoğlu, 2011). Doğal afet, çoğunlukla kontrol edilemeyen sebeplerden kaynaklı ortaya çıkmaktadır. Doğal afetleri yavaş gelişen ve hızlı gelişen şeklinde sınıflamak mümkündür. Çevre kirliliği, erozyon, ormanların tahrip edilmesi, kuraklık gibi afetler zamanla ortaya çıkan ve yavaş gelişen doğal afetlerdir. Ancak ne zaman meydana geleceği önceden kestirilemeyen ve birdenbire gerçekleşen volkanik patlamalar, toprak kayması, çığ düşmesi, su baskınları gibi afetler ise hızlı gelişen doğal afetlerdir. Ani gelişen doğal afetlerden biri de depremdir (Afet ve Acil Durum Yönetimi Başkanlığı [AFAD], 2024). Deprem, yer kabuğunun içinde biriken enerjinin levhalar arasındaki çatlaklardan dışavurumu sonucu oluşmaktadır (Sözcü, 2019). Bu enerji titreşim veya sallantı şeklinde hissedilebilir.

Dünyanın hemen her yerinde yüzlerce hatta binlerce deprem meydana gelmektedir. Sarsıntısı hissedilmeyen depremler olduğu gibi yıkıcı ve can kayıplarının yaşandığı depremler de olmaktadır. Amerika Birleşik Devletleri Jeolojik Araştırmalar Servisi (USGS)'nin açıkladığı raporlarda her yıl yaklaşık 500.000 depremin yaşandığı, bunların sadece %20'sinin hissedilebildiği ve yaklaşık 100 tanesinin hasara neden olduğu belirtilmiştir (AFAD, 2018).

Türkiye, coğrafi konumu dolayısıyla en aktif deprem kuşakları üzerinde bulunduğu için depremin en sık yaşandığı ülkelerden biridir (AFAD, 2018). Türkiye, 6 Şubat 2023 tarihinde merkez üsleri Kahramanmaraş'ın Pazarcık ilçesi ve yine Kahramanmaraş'ın Elbistan ilçesi olan iki büyük depremle sarsılmıştır. Bunların ilki saat 04.17'de 7,7 şiddetinde, ikincisi ise saat 13.24'te 7,6 şiddetinde olmuştur. Sonrasında çok sayıda artçı deprem bölgede kendini hissettirmeye devam etmiştir. 27 Aralık 1939'da Erzincan'daki 7,9 şiddetindeki depremden sonra yaşanan en büyük iki deprem olması dolayısıyla "Asrın Felaketi" olarak anılmıştır. "Son Yüzyılın En Şiddetli Depremi" olarak gazete haberlerine manşet olan (Anadolu Ajansı, 2023) bu depremler Kahramanmaraş, Hatay, Malatya, Adıyaman, Adana, Diyarbakır, Gaziantep, Kilis, Osmaniye ve Şanlıurfa illeri başta olmak üzere birçok ilimizi etkilemiştir. Azımsanmayacak kadar ev, dini yapılar, sağlık ve eğitim kurumu, kamu kurumu binaları yıkılmış ya da orta-ağır derecede hasar almıştır. Hem can hem mal kaybının olduğu bu büyük depremlerde toplam 53.537 vatandaşımız hayatını kaybederken 107.213 vatandaşımız ise yaralanmıştır (Türk Tabipleri Birliği [TTB], 2024). 6 Şubat 2023 depremleri, Türkiye tarihi boyunca can kaybının en fazla yaşandığı deprem olarak yerini almıştır (Darga, 2023). Ülkemiz bu depremler için dördüncü seviye acil yardım çağrısı başlatmıştır.

Depremden sonra ülke genelinde ilk aşamada 20 Şubat'a kadar eğitim öğretim faaliyetleri ertelenmiştir. 20 Şubat'ta 71 il eğitime kaldığı yerden devam ederken deprem illeri üç kategoriye ayrılmıştır. Birinci kategoride bulunan Diyarbakır, Kilis ve Şanlıurfa 1 Mart'ta, ikinci kategoride bulunan Adana, Gaziantep ve Osmaniye 13 Mart'ta, üçüncü kategoride bulunan Malatya, Adıyaman, Kahramanmaraş ve Hatay illerinin bazı ilçeleri 27 Mart'ta eğitime tekrar devam etmiştir. Diğer ilçelerde ise eğitime devam etme kararı ilgili valiliklere verilerek hasar tespit çalışmaları sonucu sağlamlık raporu alan okullar aralıklı bir şekilde açılmıştır (MEB, 2023).

Ülkemizde yaşanan depremler toplumu maddi ve manevi yönden olumsuz etkilemektedir. Bu etkiler sosyal, ruhsal, ekonomik, çevresel ve fiziksel olarak görülebilmektedir (Tan-Gülünay, vd., 2024). Bu etkilerin en fazla hissedildiği alanlardan biri de eğitim hizmetleridir. Okul binalarının hasar alması, eğitim araç ve gereçlerinin kullanılamaz hale gelmesi, öğretmen, öğrenci ve diğer personelden can kaybının yaşanması gibi birçok olumsuz durumla karşı karşıya kalınabilmektedir (Demir-Yıldız ve Demir-Öztürk, 2023). Bu durum öğretim faaliyetlerinin devam etmesine engel olan başlıca etmenlerdir.

İnsanların hayatını tehdit eden, halihazırda tehdit etmeye devam eden depremler pek çok araştırmaya konu olmuştur. 1992 yılında yaşanan Erzincan depremi ile 1999 yılında yaşanan Gölcük ve Düzce depremlerinden sonra çalışmalar (Ayas ve İskender, 2014; Bakioğlu ve Savaş, 2001; Erkan, 2010; İçme ve Büyük, 2023) özellikle yoğunluk kazanmıştır. Depremler hem deprem anında hem de deprem yaşanıp bittikten sonra insanlarda derin izler bırakmaktadır (Karakuş, 2013). Bu nedenle öğrencilerin depremi algılama ve farkındalık düzeyleri (Tuncer, vd., 2021), depremin psikolojik etkileri (Kardaş ve Tanhan, 2018; Köse, vd., 2023) üzerine çalışmalar da ağırlık kazanmıştır. Ülkemiz dışında diğer ülkelerde yaşanan depremler sonrasında da pek çok araştırma yapılmıştır. Cheng vd. (2018)'de yaptıkları araştırma ile 2008 yılında Çin'in Siçuan eyaletinde yaşanan depremin çocuklar üzerindeki etkilerini incelemiştir. Bir başka çalışmada (Onigbinde, 2018) 85 ülkeden oluşan bir örneklem ile doğal afetlerin ortaöğretim başarısı üzerindeki etkisi incelenmiştir. Paudel ve Ryu (2018)'nun yaptıkları araştırmada 1988 Nepal depreminin eğitime uzun vadeli etkileri incelenmiş, alt ve üst tabakaya ait çocukların ortaokulu ve liseyi bitirme olasılıkları hesaplanmıştır. Basnet (2020) yaptığı çalışma ile 2015 yılında Nepal'de meydana gelen depremin eğitim üzerindeki etkisini incelemiştir.

Literatürde depremden sonra öğrencilerin, öğretmenlerin ve okul yöneticilerinin nasıl etkilendiği üzerine yapılan çok sayıda araştırma bulunmaktadır (Arıcı, vd., 2023; Ceyhan ve Ceyhan, 2006; Demirtaş, vd., 2023; Özer, vd., 2024; Özoruç ve Dikici-Sığırtmaç, 2024; Seyle, vd., 2013). Ancak depremi yaşayan öğrencilerden konteyner kentte kalanların sorunlarına ve eğitim hayatlarına etkisine ilişkin araştırmaların sınırlı sayıda olduğu görülmüştür. Oysa çocuklar deprem gibi doğal afetlerden kolaylıkla etkilenmektedir ve bu etkilenmeler öğrencilerin okul yaşamlarına olumsuz olarak yansımaktadır. Arslan (2023)'ın yaptığı çalışmada öğrencilerin depremden sonra okul başarılarının düştüğü, okula devamsızlıklarının arttığı, derse odaklanamama ve motive olamama gibi problemler yaşadıkları ortaya çıkmıştır. Bu nedenle öğrencilerin eğitiminin olumsuz etkilenmemesi için öğretmenlerin bu durumlardan haberdar olmaları gerekmektedir (Erkan, 2010). Bu çalışmada öğrencilerin eğitiminde ve okul hayatında depremin nasıl bir etkisinin olduğu, ne gibi sorunlarla karşılaştıkları incelenecektir. Bu bağlamda çalışmanın literatüre sınırlı da olsa katkı sağlayacağı düşünülmektedir.

Bu çalışma ile 6 Şubat 2023'te yaşanan depremlerden sonra öğrencilerin yaşadıkları sorunları anlamak, öğrencilerde nasıl izler bıraktığını ve bu izlerin okul içi davranışlarına nasıl yansıdığını daha yakından incelemek amaçlanmıştır. Alan yazın tarandığında, deprem sonrası geçici yerleşim alanlarından konteyner kentte kalan ailelerin ve öğrencilerin yaşadıkları sorunlara yönelik yapılan çalışmaların (Bayındırlı, 2016; Kılıç ve Kıygı, 2024; Yanardağ, 2024) sınırlı sayıda olduğu görülmüştür. Yapılan çalışma ile literatürdeki boşluğun doldurulması amaçlanmaktadır. Bu bağlamda aşağıdaki sorulara yanıt aranacaktır:

Bu araştırma kapsamında aşağıdaki sorulara yanıt aranacaktır:

1) Depremin konteyner kentte yaşayan öğrenciler üzerindeki etkileri nasıldır?
2) Deprem sonrası konteyner kentte yaşayan öğrenciler ne gibi sorunlar yaşamaktadır?
3) Deprem sonrası konteyner kentte yaşayan öğrencilerin yaşadıkları sorunların okula yansımaları nasıldır?

YÖNTEM

Bu çalışmada 6 Şubat 2023 tarihinde merkezleri Kahramanmaraş olan depremler sonrası konteyner kentte yaşayan ortaokul öğrencilerinin yaşadıkları sorunları ve bu sorunların okula nasıl yansıdığını belirlemek amacıyla nitel araştırma yöntemlerinden durum çalışması yöntemi kullanılmıştır. Durum çalışması, gerçek hayattaki güncel bir konunun çeşitli bilgi edinme araçları ile kapsamlı ve detaylı bir şekilde incelenmesidir (Creswell, 2021).

Çalışma Grubu

Çalışma grubunu 2023-2024 eğitim öğretim yılı bahar döneminde Malatya ili Battalgazi ilçesine bağlı iki ortaokul bünyesindeki 5 yönetici, 10 öğretmen, 10 veli ve 10 öğrenci oluşturmaktadır. Çalışma grubu oluşturulurken amaçlı örnekleme yöntemlerinden maksimum çeşitlilik örnekleme ve ölçüt örnekleme yöntemleri tercih edilmiştir. Çalışmaya katılma kriterleri; 6 Şubat 2023 depremlerini yaşamış olmak, ortaokul öğrencisi olmak ve konteyner kentte yaşıyor olmaktır. Bu kriterlere uyan öğrenciler ile bu öğrencilerin velileriyle görüşülmüştür. Buna bağlı olarak öğretmen ve yöneticiler de bu iki ortaokulda görev yapanlar arasından seçilmiştir. Çalışmaya katılan yönetici, öğretmen, veli ve öğrencilere ait kişisel bilgilere Tablo 1'de yer verilmiştir.

Tablo 1 Çalışmaya Katılan Yönetici, Öğretmen, Veli ve Öğrencilere Ait Kişisel Bilgiler

Katılımcı	Kategori	Değişken	n
Yönetici	**Cinsiyet**	Kadın	1
		Erkek	4
	Unvan	Müdür	2
		Müdür Yardımcısı	3
	Yaş	30-39 yaş	1
		40-49 yaş	4
		50+ yaş	-
	Kıdem Yılı	1-10 yıl	1
		11-20 yıl	1
		21+ yıl	3
Öğretmen	**Cinsiyet**	Kadın	4
		Erkek	6
	Yaş	20-29 yaş	2
		30-39 yaş	8
		40+ yaş	-
	Kıdem Yılı	1-5 yıl	2
		6-10 yıl	6
		11-15 yıl	1
		15+ yıl	1
	Branş	Türkçe	3
		Fen Bilimleri	2
		Sosyal Bilgiler	1
		Din Kültürü ve Ahlak Bilgisi	2
		Beden Eğitimi ve Spor	1
		Bilişim Teknolojileri	1
Veli	**Öğrenciye Yakınlık**	Anne	10
		Baba	-
	Öğrenim Durumu	İlkokul	2
		Ortaokul	3
		Lise	5
	Meslek	Ev hanımı	10

	Aylık Gelir	17000 TL ve altı	7
		17000 TL-25000 TL	1
		25000 TL-35000 TL	2
		35000 TL ve üstü	-
Öğrenci	**Cinsiyet**	Kadın	6
		Erkek	4
	Sınıfı	5	2
		6	3
		7	2
		8	3
	Annenin Öğrenim Durumu	İlkokul	2
		Ortaokul	3
		Lise	5
	Babanın Öğrenim Durumu	İlkokul	2
		Ortaokul	2
		Lise	6

Veri Toplama Araçları

Depremin öğrencilerin okul yaşamına olan etkisini belirlemek amacıyla yapılan çalışmada araştırmanın verilerinin toplanmasında yarı yapılandırılmış görüşme formu kullanılmıştır. Bu formlar yönetici, öğretmen, öğrenci ve veliler için ayrı olarak araştırmacılar tarafından hazırlanmış olup iki alan uzmanının (uzmanlardan biri doçent diğeri profesör olarak eğitim bilimleri alanında çalışmaktadırlar ve çok sayıda nitel araştırma yürütmüşlerdir) görüşleri de alınmıştır. Yapılan değerlendirmeler sonrası araştırmanın alt problemlerine cevap alınacak nitelikte sorular eklenerek formun amacına hizmet etmesi sağlanmıştır. Görüşme formları iki kısımdan oluşmaktadır. Birinci kısımda katılımcılara ait kişisel bilgilere yer verilmiştir. İkinci kısımda ise öğrencilerin yaşadığı sorunları ortaya çıkarmaya yönelik hazırlanan açık uçlu sorular yer almıştır. Formdaki açık uçlu sorulardan bazıları ve bu soruların kime sorulduğuna dair bilgilere Tablo 2'de yer verilmiştir:

Tablo 2 Görüşme Soruları

Yönetici	6 Şubat 2023 depremlerinden sonra konteyner kentte yaşayan öğrencilerinizde ne tür sorunlar gözlediniz? Öğrencilerinizin ruhsal durumu nasıldır? Öğrenciler psikolojik ve sosyal anlamda sorunlar yaşıyor mu?
	Konteyner kentte yaşayan öğrencileriniz ulaşım, beslenme gibi konularda sıkıntı yaşıyor mu?
Öğretmen	6 Şubat 2023 depremlerinden sonra konteyner kentte yaşayan öğrencilerinizde gözlemlediğiniz, sınıf içinde sıkıntı yaşadığınız durumlar oldu mu?
	Konteyner kentte yaşayan öğrencilerin ödev yapma, ders çalışma, akademik başarı gibi durumları nasıl etkilendi?
	Öğrencilerin derslere karşı ilgi ve motivasyonları, hazır bulunuşlukları, derslere katılım ve dikkat düzeylerinde değişiklik var mı?
	Ders için gerekli ders kitabı, kaynak kitap, araç gereçler vb. materyal eksikliği yaşıyor musunuz?
Veli	Öğrencinizin okul arkadaşları ve öğretmenleri ile ilişkileri nasıldır ve bu konuda yaşadığı sorunlar varsa nelerdir?
	Okulu ne sıklıkla ziyaret edersiniz? Ziyaret sebebiniz genel olarak ne olur?
Öğrenci	Okuluna uyum sağlamada ne tür sorunlar yaşadın? Sınıf kurallarına uymakta güçlük çekiyor musun?
	Bir öğrenci olarak konteynerde ne tür problemler yaşıyorsun?

Verilerin Toplanması ve Analizi

Sayılardan ziyade durumlarla ilgilenen nitel araştırmalar, bireylerin duygu, düşünce, tutum ve davranışlarını anlama ve açıklama üzerine odaklanır (Ocak ve Olur, 2019). Nitel bir araştırma olan bu çalışmada veriler 5 yönetici, 10 öğretmen, 10 veli ve 10 öğrenci ile bireysel ve yüz yüze görüşme ile toplanmıştır. Görüşmede araştırmacı ile katılımcı doğrudan iletişim halindedir (Karaca, 2021) ve katılımcının konu ile ilgili görüşlerini ifade etmesi, sorulan soruları yanıtlaması beklenmektedir.

Verilerin analizinin hatasız ve kolay yapılabilmesi için velilerin ve öğrencilerin onayı alınarak görüşme esnasında ses kaydı tutulmuştur. Yönetici ve öğretmenler ise formları yazılı olarak kendileri doldurmuştur. Tutulan ses kayıtları ve notların analizi, betimsel analiz ve içerik analizi kullanılarak yapılmıştır. Betimsel analizde araştırmanın genel hatları ve ana temaları araştırmaya başlamadan önce bellidir; araştırma süreci içerisinde yeni temalar ile de şekillenebilir (Çelebi, 2021; Yıldırım ve Şimşek, 2021). İçerik analizi ise araştırmada toplanan verilerin derinlemesine, detaylı bir şekilde çözümlenmesini ve yeni temaların oluşturulmasını sağlayan esnek bir analiz yöntemidir. Ayrıca elde edilen verilerde temalar ve kodlar aracılığıyla, hangi terimin ne sıklıkta geçtiği içerik analizi ile görülebilir (Alanka, 2024; Yıldırım ve Şimşek, 2021).

Katılımcılara sorulan her bir sorunun altına ilgili katılımcının vermiş olduğu tüm cevaplar eklenmiş ve cevapların bütün olarak görülmesi sağlanmıştır. Sorulara verilen cevaplar tek tek incelenmiş, birbirine benzer ve ilişkili kavramlar anahtar kavram olarak belirlenmiş ve ilgili olanlar bir araya getirilerek yeni alt temalar oluşturulmuştur.

Paylaşılan alıntılarda gizlilik ilkesi gereği her katılımcı için kodlar kullanılmıştır. Yöneticiler Y1, Y2, Y3, Y4, Y5 kodlarıyla; öğretmenler Ö1, Ö2, Ö3, …, Ö10 kodlarıyla; veliler V1, V2, V3, …, V10 kodlarıyla ve öğrenciler ÖĞ1, ÖĞ2, ÖĞ3, …, ÖĞ10 kodlarıyla belirtilmiştir.

Geçerlik ve Güvenirlik

Bu araştırmada geçerlik ve güvenirliğin sağlanmasında birtakım yollar izlenmiştir. Yarı yapılandırılmış görüşme formu soruları hazırlanırken soru sayısının çokluğundan ziyade soruların niteliğine ve araştırmanın problemine uygun olmasına dikkat edilmelidir (Polat, 2022). Bu nedenle yarı yapılandırılmış görüşme formu hazırlanmadan önce ilgili literatür taraması yapılmış ve formda yer alan sorular araştırma sorularına yanıt olacak şekilde hazırlanarak geçerlilik sağlanmaya çalışılmıştır. Sorular hakkında uzman görüşleri alınmış, soruların açıklık ve anlaşılırlığı pilot uygulama ile kontrol edilmiştir. Yapılan kontroller ve görüşler sonrası gereken son düzenlemeler yapılmış ve forma son hali verilmiştir.

Amaçlı örnekleme yöntemi ile çalışıldığında katılımcılar direkt araştırmanın konusuyla yakından ilgili olmakta ve araştırmanın geçerliliğini artırmaktadır (Arslan, 2022). Bu araştırmada da katılımcılar amaçlı örnekleme yöntemleriyle seçilmiştir.

Katılımcıların araştırmaya gönüllü olarak katılmaları sağlanmış, öğrenciler ile görüşme yapılmadan önce veli izin belgesi ile velilerden izin alınmıştır. Veliler ile iletişim kurularak müsait bir zaman diliminde konteynerde veli ve öğrenciler ziyaret edilmiş, görüşmeler yüz yüze yapılmıştır. Kendilerinden tekrar izin alınarak görüşme esnasında ses kaydı tutulmuş ve analizlerin güvenilir bir şekilde yapılması sağlanmıştır.

Geçerliğin sağlanmasında diğer bir husus, katılımcıların bulguları teyit etmesidir. Bu amaçla araştırmanın sonuçları katılımcılara bildirilmiş ve teyit ettirilmiştir. Teyit sonrası eldeki görüşme formları, alınan izin belgeleri, ses kayıtları ve analiz sürecinde kullanılan notlar dosyalanarak saklanmıştır (Yıldırım ve Şimşek, 2021).

Araştırmanın bulguları sonucunda ortaya çıkan alt temalar ile ifadelerin sıklığı tablo olarak gösterilmiş ve hangi katılımcılar tarafından söylendiği tabloda belirtilmiştir (Tavşancıl ve Aslan, 2001). Katılımcı görüşlerine dikkat çekmek için görüşler kodlar ile tabloların altında doğrudan alıntı yoluyla aktarılmıştır (Altunışık, vd., 2001). Katılımcı kimlikleri gizli tutularak her bir katılımcıya kodlar verilmiştir (Yönetici: Y, Öğretmen: Ö, Veli: V, Öğrenci: ÖĞ). Belirlenen alt temalar ve kodlar bir alan uzmanı ile görüş birliği sağlanarak kararlaştırılmıştır. Bu sayede verilerin yorumlanmasında birden fazla kodlayıcı kullanılarak güvenirlik artırılmıştır (Creswell, 2016).

Güvenirliğin artırılmasında tutarlılık önemlidir. Bu nedenle araştırmanın bulguları literatürdeki diğer araştırmaların bulguları ile karşılaştırılmış ve sonuçların benzer olduğu görülmüştür.

BULGULAR

Bu araştırmada 6 Şubat 2023 tarihinde yaşanan depremler sonrası konteyner kentte yaşayan ortaokul öğrencilerinin yaşadıkları sorunları ve bu sorunların okul içerisindeki durumlarına nasıl etki ettiğini anlamak maksadıyla yönetici, öğretmen, veli ve öğrenci görüşleri incelenmiştir. Bu görüşmeler sonrası elde edilen veriler ile bazı tema ve alt temalar oluşturulmuştur.

1. Yönetici ve Öğretmen Görüşlerine İlişkin Bulgular

1.1. 6 Şubat 2023 Depremlerinden Sonra Konteyner Kentte Yaşayan Öğrencilerin Yaşadığı Sorunlara İlişkin Bulgular

Araştırma kapsamında yöneticilere ve öğretmenlere sorulan "6 Şubat 2023 depremlerinden sonra konteyner kentte yaşayan öğrencilerinizde ne tür sorunlar gözlediniz? Öğrencilerinizin ruhsal durumu nasıldır? Öğrenciler psikolojik ve sosyal anlamda sorunlar yaşıyor mu?"

sorularına verilen cevaplar doğrultusunda konteyner kentte yaşayan öğrencilerin yaşadığı sorunlara Tablo 3'te yer verilmiştir.

Tablo 3 Konteyner Kentte Yaşayan Öğrencilerin Yaşadığı Sorunlar

Tema: Konteyner Kentte Yaşayan Öğrencilerin Yaşadığı Sorunlar	Katılımcılar	Frekans
1. Alt Tema: Davranış ve Uyum Problemleri	Y1, Y2, Y3, Y4, Y5	5
Aşırı tepkili davranış	Y1	1
Şiddet eğilimi	Y2	1
Saldırganlık ve hareketli davranışlar	Y3, Y5	2
Anne, baba, kardeş ilişkilerinde şiddet ve bağırma	Y3	1
Yaşın üstünde cinsel eğilim	Y2	1
Disiplin sorunları, uyum sorunları	Y1, Y4, Y5	3
Uyarıları dikkate almama	Y3	1
Derse ve okula karşı ilgisizlik	Y3	1
2. Alt Tema: Psikolojik ve Sosyal Sorunlar	Y1, Y3, Y5, Ö2, Ö4, Ö5,	8
İçine kapanma	Y1	1
Kendini ifade etmede yetersizlik	Y1	1
Uykusuzluk	Ö2	1
Kaygı ve endişe	Y3	1
Sese karşı fazla duyarlılık	Ö5	1
Kendi öğretmenini, okulunu, sınıfını isteme	Y5	1
Boş vermişlik	Y3	1
Sinir, stres, ağır duygusal sorunlar; mental olarak	Ö4	1
Psikolojik ve duygusal değişimlerde sıklık	Ö10	1
Psikolojik iyi oluşu sağlayamama	Y3	1
Binaya girmek istememe, deprem korkusu	Y5, Ö5, Ö8	3
Akademik başarılarının olumsuz etkilenmesi	Y3	1
3. Alt Tema: Fiziksel ve Ekonomik Şartların Getirdiği Sorunlar	Y3, Ö2	2
Ekonomik olarak zor şartlar	Y3	1
Ders çalışma ortamlarının olmaması	Y3, Ö2	2
İnternet bağlantısının olmaması	Y3	1
Dar alanda yaşamanın zorluğu	Y3	1
4. Alt Tema: Aile Ortamı	Y3, Y4	2
Parçalanmış aileler	Y3, Y4	2
Mahremiyet sınırlarının korunamaması	Y3	1

Tablo 3'ü incelediğimizde yönetici ve öğretmenlerin görüşüne göre; 6 Şubat depremleri sonrası konteyner kentte yaşayan öğrencilerin yaşadıkları sorunların en başında psikolojik ve sosyal sorunlar yer almaktadır. Bu sorunların yanı sıra davranış ve uyum sorunlarının, fiziksel imkânlar ve ekonomik şartların getirdiği sorunların ve parçalanmış ailelerden kaynaklı sorunların yaşandığı da görülmektedir. Bu sorunlara bazı yönelik yönetici ve öğretmen görüşlerine aşağıda yer verilmiştir.

Y1 (Erkek, 19 yıllık deneyim): *"Öğrencilerin bir kısmı içine kapandı, kendini ifade etmede yetersiz kaldı. Bazıları uyum sorununun yanında aşırı tepkili davranışa sahip oldu."*

Y3 (Kadın, 29 yıllık deneyim): *"Konteynerde yaşayan öğrenciler derse ve okula karşı ilgisiz, ders çalışmak istemiyor birçoğu. Dar alanda yaşamanın verdiği zorlu koşullardan çıkıp daha geniş olan okul ortamına geldiklerinde saldırganlık ve hareketli davranışları, taşkınlıkları daha çok artıyor. Uyarılarımızı çoğu zaman dikkate almıyorlar. (...) Boş vermişlik daha çok hâkim. Psikolojik olarak iyi olmadıklarını gözlemleyebiliyoruz. (…)*

Ö2 (Erkek, 9 yıllık deneyim): *"Öğrencilerimizin yaşam alanı darlığından uykusuz geldikleri günler oluyor. Çalışma ortamının olmadığı mağduriyetini duymaktayız."*

1.2. Konteyner Kentte Yaşayan Öğrencilerin Sınıf İçerisinde Yaşadıkları Sorunlara İlişkin Bulgular

Araştırma kapsamında öğretmenlere sorulan "6 Şubat 2023 depremlerinden sonra konteyner kentte yaşayan öğrencilerinizde gözlemlediğiniz, sınıf içinde sıkıntı yaşadığınız durumlar oldu mu?" sorusuna verilen cevaplar doğrultusunda konteyner kentte yaşayan öğrencilerin sınıf içerisinde yaşadıkları sorunlar Tablo 4'te gösterilmiştir.

Tablo 4 Konteyner Kentte Yaşayan Öğrencilerin Sınıf İçerisinde Yaşadıkları Sorunlar

Tema: Konteyner Kentte Yaşayan Öğrencilerin Sınıf İçerisinde Yaşadıkları Sorunlar	**Katılımcılar**	**Frekans**
1. Alt Tema: Davranış ve uyum problemleri	Ö1, Ö6	2
Akran zorbalığı	Ö6	1
Argo sözcük kullanımı	Ö6	1
Mahrem konularda özensiz davranma	Ö6	1
Şiddete eğilim	Ö1	1
Disiplin ve uyum sorunu	Ö1	1
Sınıf kurallarına uymada güçlük	Ö6	1
2. Alt Tema: Eğitim Öğretim Sürecinde Yaşanan Sorunlar	Ö3, Ö4, Ö5, Ö6	4
Konsantrasyon problemi	Ö5	1
Dersin olağan akışına engel olma	Ö3	1
Dikkat dağınıklığı	Ö3	1
Derslerdeki başarı oranında azalma	Ö4, Ö6	2

Öğretmen görüşlerine göre oluşturulan Tablo 4'e göre; öğrencilerin sınıf içerisinde yaşadığı sorunlar genel olarak eğitim sürecini ve ders başarılarını olumsuz etkileyen durumlar ile davranış ve uyum problemleri olmuştur. Bu problemlere yönelik öğretmen görüşlerinden bazıları aşağıda yer almaktadır.

Ö1 (Erkek, 4 yıllık deneyim): *"Genelde disiplin sıkıntısı meydana gelmektedir. Şiddete eğilim artmış durumdadır."*

Ö5 (Kadın, 6 yıllık deneyim): *"Sese karşı fazlaca duyarlılık, deprem korkularının devam etmesi, buna bağlı olarak konsantrasyon problemi gibi sıkıntılar yaşıyorlar."*

Ö6 (Erkek, 12 yıllık deneyim): *"Okul içinde akran zorbalığı, mahrem konularda özensiz davranma, argo sözcük kullanımı, sınıf kurallarına uyma da güçlük gibi sorunlarla karşılaşabiliyoruz."*

1.3. Öğrencilerin Okula Ulaşım ve Beslenme Durumlarına İlişkin Bulgular

Yöneticilere sorulan "Konteyner kentte yaşayan öğrencileriniz ulaşım, beslenme gibi konularda sıkıntı yaşıyor mu?" sorusuna yönelik yöneticilerin tamamı ulaşım ve beslenme problemi yaşanmadığını belirtmiştir. Ulaşım ve beslenme durumlarına ilişkin yönetici görüşlerinden bazıları aşağıda yer almaktadır.

Y2 (Erkek, 22 yıllık deneyim): *"Öğrenciler sabah erken evden çıktıklarından dolayı genelde kahvaltı yapmadan geldiklerine çok şahit olduk. Maddi durumu yetersiz öğrenciler bazen öğle eve gidene kadar aç kalabiliyorlar. Bu durum eğitim kalitesini düşürüyor. Devletimiz servis aracı tahsis ettiği için gelip gitme ile ilgili bir problem yaşanmıyor diyebiliriz. Sadece araç ve şoför seçen öğrencilerimizi saymazsak."*

Y4 (Erkek, 9 yıllık deneyim): *"Ulaşım konusunda sıkıntı yok. Çünkü hem konteynerlerin yakın olması hem de servisler ile taşımanın olmasından dolayı o konuda bir sıkıntı yaşamadık. Beslenme konusunda da bir sorun yaşanmadı. Çocuklar sabah kahvaltısını yapıp geliyorlar. Öğleyin eve gidiyorlar."*

Y5 (Erkek, 23 yıllık deneyim): *"Yaşamadık. Taşıma kapsamında olduğu için bütün öğrenciler servisle geliyor."*

1.4. Öğrencilerin Eğitim ve Öğretim Açısından Yaşadıkları Sorunlara İlişkin Bulgular

Yöneticilere sorulan "Depremlerin öğrencilerin okula devamına ve başarı durumuna etkisi nasıl oldu?" sorusu ile öğretmenlere sorulan "Konteyner kentte yaşayan öğrencilerin ödev yapma, ders çalışma, akademik başarı gibi durumları nasıl etkilendi?", "Öğrencilerin derslere karşı ilgi ve motivasyonları, hazırbulunuşlukları, derslere katılım ve dikkat düzeylerinde değişiklik var mı?" sorularına verilen cevaplar doğrultusunda öğrencilerin eğitim öğretim açısından yaşadıkları sorunlara Tablo 5'te yer verilmiştir.

Tablo 5 Öğrencilerin Eğitim Öğretim Açısından Yaşadıkları Sorunlar

Tema: Öğrencilerin eğitim öğretim açısından yaşadıkları sorunlar	**Katılımcılar**	**Frekans**
1. Alt Tema: Okula devamın olumsuz etkilenmesi	Y1, Y4	2
Devam konusunda duyarsızlaşma, devamsızlığın artması	Y1, Y4	2
Yeni okula ayak uyduramama	Y4	1
2. Alt Tema: Görev ve sorumlulukların yerine getirilmemesi	Y5, Ö1, Ö2, Ö3, Ö4, Ö5, Ö6, Ö7, Ö8, Ö9, Ö10	11
Görev ve sorumlulukların yerine getirilmemesi	Ö5	1
Ödev yapmama ya da bir kısmını yapma	Y5, Ö2, Ö3, Ö4, Ö5, Ö7, Ö10	7
Ders araç gereçlerini getirmeme	Ö3	1
Derse hazırlıksız gelme	Ö5, Ö8	2
3. Alt Tema: Derse ve okula karşı ilgi ve tutumların değişmesi	Y3, Y4, Ö2, Ö3, Ö5, Ö7, Ö8, Ö9	8
Derse karşı isteksizlik	Ö2, Ö7	2
Motivasyon eksikliği	Y3, Ö3, Ö8, Ö9	4
Odaklanma problemi	Ö3	1
Dikkat düzeylerinde azalma, dikkat dağınıklığı	Ö3, Ö5, Ö7, Ö8	4
Hazırbulunuşluğun düşük olması	Ö8	1
Ders ve hayat amaçlarında belirsizlik	Y3	1
Boş vermişlik	Y4	1
Okulu ikinci plana atma, okula geçici gözle bakma	Y4, Ö2	2
4. Alt Tema: Başarılarının olumsuz etkilenmesi	Y2, Y4, Y5, Ö1, Ö3, Ö4, Ö5, Ö6, Ö7, Ö10	10
Okuma ve yazmada gerileme	Ö1	1
Başarısız öğrencilerin başarılı öğrencileri olumsuz etkilemesi	Y2	1
Akademik başarıda düşüş	Y2, Y4, Y5, Ö1, Ö3, Ö4, Ö5, Ö6, Ö7, Ö10	10

Yönetici ve öğretmen görüşlerine göre oluşturulan Tablo 5'i incelediğimizde; öğrencilerin okula devamsızlığının arttığı, görev ve sorumluluklarını yerine getirmedikleri, derse ve okula

karşı ilgi ve tutumlarının olumsuz etkilendiği, akademik başarılarında düşüş olduğu yönünde sorunlar yaşadığı görülmektedir. Bu sorunlara ilişkin katılımcı ifadelerinden bazıları şu şekildedir:

Y2 (Erkek, 22 yıllık deneyim): *"Özellikle başarılı öğrencilerin uç noktada başarısız öğrenciler tarafından etkilendiklerine şahit olduk. Başarısızlık konteynerle paralel olarak adeta arttı."*

Y3 (Kadın, 29 yıllık deneyim): *"Öğrencilerimizin motivasyonları eksik. Yaşam-ölüm denklemini depremde yaşayınca ders ve hayat amaçlarında bir belirsizlik gözlemliyoruz."*

Ö2 (Erkek, 9 yıllık deneyim): *"Öğrencilerimiz de kalabalık ortamda yaşadıkları için konteyner kent ortamını oyun oynama olarak değerlendirmektedir. Verilen ödevler kısım kısım yapılmakta ya da evde unuttum tarzı açıklamalarla karşılaşmaktayız. (…)"*

1.5. Öğrencilerin Ders Araç Gereç ve Materyal Eksikliği Durumuna İlişkin Bulgular

Araştırma kapsamında öğretmenlere sorulan "Ders için gerekli ders kitabı, kaynak kitap, araç gereçler vb. materyal eksikliği yaşıyor musunuz?" sorusuna verilen cevaplar doğrultusunda öğrencilerin yaşadıkları sorunlara Tablo 6'da yer verilmiştir.

Tablo 6 Ders Araç Gereç ve Materyal Eksikliği Sorunu

Tema: Ders araç gereç ve materyal eksikliği sorunu	**Katılımcılar**	**Frekans**
Ders kitabı ve kaynak kitap eksikliği yaşıyorum.	Ö1, Ö2, Ö3, Ö5, Ö6, Ö7, Ö8, Ö9, Ö10	9
Ders kitabı ve kaynak kitap eksikliği yaşamıyorum.	Ö4	1

Tablo 6 incelendiğinde öğretmenlerin çoğu öğrencilerin ders için gerekli araç gereç, materyal ve kitap konusunda sorun yaşadığını belirtmiştir. Bu soruna yönelik öğretmen ifadeleri aşağıda sunulmuştur.

Ö5 (Kadın, 6 yıllık deneyim): *"Ders kitabı eksikliği yaşanıyor. Konteynerde kendileri için çalışma alanı oluşturulamadığı için aldıkları kitapları da kaybettiklerini ifade ediyorlar."*

Ö6 (Erkek, 12 yıllık deneyim): *"Birçok öğrenci LGS'ye hazırlık aşamasında kaynak problemi yaşıyor. Öğrenci sayısının fazla olması okul içinde yapılacak ek faaliyetleri kısıtlıyor."*

Ö8 (Erkek, 10 yıllık deneyim): *"Öğrencilerin çoğu maddi kayıp yaşadıklarından ders için gerekli araç gereç isteminde çok bulunamıyoruz. İstesek bile öğrencilerin çoğu alamıyor."*

1.6. Öğrencilerin Karşılaştıkları Diğer Sorunlara İlişkin Bulgular

Yöneticilere ve öğretmenlere sorulan "Yukarıdaki sorular haricinde öğrencilerin yaşamış olduğu başka sorunlar var mı?" sorusuna karşılık verilen cevaplar doğrultusunda öğrencilerin karşılaştıkları diğer sorunlar Tablo 7'de belirtilmiştir.

Tablo 7 Öğrencilerin Karşılaştıkları Diğer Sorunlar

Tema: Öğrencilerin karşılaştıkları diğer sorunlar	Katılımcılar	Frekans
Gelir düzeyinin düşük olması, maddi problemler	Y2, Ö1, Ö6	3
Sınıf ortamında hırsızlık	Ö6	1
Öğrencinin anne ve babası ile ilişkilerinde olumsuzluk	Ö6	1
Farklı kültürlerin bir arada yaşama zorluğu	Y4, Ö6	2
Velilerin duyarsız, ilgisiz olması	Y5, Ö1	2
Okulun uzak olması, velilerin okulu ziyaret edememesi	Y5	1
Anne ve babanın ayrı olması, baba otoritesinin olmaması	Y2, Y4	2
Konteyner ortamının olumsuz olması	Y1	1

Tablo 7 incelendiğinde; öğrencilerin aile gelir düzeyinin düşük olması öğrencilerin en çok yaşadığı sorun olarak görülmektedir. Bunu takip eden diğer önemli sorunlar ise anne ve babanın ayrı olması, velilerin ilgisizliği, okuldaki öğrencilerin kültür farklılıklarıdır. Sınıf içerisinde yaşanan hırsızlık olayları, öğrencinin anne baba ilişkilerindeki olumsuzluk, konteyner ortamındaki olumsuzluklar ve okulun uzak olmasına bağlı olarak velilerin okulu ziyaret edememesi de diğer sorunlar arasında görülmektedir. Bu sorunlara yönelik yönetici ve öğretmen ifadelerinden birkaçı aşağıda verilmiştir.

Y4 (Erkek, 9 yıllık deneyim): *"Her okula belli kesimden öğrenci gelirken burada Malatya'nın her yerinden her çeşit öğrenci var. Bizim köylerden gelen öğrencilerimiz çok iyilerdi. Şimdi onlar da davranış olarak aşırı derecede değiştiler. Bölünmüş ailelerden gelen öğrenci çok fazla var. Babanın otoritesi olmadığı için çok sıkıntı yaşıyoruz."*

Y5 (Erkek, 23 yıllık deneyim): *"Öğrencilerden çok velilerle uğraşıyoruz. Veli duyarsız, ilgisiz, çocuğun başarısıyla pek ilgilenmiyor. İlgili olan da uzak olduğu için okula gelemiyor."*

Ö6 (Erkek, 12 yıllık deneyim): *"Çocukların yaşadığı maddi problemler okul içinde ya da sınıf ortamında hırsızlık olaylarının yaşanmasına neden oluyor. Konteynerdeki kısıtlı yaşam alanı çocukların anne ve baba ile ilişkilerini olumsuz etkiliyor. Bu da okul ortamına yansıyor. Çevre şartlarının olumsuz durumları ortaya çıkarması, farklı eğitim seviyesindeki insanların bir arada olması, farklı kültürlerin bir arada yaşama zorluğu ve etkileri okul ortamına da yansıyor."*

2. Veli ve Öğrenci Görüşlerine İlişkin Bulgular

2.1.6 Şubat 2023 Depremleri Sonrası Öğrencilerin Okul Değişikliği Durumuna İlişkin Bulgular

Velilere sorulan "Öğrenciniz 6 Şubat depremlerinden sonra okul değişikliği yaptı mı?" sorusu ile öğrencilere sorulan "Son 1 yılda okul değişikliği yaptın mı?" sorusuna hem veliler hem de öğrencilerin tamamı "Evet." şeklinde cevap vermiştir. Bazı öğrencilerin birden fazla okul değişimi yaptığı ifade edilmiştir. Bu ifadelerden bazıları aşağıda sunulmuştur.

V2: *"İnönü İlkokulu'ndan geçti."*

ÖĞ6 (Kız, 7.sınıf): *"Hanımın Çiftliği Sadiye Lütfi Evliyaoğlu Ortaokulu'ndan geçtim."*

ÖĞ9 (Erkek, 6.sınıf): *"5. sınıf 1. dönem Barbaros Ortaokulu'ndaydım. 2. dönem Tahsin Başdemir Ortaokulu'ndaydım. 6. sınıfta da Şehit Aytaç Altunörs Ortaokulu'na geçtim."*

2.2.Öğrencilerin Okula Uyum Durumuna İlişkin Bulgular

Velilere yöneltilen "Öğrenciniz okula uyum sağlamakta güçlük çekiyor mu?" sorusu ile öğrencilere yöneltilen "Okuluna uyum sağlamada ne tür sorunlar yaşadın? Sınıf kurallarına uymakta güçlük çekiyor musun?" sorusuna verilen yanıtlar Tablo 8'de yer almaktadır.

Tablo 8 Okula ve Sınıf Kurallarına Uyum Sağlamada Yaşanan Sorunlar

Tema: Okula ve sınıf kurallarına uyum sağlamada yaşanan sorunlar	**Katılımcılar**	**Frekans**
Okula uyum sağlamada güçlük	V1, V2, V3, V4, V6, V7, V8, V9, V10, ÖĞ2, ÖĞ3	11
Dışlanma	V1, V4	2
Eski ortamını isteme, okula gitmek istememe	V2, V7, V9	3

Veli ve öğrencilerin görüşlerine göre hazırlanan Tablo 10 incelendiğinde; öğrencilerin okula uyum sağlamakta güçlük çektiği, eski ortamını istediği, okula gitmek istemediği ve okulda dışlandığı görülmektedir. Bu sorunlara yönelik veli ve öğrenci görüşlerinden bazıları aşağıda belirtilmiştir.

V1: *"İlk 2 ay dışlandılar depremzede öğrenciler diye. Öğretmenler hakaret ettiler. Okul idaresi ile görüştük. Ancak o şekilde düzeldi."*

V4: *"Buraya ilk geldiğinde sıkıntı oldu. Sürekli sen Suriyelisin dediler. Ondan sonra normale döndü. İlk 2 hafta böyleydi. Çok şükür kısa sürdü."*

ÖĞ3 (Kız, 8.sınıf): *"İlk zamanlar arkadaşlarla uyum süreci biraz sıkıntılıydı. Ondan sonra birbirimize biraz alıştık. Yakın olduğum bir arkadaşım var okulda. Burada da bir tane var."*

2.3.Öğrencilerin Okula Ulaşım Durumuna İlişkin Bulgular

Velilere "Öğrenciniz okula ulaşımı nasıl sağlıyor?" sorusu ile öğrencilere "Konteyner kentten okula gidip gelmede ulaşım problemi yaşıyor musun?" sorusu sorulmuştur. Katılımcı veli ve öğrenciler ulaşım konusunda bir sıkıntı yaşanmadığını ve ulaşımın ücretsiz bir şekilde servisle sağlandığını ifade etmişlerdir. Bazı öğrenciler (ÖĞ2, ÖĞ3) birkaç defa servisi kaçırdıklarını ve okul uzak olduğu için o günler okula gidemediklerini belirtmiştir. Aşağıda veli ve öğrenci ifadelerinden bazılarına yer verilmiştir.

V2: *"Servisle gidiyor. Devlet servis verdi. Herhangi bir ücret vermiyoruz."*

ÖĞ2 (Erkek, 5.sınıf): *"Servisle gidiyorum. Şimdiye kadar bir kere kaçırdım. Kaçırdığım zaman okula gidemiyorum."*

ÖĞ10 (Kız, 6.sınıf): *"Servisle gidip geliyorum. Servise binerken sürekli kargaşa çıkıyor."*

2.4. Öğrencilerin Okul İdaresi, Öğretmenleri ve Arkadaşları ile İlişkilerine Dair Bulgular

Velilere yöneltilen "Öğrencinizin okul arkadaşları ve öğretmenleri ile ilişkileri nasıldır ve bu konuda yaşadığı sorunlar varsa nelerdir?" sorusu ile öğrencilere yöneltilen "Okul arkadaşların ile arkadaşlık ilişkilerin nasıl?", "Okul idaresi ve öğretmenler ile iletişimin nasıl?" sorularına ilişkin verilen cevaplar Tablo 9'da belirtilmiştir.

Tablo 9 Okul İdaresi, Öğretmenleri ve Arkadaşları İle İlişkiler

Tema: Okul idaresi, öğretmenler ve arkadaşlar ile ilişkiler	Katılımcılar	Frekans
Okul arkadaşları ile tartışmalar	V1, V3, ÖĞ4, ÖĞ8, ÖĞ9, ÖĞ10	6
Öğretmenlere karşı olumsuz tutum	V1, V2, ÖĞ2, ÖĞ10	4

Tablo 9 incelendiğinde; öğrencilerin en çok arkadaşları ile tartışma yaşadığı, bazı öğrencilerin de öğretmenlerine karşı olumsuz tutum içerisinde olduğu görülmektedir. V1 kodlu veli, öğrencisinin hem okul arkadaşları ile hem de öğretmenleri ile sorunlar yaşadığını ifade etmiştir. Aynı şekilde ÖĞ10 kodlu öğrenci de okul arkadaşları ve öğretmenleri ile sorunlar yaşadığını belirtmiştir. Bu sorunlara yönelik veli ve öğrenci görüşleri aşağıda yer almaktadır.

V1: *"İlk zamanlar kötüydü, şu an iyi."*

ÖĞ8 (Erkek, 6.sınıf): *"İyi. Ara sıra arkadaşlarla laf dalaşı oluyor. Sonra düzeliyor."*

ÖĞ9 (Erkek, 6.sınıf): *"Arkadaşlarımla ilişkilerim çok iyi. Kavga değil ama laf dalaşına girdiğim arkadaşlarım oldu. Ama aramın kötü olduğu arkadaşım yok. Arkadaş sayım da çok fazla."*

2.5. Velilerin Okulu Ziyaret Etme Sıklığı ve Nedenlerine İlişkin Bulgular

Velilere sorulan "Okulu ne sıklıkla ziyaret edersiniz? Ziyaret sebebiniz genel olarak ne olur?" sorusuna yönelik verilen cevaplar Tablo 10'da sunulmuştur.

Tablo 10 Okulu Ziyaret Etme Sıklığı ve Nedenleri

Tema: Okulu ziyaret etme sıklığı ve nedenleri	Katılımcılar	Frekans
Hiç gidemedim (Konteyner kentte toplantı yapıldı.)	V5, V6, V8	3
1 kere gittim.	V1, V4, V7	3
Sadece toplantılara gittim.	V2, V3	2
Toplantılar ve özel durumlar haricinde de gittim.	V9, V10	2

Velilerin çoğu öğrencilerinin önceki okulunu daha sık ziyaret ettiklerini, şu anki okulun uzak olmasından dolayı sadece toplantılara katıldıklarını, öğretmenleri çağırdığı zaman gittiklerini belirtmişlerdir. Bazı veliler ise toplantılara dahi katılamadığını, okula nasıl gidileceğini bilmediğini ifade etmişlerdir. Toplantıların bazılarının konteyner kentte yapıldığını belirten veliler de olmuştur. Buna yönelik veli ifadelerinden bazılarına aşağıda yer verilmiştir.

V1: *"15 günde bir ziyaret ederdim önceki okulunda. Burada sadece bir kere gittim komşunun arabasıyla. Veli toplantılarına da katılamadım. Nasıl gidilir bilmiyorum."*

V5: *"Hiç ziyaret etmedim. Ben normalde bütün toplantılara giderim. Her gün alırım bırakırım ama servisle gittikleri için benim imkânım olmadı. Toplantıların hiçbirine gidemedim. Önceki okullarında sürekli gidiyordum. Burada mesafeden dolayı gidemiyorum."*

V7: *"Ziyaret edemedik. Toplantıyı da biz gidemediğimiz için hocamız burada yaptı. Sadece bir kere gittim. Önceki okulda her gün kendim götürüp getirdiğim için her gün görüşüyordum hocalarıyla. Ne olmuş ne bitmiş, hangi puanı düşmüş hepsini öğreniyordum."*

2.6.Okuldan Gelen Şikâyetler ve Sebeplerine İlişkin Bulgular

Velilerle "Öğrenciniz ile ilgili okuldan herhangi bir şikâyet geliyor mu? Geliyorsa sebepleri nelerdir?" sorusu paylaşılmış ve Tablo 11'deki cevaplar alınmıştır.

Tablo 11 Okuldan Gelen Şikâyetler ve Sebepleri

Tema: Okuldan gelen şikâyetler ve sebepleri	Katılımcılar	Frekans
Şikâyet gelmedi.	V1, V3, V4, V5, V6, V7, V8, V9, V10	9
Arkadaşlarıyla ilgili şikâyet geldi.	V2	1

Tablo 11 incelendiğinde velilerin 9'u okuldan hiçbir şikâyet gelmediği yönünde, 1'i ise arkadaşlarıyla ilgili şikâyet geldiği yönünde görüş belirtmiştir. Buna ilişkin veli görüşlerinden birkaçı aşağıda verilmiştir.

V1. *"Öğretmenleri kendisinden çok memnun. Şikâyet gelmedi."*

V2. *"Şikâyet geliyor. Öğretmenleri ile ilgili değil, arkadaşlarıyla ilgili şikâyetler."*

V3. *"Öğretmenlerinden hiç şikâyet duymuyorum, çok memnunlar."*

2.7.Öğrencilerin Konteynerde Kalmaktan Dolayı Yaşadığı Sorunlara İlişkin Bulgular

Velilere yöneltilen "Öğrencinizin konteynerde kalmaktan dolayı yaşamış olduğu sorunlar nelerdir?" sorusu ile öğrencilere yöneltilen "Bir öğrenci olarak konteynerde ne tür problemler yaşıyorsun?" sorusuna yönelik cevaplar Tablo 12'de sunulmuştur.

Tablo 12 Konteynerde Kalmaktan Dolayı Yaşanan Sorunlar

Tema: Konteynerde kalmaktan dolayı yaşanan sorunlar	Katılımcılar	Frekans
Dar alan	V4, V6, V7, V10, ÖĞ3, ÖĞ7, ÖĞ8, ÖĞ9	8
İnternetin yokluğu	V1, V5, ÖĞ1, ÖĞ6, ÖĞ10	5
Arkadaş yokluğu	V1, ÖĞ3	2
Arkadaş çevresini tanımama	V3	1
Ders çalışmama/çalışamama, ödevlerini takip edememe	V3, V5, V6, V8, ÖĞ6, ÖĞ7, ÖĞ9	7
Kardeşlerle geçimsizlik	V10	1
Kütüphane ortamının yokluğu/yer bulamama	ÖĞ1, ÖĞ2, ÖĞ9	3
Çok fazla gürültü olması	ÖĞ5, ÖĞ7	2

Tablo 12 incelendiğinde; veli ve öğrenciler konteynerdeki en büyük sorun olarak alanın dar oluşunu belirtmişlerdir. Alanın dar olmasına bağlı olarak ders çalışamadıklarını, konteynerde internet sorunu yaşadıklarını, arkadaş ortamının olmamasını, kütüphanede yer bulamadıklarını, konteyner kentte dışarıdan çok fazla ses geldiğini de ifade etmişlerdir. Konteynerde yaşamanın getirdiği sorunlara yönelik veli ve öğrenci görüşlerinden bazıları aşağıda yer almaktadır.

V3: *"Burada hiç tanımadığımız arkadaş çevreleri var. Bizim mahallede konuştukları öğrencilerin, çocukların hepsinin aileleri ile de tanışıyorduk. Kim olduklarını biliyorduk. Burada öyle bir ortam var ki ne çocuğu tanıyoruz ne ailesini tanıyoruz ne ortamını biliyoruz. Yani çocuklarımızın terbiyesi %100 tersine döndü gibi. Her şey çok değişti burada. (…)"*

V5: *"Ders çalışamıyor, odaklanamıyor. İnterneti bağladılar ama çekmiyor."*

ÖĞ1 (Kız, 8.sınıf): *"Kütüphane sıkıntısı var. Çalışma ortamı uygun değil."*

2.8. Konteyner Kentte Yaşayan Öğrencilerin Yaşadığı Diğer Sorunlara İlişkin Bulgular

Velilere ve öğrencilere "Eklemek istediğiniz başka problem var mı?" sorusu yöneltilmiş ve verilen cevaplar doğrultusunda Tablo 13 oluşturulmuştur.

Tablo 13 Konteyner Kentte Yaşayan Öğrencilerin Yaşadığı Diğer Sorunlar

Tema: Diğer sorunlar	**Katılımcılar**	**Frekans**
Hayatı boş vermişlik	V1	1
Eski okulunu isteme	V2	1
Sessiz ortam isteği	V5, V7	2
Çok çabuk sinirlenme, bağırma	V5, V8	2
Davranış değişikliği	V8	1
Anne babanın ayrılması	V10	1
Çevrenin tehdidi	ÖĞ2	1

Tablo 13 incelendiğinde konteyner kentte yaşayan öğrencilerin yaşadığı diğer sorunların hayatı boşvermişlik, eski okulunu isteme, sessiz ortam isteği, çabuk sinirlenme ve bağırma, davranış değişikliği, anne babanın ayrılması ve çevrenin tehdidi olduğu görülmektedir. Bazı veli ve öğrencilerin görüşleri şöyledir:

ÖĞ2 (Erkek, 5.sınıf): *"Bir tane çocuk var. Küfrediyor, vuruyor. Ben bisiklet sürerken ayağım kaydı, düşmemek için yanlışlıkla onun ayağına bastım. O da babasına söyledi. Babası diyor ki bu mahalleden geçme seni vururum. Beni tehdit ediyor."*

V5: *"Depremden sonra biraz daha sessiz ortam istiyor. Kardeşlerine normalde bağırmaz çağırmaz. Ama şimdi en ufak bir seste kardeşlerine bağırır."*

V8: *"Hayır. Yani çocuğum depremden etkilendi de önceden de çok ders çalışmıyordu zaten. Davranış olarak çok değişti. Çok asabi oldu burada."*

SONUÇLAR ve TARTIŞMA

Yaşanan doğal afetler nedeniyle birçok insan hem maddi hem manevi kayıplara uğrar. 6 Şubat 2023'te yaşanan depremlerden bir ay sonra açıklanan değerlendirme raporuna göre, depremden etkilenen 11 ilde toplam 518009 adet konutun ağır hasarlı, yıkık ya da yıkılacak kategorisine girdiği tespit edilmiş ve toplam 2273551 kişinin barınma sıkıntısı yaşadığı belirlenmiştir (Strateji ve Bütçe Başkanlığı, 2023). Bu nedenle insanlar çadır ve konteyner gibi geçici yaşam merkezlerinde hayatlarını sürdürmek zorunda kalmıştır. Çocukların yaşadıkları ortamın değişmesi birçok olumsuzluğu beraberinde getirdiği gibi bu olumsuzluklar çocukların okul hayatına da etki etmektedir.

Bu çalışmada 6 Şubat 2023 depremleri sonrası konteyner kentte yaşayan öğrencilerin yaşadığı sorunlar ve bu sorunların okula yansımalarının nasıl olduğu yönetici, öğretmen, veli ve öğrenci görüşlerine göre incelenmiştir.

Çalışma kapsamında yapılan görüşmelere göre öğrencilerin yaşadığı başlıca sorunlar; davranış problemleri, disiplin ve uyum sorunları, psikolojik ve sosyal sorunlar, derslerindeki başarı oranında azalma, görev ve sorumlulukların yerine getirilmemesi, ders kitabı ve kaynak kitap eksikliğidir. Ayrıca maddi olanakların yetersizliği, konteyner alanının dar olması, mahremiyet

sınırlarının korunamaması, okula devamsızlığın artması, derse ve okula karşı ilgisizlik gibi sorunların yaşandığını da belirtmişlerdir.

Deprem öncesi bir düzen içerisinde yaşayan çocuklar, deprem sonrası yüzlerce insanın bir arada yaşadığı, imkânlarının kısıtlandığı konteynerde yaşamaya mecbur kalmıştır. Öğrencilerin, ortamın değişmesi ile yeni ortama ayak uyduramama, eski arkadaşlarını ve eski okulunu isteme, içine kapanma, kendini ifade etmede yetersizlik, saldırganlık ve şiddet eğilimi gibi davranış problemleri, çabuk sinirlenme, motivasyon kaybı ve odak sorunu gibi sorunlar yaşadıkları görülmüştür. Gülünay vd. (2024) araştırmasında da benzer sonuçlara ulaşılmıştır.

Araştırma sonucunda konteyner ortamına alışmakta güçlük çeken öğrenciler aynı şekilde yeni okullarına alışmada da güçlük çekmiştir. Uyum sağlamada çekilen bu güçlükler öğrencilerde davranış problemlerini ortaya çıkarmıştır. 6 Şubat 2023 depremlerini yaşayan öğrencilerde görülen en temel sorun davranış problemi olmuştur. Aşırı tepkili davranma, saldırganlık ve şiddete eğilim, akran zorbalığı, argo sözcük kullanımı, cinsel konulara eğilim ve mahrem konularda özensiz davranma gibi sorunlar bu davranış problemleri arasında sayılmıştır. Limoncu ve Atmaca (2018)'ya göre, özellikle 6-11 yaş aralığını kapsayan okul dönemi çocuklarında okula gitmek istememe, özgüven eksikliği, okul içerisinde saldırganlık ve öfkeli davranışlar görülebilir. Yine Girardi vd. (2020)'nin Montreal'deki geçici barınaklarda yaşayan çocuklar üzerine yaptıkları çalışmada, akran ilişkilerinde kopukluk ve çocuklarda kaygılı davranışların görüldüğü sonucuna ulaşmışlardır.

Araştırma sonucuna göre okul içerisinde yaşanan uyum sorunları arasında; yeni okula ayak uyduramama, okula gitmek istememe, kendi öğretmenini, okulunu, sınıfını isteme, okul arkadaşları ile tartışmalar, dışlanma, öğretmenlere karşı olumsuz tutum, farklı kültürlerin bir arada yaşama zorluğu gibi sorunlar bulunmaktadır. Coffman (1998), çocuklar arkadaşlarından kopmak zorunda kaldıklarında ya da arkadaşlarını kaybettiklerinde kendilerinde psikolojik ve davranışsal olarak çok ciddi problemlerin ortaya çıktığını belirtmiştir.

Yönetici, öğretmen ve velilerin belirttikleri görüşlere göre eğitim ve öğretim sürecinde yaşanan en önemli sorun, akademik başarı oranındaki düşmedir. Başarısız öğrencilerin başarılı öğrencileri olumsuz etkilediği, okuma ve yazmada gerileme görüldüğü, görev ve sorumlulukların yerine getirilmediği, ödevlerin yapılmadığı, ders araç gereçlerinin getirilmediği, derse hazırlıksız gelindiği öğretmenler tarafından tespit edilmiştir. Bu durumun ortaya çıkmasında rol oynayan etkenler olarak; derse ve okula karşı ilgisizlik, okulu ikinci plana atma, okula geçici gözle bakma, devam konusunda duyarsızlaşma, devamsızlığın artması, konsantrasyon problemi, motivasyon eksikliği, dikkat düzeylerindeki azalma, hazırbulunuşluğun düşük olması sayılabilir. Literatüre bakıldığında Usami vd. (2012)'nin 2011 yılında yaşanan Japonya depremi ve tsunamisinden 8 ay sonra çocuklar üzerinde yaptığı çalışma ile çocuklarda dikkat eksikliği ve anksiyete belirtilerinin ortaya çıktığı sonucu bu araştırmanın bulguları ile örtüşmektedir.

Öğretmen görüşlerine göre sınıf içerisinde yaşanan disiplin problemleri çok fazla artış göstermiştir. Öğretmenler dersin olağan akışına engel olma, uyarıları dikkate almama, sınıf ortamında hırsızlık gibi durumların ortaya çıktığını belirtmişlerdir. Deprem, yangın, sel, tsunami gibi doğal afet krizlerinden sonra öğrencilerde stres ve kaygının artması sonucu sınıflarda birtakım problemlerin görülmesi muhtemeldir. Bu problemler derse odaklanamama ve motivasyon kaybı (Breen ve Meyer, 2021) gibi akademik problemler olabileceği gibi dersin ve sınıfın kurallarına karşı gelme gibi disiplin ve uyum problemleri de olabilir. Ayrıca sınıf ortamında akranlarıyla sözlü ya da fiziksel çatışmaya girme, arkadaşlarına zorbalık yapma, öğretmene karşı saygısızlık yapma, öğretmenden izinsiz konuşma ve ayağa kalkıp sınıfta gezinme, maddi sıkıntılar çeken öğrencilerin başkalarının eşyalarını izinsiz kullanması gibi istenmeyen davranışlar da görülebilir (Atalay, 2023).

Deprem gibi doğal afetlerden etkilenen en savunmasız grup çocuklar olmaktadır (Aydoğdu ve Fofana, 2023). 6 Şubat 2023'te yaşanan iki deprem sonrası psikolojik olarak sarsılan çocuklarda derin izler kalmıştır. Yapılan bu çalışmanın sonucuna göre kaygı ve endişe dolu çocuklar, deprem korkusu nedeniyle okul binalarına girmek istememektedir. Bazı öğrencilerin ağır duygusal sorunlar yaşadığı, ders ve hayat amaçlarında belirsizlik görüldüğü, hayatı boş verdiği, içine kapandığı, kendini ifade etmede yetersiz kaldığı, psikolojik ve duygusal değişimlerinde sıklık yaşadığı, sese karşı fazla duyarlı olduğu, uykusuzluk çektiği, psikolojik iyi oluşu sağlayamadığı, mental olarak boşluk hissine kapıldığı sonucuna ulaşılmıştır. İlgili literatüre bakıldığında Aykaç ve diğerleri (2024), 16 anaokulu öğretmeni ile yaptıkları çalışmada öğrencilerin korku ile yaşadığı, içine kapandığı ve ifade becerilerinde eksiklik yaşadığı sonucuna varmıştır. Bozkurt (2023) depremzedelerle yaptığı görüşmelerde depremzedelerin uykusuzluk, hayatı anlamsız bulma, boşluk hissi, korku gibi sorunları sıklıkla tekrar ettiğini dile getirmiştir.

Yaşanan depremler sonrası birçok öğrencinin anne ve babasının ayrıldığı yöneticiler tarafından ifade edilmiştir. Parçalanmış ailelerden gelen bu öğrencilerin hayata yenik başladıkları, hayatı boş verdikleri, bir hedeflerinin ve umutlarının olmadığı yönünde görüşler belirtilmiştir. Baba otoritesinin olmaması, velilerin ilgisizliği ve duyarsızlığı nedeniyle öğrencilerin problemlerini gidermede zorluk çekildiği de sorun olarak görülmektedir. Alkan (2018)'ın yaptığı çalışmada bütünlüğü bozulmuş aile çocuklarının ebeveyn ve rol model eksikliği çektiklerini, yeterli desteği göremediklerini, özgüven kaybı yaşadıklarını belirtmiştir. Aile ile okul iş birliğinin yetersiz kalması ve maddi sıkıntıların yaşanması sonucu öğrencilerin okul başarısının da olumsuz etkilendiği ortaya çıkmıştır. Atmaca ve Kılıç (2024)'ın yapmış oldukları çalışmada ise parçalanmış aileye sahip çocuklarda stres seviyesinin yüksek olduğu, okula devamsızlığın arttığı, okula uyum sağlanamadığı, dolayısıyla okul başarılarının düştüğü ifade edilmiştir. Ayrıca sosyal çevre ilişkilerinde zorlandıkları ve özgüven eksikliği yaşadıkları da çalışmanın bulguları arasındadır.

Öğrencilerin okula ulaşım ve beslenme konusunda sorun yaşamadığı belirtilse de okulun uzak olmasından dolayı velilerin okulu ziyaret edememesi yöneticiler tarafından sorun olarak görülmüştür. Veliler ise çoğunluk olarak veli toplantıları ve öğrencilerinden herhangi bir şikâyet gelmesi gibi mecburi durumlarda okula gittiğini belirtmiştir.

Veli ve öğrencilerle yapılan görüşmelerle elde edilen bulgulara göre öğrencilerin konteyner kentte çok fazla sorunla karşı karşıya kaldıkları ortaya çıkmıştır. Veliler konteyner ortamının olumsuz olduğunu belirtmiş, çocuklarının arkadaş çevresini tanımadıklarından dolayı tedirgin olduklarını ifade etmişlerdir. Arkadaş ortamının olmaması sebebiyle konteynerden dışarı çıkamayan çocukların kardeşleriyle geçimsizlik yaşadıkları ortaya çıkmıştır. Çocuklar oyun oynayarak, arkadaşlarıyla vakit geçirerek ve sosyalleşerek streslerini atar ve mutlu olurlar. Ancak konteyner ortamında alanın sınırlı olması ve hareket özgürlüklerinin kısıtlanması çocuklarda stres yükünün ve kaygının artmasına neden olmaktadır. Dolayısıyla uzun süre küçük bir alanda zaman geçirmek zorunda kaldıkları aileleri ve kardeşleriyle daha sık geçimsizlik yaşamaları da sıklıkla rastlanan bir durumdur (Tekin-Babuç ve Gökçe, 2024).

Ekonomik sıkıntılar yaşayan veliler konteyner kentte mecburiyetten kaldıklarını belirtmiş, konteynerde alanın dar ve yetersiz olmasından dolayı çocukların ders çalışamadıklarını söylemişlerdir. Öğrencilerin bazıları kütüphanede ders çalışmak istediklerini ancak kütüphanede ya çok ses olduğunu ya da yer bulamadıklarını belirtmişlerdir. Bunlara ek olarak maddi imkânların yetersizliğinden dolayı kaynak kitap alamadıklarından, internet çekmediği için telefondan bile ders çalışamadıklarından, bu sebeple başarılarının düştüğünden yakınmışlardır. İlgili literatürde Erdoğdu (2007)'nun yaptığı çalışmaya göre sosyoekonomik düzeyi yüksek olan öğrencilerin, sosyoekonomik düzeyi düşük olan öğrencilerden daha başarılı olduğu tespit edilmiştir. Bu tespitin nedeni olarak da ailelerin, çocuklarının eğitim hayatıyla yakından ilgilendiklerinden dolayı bu başarıyı elde ettiklerini ileri sürmektedir. Ancak konteyner ortamında öğrencilerinin ödev takibini dahi yapamadığını belirten veliler olmuştur.

Öğrencilerin kendilerine ait özel bir alanın olmaması mahremiyet sınırlarının korunamaması problemini beraberinde getirmiştir. Bütün aile bireylerinin küçük bir alanda yaşaması sonucu özel hayata dair bir gizliliğin kalmadığı, mahrem konulara ve cinsel eğilime meyilli öğrencilerin olduğu yöneticiler tarafından ifade edilmiştir. Literatüre bakıldığında Polat ve Sarıçam (2024)'ın yaptıkları çalışmada benzer sonuçlara ulaşılmıştır. Yine Kümbetoğlu vd. (2007) yaptıkları çalışmada, 17 Ağustos 1999 Düzce depremi sonrası prefabriklerde ve çadırlarda yaşayan ailelerde mahremiyetin büyük bir sorun haline geldiği sonucuna ulaşılmıştır.

Öneriler

Çalışmada elde edilen bulgular neticesinde aşağıdaki öneriler dikkate alınabilir:

- Öğrencilerin özellikle duygusal, psikolojik ve davranışsal olarak problemler yaşadığı görülmektedir. Bu sorunlarla baş etmede öğrencinin yalnız kalması önlenebilir. Okulda yöneticiler, öğretmenler ve okul rehber öğretmenleri iş birliğiyle öğrenciye destek verebilirler; öğrencinin kendi sorunlarıyla baş etmesine yönelik geliştirici uygulamaları veya gerekli yönlendirmeleri sağlayabilirler. Yine aynı şekilde evde ebeveynler, çocukların sorunları üzerinde durabilir ve iyileşmelerine katkı sağlayabilir. Bu konuda ebeveynlere eğitimler verilerek bilgilendirilebilir ve yetiştirilebilir. Böylece afetlerin bıraktığı hasarlar en aza indirilebilir.
- Velilere; parçalanmış ailenin çocuğa yansımaları ve nasıl yaklaşılması gerektiği, geçici konut içerisinde mahremiyetin nasıl sağlanması gerektiği gibi konularda eğitimler düzenlenebilir.
- Konteyner kentte yaşayan öğrencilerin tamamının aynı okul çatısı altında toplanması, depremin ve konteynerde yaşamanın etkisiyle ortaya çıkan birçok problemin o okula taşınmasına sebebiyet vermektedir. Bu uygulamanın yerine konteyner kentte kalan öğrenci sayısının, gönderildiği okuldaki toplam öğrenci sayısının belli bir yüzdesini geçmeyecek şekilde okullara dağıtılması ve öğrencilerin konteynerde yaşamayan akranları ile eğitim almaları sağlanabilir. Böylece yaşanan problemler en aza indirilebilir.
- Öğrencilerin akademik başarısızlığının engellenebilmesi ve aradaki açığın giderilebilmesi için sadece 8. sınıflara yönelik olan destekleme ve yetiştirme kursları 5, 6 ve 7. sınıflara da açılabilir.
- Konteyner kentte var olan fakat imkanları yeterli görülmeyen çalışma salonları ile kütüphanelerin sayısı ve niteliği artırılabilir. Öğrencilerin haftanın belirli günlerinde ve belirli saatlerinde taşımalı servis uygulaması ile millet kütüphanelerinden faydalanması da sağlanabilir.
- Konteyner kentteki internet alt yapı sorunu giderilebilir, ödevlerine ve derslerine yardımcı olabilecek tablet, bilgisayar gibi teknolojik aletler ile öğrenciler desteklenebilir. Öğrencilerin kaynak kitap, ders araç gereç ve materyal eksiklikleri giderilebilir.
- Konteyner kentin güvenliği konusunda daha hassas ve özenli davranılabilir.
- Konteyner kentte yeterli imkânın ve ortamın olmamasından dolayı çocukların gelişim dönemleri de dikkate alınarak konteyner kent içerisinde sportif faaliyetler ile sanatsal ve kültürel etkinlikler gerçekleştirilebilir.
- Velilerin okulu daha sık ziyaret edebilmeleri için velilere özel servis vb. kolaylıklar sağlanabilir.

Bu çalışmada ortaokul düzeyinde eğitim gören ve konteynerde yaşayan depremzede öğrencilerin yaşadıkları sorunların eğitim hayatına nasıl yansıdığını ortaya koymak amaçlanmıştır. Bu konu üzerine yapılan yeteri kadar araştırmaya rastlanmamıştır. Araştırmacılar diğer eğitim kademelerinde ya da farklı örneklemlerle çalışarak literatüre katkı

sağlayabilir. Bu araştırmada elde edilen veriler sonraki araştırmalar için rehber ve örnek olabilir.

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6 February 2023 Effects of the Problems Experienced by Secondary School Students Living in Container City after the Earthquakes

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Abstract
The aim of this study is to determine the problems experienced by secondary school students living in container cities after the earthquakes of 6 February 2023 and the effects of these problems on the school according to the views of administrators, teachers, parents and students. The study was conducted with the case study method, one of the qualitative research methods. The study group consists of 5 administrators, 10 teachers working in official secondary schools in Battalgazi district of Malatya province in the spring term of 2023-2024 academic year, and 10 students and their parents studying in these schools. The data in the study were obtained through a semi-structured interview form. The collected data were analysed using descriptive analysis and content analysis. According to the findings of the study, it was revealed that students had behavioural problems, were exposed to psychological problems, had difficulty in adapting to their new schools and classrooms, their academic achievement decreased, and they experienced attention deficit and loss of motivation. It was concluded that problems such as inability to study due to the narrowness of the container area and inability to protect privacy boundaries arose. In addition, it was also found that students became withdrawn, felt a sense of emptiness, inadequate self-expression, quick temper, use of slang words, peer bullying, aggressive behaviours and tendency to violence increased.According to the findings of the study, suggestions such as increasing school-family cooperation, providing necessary trainings to parents, ensuring that students are educated in different schools instead of gathering them under the same school roof, improving the container environment and financial opportunities, and developing different educational opportunities were made for the problems experienced by the students.

Keywords: Earthquake, education, student, teacher, parent.

INTRODUCTION

Disaster is the result of extraordinary events that affect people's lives and actions, cause material and moral losses, and the possibilities available to the affected people are incomplete and insufficient (Kadıoğlu, 2011). Natural disasters occur mostly due to uncontrollable reasons. It is possible to classify natural disasters as slow developing and fast developing. Disasters such as environmental pollution, erosion, destruction of forests, drought are slow developing natural disasters that occur over time. However, unpredictable and sudden disasters such as volcanic eruptions, landslides, avalanches and floods are fast developing natural disasters. One of the sudden natural disasters is earthquake (Disaster and Emergency Management Presidency [AFAD], 2024). Earthquake occurs as a result of the expression of the energy accumulated in the earth's crust through the cracks between the plates (Sözcü, 2019). This energy can be felt as vibration or shaking.

Hundreds or even thousands of earthquakes occur almost everywhere in the world. There are earthquakes whose shaking is not felt, as well as earthquakes that are destructive and cause loss

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of life. The United States Geological Survey (USGS) reports that there are approximately 500,000 earthquakes every year, only 20% of which can be felt and approximately 100 of which cause damage (AFAD, 2018).

Turkey is one of the most earthquake-prone countries as it is located on the most active earthquake belts due to its geographical location (AFAD, 2018). On February 6, 2023, Turkey was shaken by two major earthquakes with epicenters in Pazarcık district of Kahramanmaraş and Elbistan district of Kahramanmaraş. The first one was at 4.17 am with a magnitude of 7.7 and the second one at 13.24 am with a magnitude of 7.6. Afterwards, many aftershocks continued to make themselves felt in the region. After the 7.9 magnitude earthquake in Erzincan on December 27, 1939, the two earthquakes were the two largest earthquakes after the 7.9 magnitude earthquake in Erzincan, and were therefore referred to as the "Disaster of the Century". These earthquakes, which made headlines as "The Most Severe Earthquake of the Last Century" (Anadolu Agency, 2023), affected many provinces, especially Kahramanmaraş, Hatay, Malatya, Adıyaman, Adana, Diyarbakır, Gaziantep, Kilis, Osmaniye and Şanlıurfa. A considerable number of houses, religious buildings, health and education institutions, and public institutions were destroyed or moderately to severely damaged. A total of 53,537 citizens lost their lives and 107,213 citizens were injured in these major earthquakes, which caused both loss of life and property (Turkish Medical Association [TTB], 2024). The February 6, 2023 earthquakes took its place as the earthquake with the highest loss of life in the history of Turkey (Darga, 2023). Turkey launched a level four emergency call for assistance for these earthquakes.

After the earthquake, education activities were initially postponed until February 20. On February 20, 71 provinces resumed education, while the earthquake provinces were divided into three categories. Diyarbakır, Kilis and Şanlıurfa in the first category resumed on March 1; Adana, Gaziantep and Osmaniye in the second category resumed on March 13; and some districts of Malatya, Adıyaman, Kahramanmaraş and Hatay in the third category resumed on March 27. In other districts, the decision to resume education was given to the relevant governorships, and schools that received a soundness report as a result of damage assessment studies were reopened intermittently (MEB, 2023).

Earthquakes in our country negatively affect the society in material and moral aspects. These effects can be seen as social, spiritual, economic, environmental and physical (Tan-Gülünay, et al., 2024). One of the areas where these effects are felt the most is education services. Many negative situations such as damage to school buildings, unusability of educational tools and equipment, loss of life among teachers, students and other personnel can be encountered (Demir-Yıldız and Demir-Öztürk, 2023). These are the main factors that prevent the continuation of education activities.

Earthquakes, which have threatened and continue to threaten people's lives, have been the subject of many studies. After the 1992 Erzincan earthquake and the 1999 Gölcük and Düzce earthquakes (Ayas & İskender, 2014; Bakioğlu & Savaş, 2001; Erkan, 2010; İçme & Büyük, 2023), studies have become especially intense. Earthquakes leave deep traces on people both during and after the earthquake (Karakuş, 2013). For this reason, studies on students' earthquake perception and awareness levels (Tuncer, et al., 2021) and psychological effects of earthquakes (Kardaş & Tanhan, 2018; Köse, et al., 2023) have also gained weight. Many studies have also been conducted after earthquakes in countries other than our country. Cheng et al. (2018) examined the effects of the earthquake in Sichuan province of China in 2008 on children. Another study (Onigbinde, 2018) examined the impact of natural disasters on secondary school achievement with a sample of 85 countries. Paudel and Ryu (2018) examined the long-term effects of the 1988 Nepal earthquake on education and calculated the probability of lower and upper stratum children completing middle and high school. Basnet (2020) examined the impact of the earthquake that occurred in Nepal in 2015 on education.

There are many studies in the literature on how students, teachers and school administrators were affected after the earthquake (Arıcı, et al., 2023; Ceyhan & Ceyhan, 2006; Demirtaş, et al.,

2023; Özer, et al., 2024; Özoruç & Dikici-Sığırtmaç, 2024; Seyle, et al., 2013). However, it has been observed that there is a limited number of studies on the problems of students living in container cities and their impact on their educational lives. However, children are easily affected by natural disasters such as earthquakes and these effects are negatively reflected on their school lives. In the study conducted by Arslan (2023), it was revealed that after the earthquake, students' school achievement decreased, their absenteeism increased, and they experienced problems such as not being able to focus on the lesson and not being motivated. For this reason, teachers should be aware of these situations so that students' education is not negatively affected (Erkan, 2010). In this study, the impact of the earthquake on students' education and school life and what kind of problems they face will be examined. In this context, it is thought that the study will make a limited contribution to the literature.

The aim of this study was to understand the problems experienced by students after the earthquakes on February 6, 2023, and to examine more closely how these problems left traces on students and how these traces were reflected in their in-school behaviors. When the literature was reviewed, it was seen that there were a limited number of studies (Bayındırlı, 2016; Kılıç & Kıygı, 2024; Yanardağ, 2024) on the problems experienced by families and students staying in container cities, one of the temporary settlement areas after the earthquake. This study aims to fill the gap in the literature. In this context, answers to the following questions will be sought:

Within the scope of this research, answers to the following questions will be sought:

1) What are the effects of the earthquake on students living in container cities?

2) What kind of problems do students living in container cities experience after the earthquake?

3) How are the problems experienced by students living in container cities after the earthquake reflected on the school?

METHOD

In this study, the case study method, one of the qualitative research methods, was used to determine the problems experienced by secondary school students living in container cities after the earthquakes in Kahramanmaraş on February 6, 2023 and how these problems were reflected in the school. A case study is a comprehensive and detailed examination of a current issue in real life with various information gathering tools (Creswell, 2021).

Working Group

The study group consists of 5 administrators, 10 teachers, 10 parents and 10 students in two secondary schools in Battalgazi district of Malatya province in the spring semester of 2023-2024 academic year. While forming the study group, maximum diversity sampling and criterion sampling methods were preferred from purposeful sampling methods. The criteria for participating in the study were to have experienced the February 6, 2023 earthquakes, to be a middle school student and to live in a container city. Students who met these criteria and their parents were interviewed. Accordingly, teachers and administrators were selected from among those working in these two middle schools. Personal information about the administrators, teachers, parents and students who participated in the study is given in Table 1.

Table 1 Personal Information of the Administrators, Teachers, Parents and Students Participating in the Study

Participant	Category	Variable	n
Administrator	**Gender**	Woman	1
		Male	4
	Title	School Principal	2
		Assistant Principal	3
	Age	30-39 years	1
		40-49 years	4
		50+ years old	-
	Seniority Year	1-10 years	1
		11-20 years	1
		21+ years	3
Teacher	**Gender**	Woman	4
		Male	6
	Age	20-29 years	2
		30-39 years	8
		40+ years old	-
	Seniority Year	1-5 years	2
		6-10 years	6
		11-15 years	1
		15+ years	1
	Branch	Turkish	3
		Science	2
		Social Studies	1
		Religious Culture and Ethics	2
		Physical Education and Sports	1
		Information Technologies	1
Parent	**Proximity to Students**	Mother	10
		Father	-
	Education Status	Primary School	2
		Middle School	3
		High School	5
	Profession	Housewife	10
	Monthly Income	17000 TL and below	7

		17000 TL-25000 TL	1
		25000 TL-35000 TL	2
		35000 TL and above	-
Student	**Gender**	Woman	6
		Male	4
	Classroom	5	2
		6	3
		7	2
		8	3
	Mother's Education Level	Primary School	2
		Middle School	3
		High School	5
	Father's Education Level	Primary School	2
		Middle School	2
		High School	6

Data Collection Tools

In the study conducted to determine the impact of the earthquake on students' school life, semi-structured interview forms were used to collect the data. These forms were prepared separately for administrators, teachers, students and parents by the researchers and the opinions of two field experts (one of the experts is an associate professor and the other is a professor working in the field of educational sciences and they have conducted many qualitative studies) were also taken. After the evaluations, questions were added to answer the sub-problems of the research and the form was ensured to serve its purpose. The interview forms consist of two parts. The first part includes personal information about the participants. In the second part, open-ended questions prepared to reveal the problems experienced by the students were included. Some of the open-ended questions in the form and information about who was asked these questions are given in Table 2:

Table 2 Interview Questions

Administrator	After the February 6, 2023 earthquakes, what kind of problems did you observe in your students living in the container city? What is the mental state of your students? Do students experience psychological and social problems?
	Do your students living in container cities have problems with transportation, nutrition, etc.?
Teacher	After the February 6, 2023 earthquakes, were there any situations that you observed with your students living in the container city and that you experienced difficulties in the classroom?
	How have students living in container cities been affected in terms of homework, studying, and academic achievement?
	Are there any changes in students' interest and motivation, readiness, attendance and attention levels?
	Do you experience a lack of materials such as textbooks, resource books, tools, etc. required for the course?
Parent	How is your student's relationship with his/her schoolmates and teachers and what are the problems he/she has in this regard?
	How often do you visit the school? What is the reason for your visit in general?
Student	What kind of problems did you have in adapting to your school? Do you have difficulty following the classroom rules?
	As a student, what kind of problems do you experience in the container?

Data Collection and Analysis

Qualitative research, which deals with situations rather than numbers, focuses on understanding and explaining individuals' feelings, thoughts, attitudes and behaviors (Ocak & Olur, 2019). In this qualitative study, data were collected through individual and face-to-face interviews with 5 administrators, 10 teachers, 10 parents and 10 students. In the interview, the researcher and the participant are in direct communication (Karaca, 2021) and the participant is expected to express his/her views on the subject and answer the questions asked.

In order to make the data analysis accurate and easy, parents' and students' consent was obtained and audio recordings were made during the interviews. Administrators and teachers filled in the forms themselves in writing. The audio recordings and notes were analyzed using descriptive analysis and content analysis. In descriptive analysis, the general outlines and main themes of the research are clear before the research begins; it can also be shaped with new themes during the research process (Çelebi, 2021; Yıldırım & Şimşek, 2021). Content analysis is a flexible analysis method that enables in-depth, detailed analysis of the data collected in the research and the creation of new themes. In addition, through themes and codes in the data obtained, it can be seen through content analysis how often which term is mentioned (Alanka, 2024; Yıldırım & Şimşek, 2021).

Under each question asked to the participants, all the answers given by the relevant participant were added and the answers were seen as a whole. The answers given to the questions were analyzed one by one, similar and related concepts were identified as key concepts, and new sub-themes were created by bringing together the relevant ones.

In the quotations shared, codes were used for each participant due to the confidentiality principle. Administrators are indicated with the codes Y1, Y2, Y3, Y4, Y5; teachers with the codes

Ö1, Ö2, Ö3, ..., Ö10; parents with the codes V1, V2, V3, ..., V10 and students with the codes ÖĞ1, ÖĞ2, ÖĞ3, ..., ÖĞ10.

Validity and Reliability

In this study, a number of ways were followed to ensure validity and reliability. When preparing semi-structured interview form questions, attention should be paid to the quality of the questions and their suitability to the problem of the research rather than the number of questions (Polat, 2022). For this reason, before the semi-structured interview form was prepared, the relevant literature was reviewed and the questions in the form were prepared to answer the research questions and validity was tried to be ensured. Expert opinions were taken about the questions and the clarity and comprehensibility of the questions were checked with a pilot application. After the controls and opinions, the necessary final arrangements were made and the form was finalized.

When purposive sampling is used, the participants are directly related to the subject of the research and increase the validity of the research (Arslan, 2022). In this study, participants were selected through purposive sampling methods.

The participants voluntarily participated in the study, and permission was obtained from the parents with a parental permission document before the interviews with the students. The parents were contacted and parents and students were visited in the container at a suitable time, and the interviews were conducted face-to-face. After obtaining permission from them again, audio recordings were kept during the interviews and reliable analysis was ensured.

Another issue in ensuring validity is the confirmation of the findings by the participants. For this purpose, the results of the research were reported to the participants and confirmed. After confirmation, the interview forms, permission documents, audio recordings and notes used in the analysis process were filed and kept (Yıldırım & Şimşek, 2021).

The frequency of the sub-themes and statements that emerged as a result of the findings of the research are shown in tables and the frequency of the statements is indicated in the table (Tavşancıl & Aslan, 2001). In order to draw attention to the views of the participants, the views were conveyed with codes and direct quotations under the tables (Altunışık, et al., 2001). Participant identities were kept confidential and codes were given to each participant (Administrator: Y, Teacher: Ö, Parent: V, Student: ÖĞ). The determined sub-themes and codes were agreed upon in consultation with a field expert. In this way, reliability was increased by using more than one coder in data interpretation (Creswell, 2016).

Consistency is important in increasing reliability. For this reason, the findings of the study were compared with the findings of other studies in the literature and the results were found to be similar.

FINDINGS

In this study, the views of administrators, teachers, parents and students were examined in order to understand the problems experienced by secondary school students living in container cities after the earthquakes on February 6, 2023 and how these problems affect their situation in school. Some themes and sub-themes were formed with the data obtained after these interviews.

1. Findings Related to Administrator and Teacher Opinions

1.1. 6 Findings on the Problems Experienced by Students Living in Container Cities after the February 2023 Earthquakes

Within the scope of the research, administrators and teachers were asked "What kind of problems did you observe in your students living in container cities after the February 6, 2023 earthquakes? What is the mental state of your students? Do students experience psychological and social problems?" Table 3 shows the problems experienced by students living in container cities.

Table 3 Problems Experienced by Students Living in Container Cities

Theme: Problems Experienced by Students Living in Container Cities	Participants	Frequency
1. Sub Theme: Behavior and Adaptation Problems	Y1, Y2, Y3, Y4, Y5	5
Overreactive behavior	Y1	1
Violent tendency	Y2	1
Aggression and active behavior	Y3, Y5	2
Violence and shouting in mother, father, sibling	Y3	1
Over-age sexual orientation	Y2	1
Discipline problems, adaptation problems	Y1, Y4, Y5	3
Ignoring warnings	Y3	1
Lack of interest in class and school	Y3	1
2. Sub Theme: Psychological and Social Problems	Y1, Y3, Y5, Ö2, Ö4, Ö5,	8
Withdrawal	Y1	1
Inability to express oneself	Y1	1
Insomnia	Ö2	1
Anxiety and worry	Y3	1
Hypersensitivity to sound	Ö5	1
Wanting your own teacher, school, classroom	Y5	1
Complacency	Y3	1
Nervousness, stress, severe emotional problems;	Ö4	1
Frequency of psychological and emotional changes	Ö10	1
Failure to achieve psychological well-being	Y3	1
Not wanting to enter the building, fear of earthquake	Y5, Ö5, Ö8	3
Negative impact on their academic success	Y3	1
3. Sub Theme: Problems caused by Physical and Economic	Y3, Ö2	2
Economically difficult conditions	Y3	1
Lack of study environments	Y3, Ö2	2
Lack of internet connection	Y3	1
The difficulty of living in a confined space	Y3	1
4. Sub theme: Family Environment	Y3, Y4	2
Broken families	Y3, Y4	2
Failure to protect privacy boundaries	Y3	1

When we examine Table 3, according to the opinions of administrators and teachers, psychological and social problems are at the top of the list of problems experienced by students living in container cities after the February 6 earthquakes. In addition to these problems, it is also seen that there are behavioral and adaptation problems, problems caused by physical facilities and economic conditions, and problems arising from broken families. The views of administrators and teachers on some of these problems are given below.

Y1 (Male, 19 years of experience): *"Some of the students withdrew into themselves and were unable to express themselves. Some of them had overreactive behavior in addition to adaptation problems."*

Y3 (Female, 29 years of experience): *"Students living in containers are disinterested in class and school, many of them do not want to study. When they leave the harsh conditions of living in a confined space and come to the wider school environment, their aggression, active behavior and outbursts increase. They often ignore our warnings. (...) Complacency is more prevalent. We can observe that they are not psychologically well. (...)*

Ö2 (Male, 9 years of experience): *"There are days when our students come sleepless due to the lack of living space. We hear the victimization that there is no working environment."*

1.2. Findings Regarding the Problems Experienced by Students Living in Container Cities in the Classroom

In line with the answers given to the question "After the February 6, 2023 earthquakes, were there any situations that you observed in your students living in the container city and that you had problems in the classroom?", the problems experienced by the students living in the container city in the classroom are shown in Table 4.

Table 4 Problems Experienced by Students Living in Container Cities in the Classroom

Theme: Problems Experienced by Students Living in Container Cities in the Classroom	**Participants**	**Frequency**
1. Sub Theme: Behavior and adaptation problems	Ö1, Ö6	2
Peer bullying	Ö6	1
Use of slang words	Ö6	1
Sloppy behavior in intimate matters	Ö6	1
Tendency to violence	Ö1	1
Discipline and cohesion problem	Ö1	1
Difficulty following classroom rules	Ö6	1
2. **Sub Theme: Problems Experienced in the Education and Training**	Ö3, Ö4, Ö5, Ö6	4
Concentration problems	Ö5	1
Interfering with the normal flow of the lesson	Ö3	1
Distraction	Ö3	1
Decreased success rate in classes	Ö4, Ö6	2

According to Table 4, the problems experienced by the students in the classroom were generally situations that negatively affected the educational process and course success, as well as behavioral and adaptation problems. Some of the teachers' views on these problems are given below.

Ö1 (Male, 4 years of experience): *"In general, discipline problems occur. The tendency towards violence has increased."*

Ö5 (Female, 6 years of experience): *"They experience problems such as excessive sensitivity to sound, persistence of earthquake fears, and concentration problems due to this."*

Ö6 (Male, 12 years of experience): *"We may encounter problems such as peer bullying, careless behavior in private matters, use of slang words, and difficulty in following classroom rules."*

1.3. Findings on Students' Transportation to School and Nutrition Status

In response to the question "Do your students living in container cities have problems with transportation and nutrition?", all administrators stated that there were no transportation and nutrition problems. Some of the administrators' opinions on transportation and nutrition are given below.

Y2 (Male, 22 years of experience): *"Since students leave home early in the morning, we have witnessed many times that they usually come back without having breakfast. Students with poor financial conditions sometimes go hungry until they go home in the afternoon. This situation reduces the quality of education. Since our government allocates a shuttle bus, we can say that there is no problem with transportation. Except for the students who choose the vehicle and driver."*

Y4 (Male, 9 years of experience): *"There is no problem with transportation. Because both the containers are close to each other and transportation is provided by shuttles, we did not have any problems in that regard. There was no problem with nutrition either. Children have breakfast in the morning and come. They go home at noon."*

Y5 (Male, 23 years of experience): *"We haven't. All students come by shuttle service because it is part of transportation."*

1.4. Findings Regarding the Problems Experienced by Students in terms of Education and Training

In line with the answers given to the questions "How did the earthquakes affect students' school attendance and achievement?" asked to the administrators and "How were students living in container cities affected in terms of homework, studying, academic achievement?" and "Are there any changes in students' interest and motivation, readiness, attendance and attention levels?" asked to the teachers, the problems experienced by students in terms of education and training are given in Table 5.

Table 5 Problems Experienced by Students in terms of Education and Training

Theme: Problems experienced by students in terms of education and training		Participants	Frequency
1.	**Sub Theme: Negative impact on school attendance**	Y1, Y4	2
	Desensitization to attendance, increased absenteeism	Y1, Y4	2
	Failure to adapt to the new school	Y4	1
2.	**Sub Theme: Failure to fulfill duties and responsibilities**	Y5, Ö1, Ö2, Ö3, Ö4, Ö5, Ö6, Ö7, Ö8, Ö9, Ö10	11
	Failure to fulfill duties and responsibilities	Ö5	1
	Not doing homework or doing some of it	Y5, Ö2, Ö3, Ö4, Ö5, Ö7, Ö10	7
	Failure to bring course materials	Ö3	1
	Coming to class unprepared	Ö5, Ö8	2
3.	**Sub Theme: Changing interest and attitudes towards the course and school**	Y3, Y4, Ö2, Ö3, Ö5, Ö7, Ö8, Ö9	8
	Unwillingness to learn	Ö2, Ö7	2
	Lack of motivation	Y3, Ö3, Ö8, Ö9	4
	Focus problem	Ö3	1
	Decreased attention levels, distraction	Ö3, Ö5, Ö7, Ö8	4
	Low readiness	Ö8	1
	Uncertainty in course and life goals	Y3	1
	Complacency	Y4	1
	Putting school on the back burner, looking at school as temporary	Y4, Ö2	2
4.	**Sub Theme: Negative impact on their success**	Y2, Y4, Y5, Ö1, Ö3, Ö4, Ö5, Ö6, Ö7, Ö10	10
	Decline in reading and writing	Ö1	1
	Negative impact of unsuccessful students on successful students	Y2	1
	Decline in academic achievement	Y2, Y4, Y5, Ö1, Ö3, Ö4, Ö4, Ö5, Ö6, Ö7, Ö10	10

When we examine Table 5, which was created according to the views of administrators and teachers, it is seen that students experience problems such as increased absenteeism, failure to fulfill their duties and responsibilities, negative effects on their interest and attitudes towards

the course and school, and a decrease in their academic success. Some of the participant statements regarding these problems are as follows:

Y2 (Male, 22 years of experience): *"We witnessed especially successful students being influenced by unsuccessful students at the extreme. Failure almost increased in parallel with the container."*

Y3 (Female, 29 years of experience): *"Our students lack motivation. When they experience the life-death equation in the earthquake, we observe an uncertainty in their course and life goals."*

Ö2 (Male, 9 years of experience): *"Our students consider the container city environment as playing games because they live in a crowded environment. The homework assignments are done in parts or we encounter explanations like "I forgot it at home." (...)"*

1.5. Findings Related to Students' Lack of Course Materials and Equipment

Table 6 shows the problems experienced by the students in line with the answers given to the question "Do you experience a lack of materials such as textbooks, reference books, tools, etc. necessary for the course?" asked to the teachers within the scope of the research.

Table 6 *Lack of Course Materials and Equipment*

Theme: Lack of teaching aids and materials	**Participants**	**Frequency**
I lack textbooks and reference books.	Ö1, Ö2, Ö3, Ö5, Ö6, Ö7, Ö8, Ö9, Ö10	9
I do not lack textbooks and reference books.	Ö4	1

When Table 6 is analyzed, it is seen that most of the teachers stated that students had problems with the necessary tools, materials and books for the lesson. Teacher statements regarding this problem are presented below.

Ö5 (Female, 6 years of experience): *"There is a lack of textbooks. They state that they lost the books they received because they could not create a study area for themselves in the container."*

Ö6 (Male, 12 years of experience): *"Many students have resource problems in preparation for LGS. The high number of students limits additional activities within the school."*

Ö8 (Male, 10 years of experience): *"Since most of the students experience financial loss, we cannot ask for the necessary equipment for the course. Even if we do, most of the students cannot buy them."*

1.6. Findings on Other Problems Faced by Students

In response to the question "Apart from the above questions, are there any other problems experienced by the students?", the other problems encountered by the students are presented in Table 7.

Table 7 Other Problems Faced by Students

Theme: Other problems faced by students	**Participants**	**Frequency**
Low income level, financial problems	Y2, Ö1, Ö6	3
Theft in the classroom	Ö6	1
Negativity in the student's relationship with his/her parents	Ö6	1
The challenge of coexistence of different cultures	Y4, Ö6	2
Insensitive and indifferent parents	Y5, Ö1	2
The school is far away, parents cannot visit the school	Y5	1

Separation of parents, lack of paternal authority	Y2, Y4	2
Unfavorable container environment	Y1	1

When Table 7 is analyzed, it is seen that low family income level is the most common problem experienced by students. Other important problems that follow this are the separation of parents, parents' indifference, and the cultural differences of the students in the school. Other problems include theft incidents in the classroom, negative parental relations, negative container environment and the inability of parents to visit the school due to the distance of the school. Some of the statements of administrators and teachers regarding these problems are given below.

Y4 (Male, 9 years of experience): *"While every school has students from a certain segment of society, here there are all kinds of students from all over Malatya. Our students from the villages were very good. Now they have changed extremely in terms of behavior. There are many students from divided families. We have a lot of trouble because the father has no authority."*

Y5 (Male, 23 years of experience): *"We deal with parents more than students. Parents are insensitive, indifferent, not very interested in the success of the child. Even those who are interested cannot come to school because it is far away."*

Ö6 (Male, 12 years of experience): *"The financial problems experienced by children lead to theft incidents in school or in the classroom. The limited living space in the container negatively affects children's relationships with their parents. This is reflected in the school environment. The negative conditions of the environment, the coexistence of people with different levels of education, the difficulty of living together with different cultures and their effects are also reflected in the school environment."*

2. Findings on Parent and Student Opinions

2.1. *6 Findings Regarding Students' School Changes After the February 2023 Earthquakes*

Both parents and students answered "Yes" to the question "Did your student change schools after the February 6 earthquakes?" and to the question "Have you changed schools in the last 1 year?". It was stated that some students changed more than one school. Some of these statements are presented below.

V2: *"He passed through Inonu Primary School."*

ÖĞ6 (Female, 7th grade): *"I went through Hanımın Çiftliği Sadiye Lütfi Evliyaoğlu Secondary School."*

ÖĞ9 (Male, 6th grade): *"I was at Barbaros Secondary School in the 1st semester of the 5th grade. In the 2nd semester, I was at Tahsin Başdemir Secondary School. In the 6th grade, I transferred to Şehit Aytaç Altunörs Secondary School."*

2.2. Findings Related to Students' Adaptation to School

The responses to the question "Does your student have difficulty adapting to school?" asked to parents and the question "What kind of problems did you have in adapting to your school? Do you have difficulty complying with classroom rules?" are given in Table 8.

Table 8 Problems in Adapting to School and Classroom Rules

Theme: Problems in adapting to school and classroom rules	**Participants**	**Frequency**
Difficulty adapting to school	V1, V2, V3, V4, V6, V7, V8, V9, V10, ÖĞ2, ÖĞ3	11
Exclusion	V1, V4	2

Wanting the old environment, not wanting to go to school	V2, V7, V9	3

When Table 10, which was prepared according to the opinions of parents and students, is examined; it is seen that students have difficulty adapting to school, want their old environment, do not want to go to school and are excluded from school. Some of the opinions of parents and students regarding these problems are given below.

V1: *"They were excluded for the first 2 months because they were earthquake victims. Teachers insulted them. We met with the school administration. Only then it got better."*

V4: *"There were problems when you first came here. They kept saying you are a Syrian. After that, it went back to normal. It was like this for the first 2 weeks. Thank God it was short-lived."*

ÖĞ3 (Female, 8th grade): *"At first, the adaptation process with friends was a bit troublesome. Then we got used to each other. I have a close friend at school. I have one here too."*

2.3. Findings Related to Students' Transportation to School

Parents were asked the question "How does your student get to school?" and students were asked the question "Do you have transportation problems going to and from school from the container city?". Participant parents and students stated that there was no problem in transportation and transportation was provided free of charge by shuttle service. Some students (T2, T3) stated that they missed the bus a few times and could not go to school on those days because the school was far away. Some of the parent and student statements are given below.

V2: *"He goes by shuttle service. The state provided a shuttle service. We do not pay any fee."*

Ö2 (Male, 5th grade): *"I go by bus. I have missed it once so far. When I miss it, I can't go to school."*

ÖĞ10 (Female, 6th grade): *"I commute by bus. There is always chaos when getting on the bus."*

2.4. Findings on Students' Relations with School Administration, Teachers and Friends

The answers to the questions "How are your student's relationships with schoolmates and teachers and what are the problems, if any, that your student has in this regard?" and "How are your friendships with your schoolmates?" and "How is your communication with the school administration and teachers?" are given in Table 9.

Table 9 Relations with School Administration, Teachers and Friends

Theme: Relations with school administration, teachers and friends	**Participants**	**Frequency**
Arguments with schoolmates	V1, V3, ÖĞ4, ÖĞ8, ÖĞ9, ÖĞ10	6
Negative attitude towards teachers	V1, V2, ÖĞ2, ÖĞ10	4

When Table 9 is analyzed, it is seen that students mostly have arguments with their friends and some students have negative attitudes towards their teachers. The parent coded V1 stated that his/her student had problems with both schoolmates and teachers. Likewise, the student coded ÖĞ10 stated that he had problems with his schoolmates and teachers. Parent and student views on these problems are given below.

V1: *"At first it was bad, now it is good."*

ÖĞ8 (Male, 6th grade): *"It is good. There are occasional quarrels with friends. Then it gets better."*

ÖĞ9 (Male, 6th grade): *"My relationships with my friends are very good. I had some friends with whom I had a quarrel, not a fight. But I have no friends with whom I have a bad relationship. I have a lot of friends."*

2.5. Findings on the Frequency and Reasons for Parents' Visits to the School

Parents were asked "How often do you visit the school? What is the reason for your visit in general?" The answers to the question are presented in Table 10.

Table 10 Frequency and Reasons for Visiting School

Theme: Frequency and reasons for visiting school	Participants	Frequency
I could never go (A meeting was held in the container city.)	V5, V6, V8	3
I went 1 time.	V1, V4, V7	3
I only went to meetings.	V2, V3	2
I went except for meetings and special occasions.	V9, V10	2

Most of the parents stated that they visited their students' previous school more often, but since the current school was far away, they only attended meetings and went when the teachers called them. Some parents stated that they could not even attend the meetings and did not know how to get to the school. Some parents also stated that some of the meetings were held in the container city. Some of these statements are given below.

V1: *"In my previous school, I used to visit every 15 days. Here I went only once with the neighbor's car. I couldn't attend parent-teacher meetings either, I don't know how to go."*

V5: *"I never visited them. I normally go to all meetings. I pick them up and drop them off every day, but I didn't have the opportunity because they traveled by bus. I couldn't go to any of the meetings. In their previous schools I used to go all the time. Here I can't go because of the distance."*

V7: *"We could not visit. Our teacher held the meeting here because we could not go. In the previous school, I was in contact with the teachers every day because I brought them in and out myself every day. I was learning about what happened, what was going on, which score was dropped."*

2.6. Findings on Complaints Received from the School and Their Reasons

Parents were asked "Do you receive any complaints from the school about your student? If so, what are the reasons?" and the answers in Table 11 were obtained.

Table 11 Complaints from the school and their reasons

Theme: Complaints from school and their reasons	Participants	Frequency
There were no complaints.	V1, V3, V4, V5, V6, V7, V8, V9, V10	9
There was a complaint about his friends.	V2	1

When Table 11 is analyzed, 9 of the parents stated that they did not receive any complaints from the school and 1 of them stated that they received complaints about their friends. Some of the parents' opinions on this issue are given below.

V1. *"His teachers are very happy with him. There were no complaints."*

V2. *"There are complaints. Not complaints about their teachers, but about their friends."*

V3. *"I don't hear any complaints about their teachers, they are very satisfied."*

2.7. Findings Regarding the Problems Experienced by Students Due to Staying in Containers

The answers to the question "What are the problems your student has experienced due to staying in a container?" asked to the parents and the question "What kind of problems do you experience as a student in a container?" asked to the students are presented in Table 12.

Table 12 Problems Due to Staying in Containers

Theme: Problems due to living in a container	Participants	Frequency
Narrow space	V4, V6, V7, V10, ÖĞ3, ÖĞ7, ÖĞ8, ÖĞ9	8
Absence of internet	V1, V5, ÖĞ1, ÖĞ6, ÖĞ10	5
Lack of friends	V1, ÖĞ3	2
Not knowing your circle of friends	V3	1
Not studying/not being able to study, not keeping track of homework	V3, V5, V6, V8, ÖĞ6, ÖĞ7, ÖĞ9	7
Incompatibility with siblings	V10	1
Lack of library environment/lack of space	ÖĞ1, ÖĞ2, ÖĞ9	3
Too much noise	ÖĞ5, ÖĞ7	2

When Table 12 is analyzed; parents and students stated that the biggest problem in the container was the narrow space. They also stated that they could not study due to the narrow space, they had internet problems in the container, there were no friends, they could not find a place in the library, and there was too much noise coming from outside in the container city. Some of the views of parents and students on the problems of living in containers are given below.

V3: *"Here they have a circle of friends we don't know at all. We knew the families of all the students and children they talked to in our neighborhood. We knew who they were. There is such an environment here that we don't know the child, we don't know the family, we don't know the environment. I mean, the upbringing of our children is 100% reversed. Everything has changed a lot here. (...)"*

V5: *"He cannot study, he cannot focus. They connected the internet but there is no signal."*

ÖĞ1 (Female, 8th grade): *"There is a shortage of library. The study environment is not suitable."*

2.8. Findings on Other Problems Experienced by Students Living in Container Cities

Parents and students were asked the question "Are there any other problems you would like to add?" and Table 13 was created based on the answers given.

Table 13 Other Problems Experienced by Students Living in Container Cities

Theme: Other issues	Participants	Frequency
Life's a waste	V1	1
Don't ask for your old school	V2	1
Request for a quiet environment	V5, V7	2

Getting angry very easily, yelling	V5, V8	2
Behavior change	V8	1
Separation of parents	V10	1
Threat to the environment	ÖĞ2	1

When Table 13 is examined, it is seen that other problems experienced by students living in container cities are neglecting life, wanting their old school, wanting a quiet environment, getting angry and yelling, behavioral change, separation of parents and threats from the environment. The opinions of some parents and students are as follows:

T2 (Male, 5th grade): *"There is one child. He swears and hits. When I was riding my bicycle, my foot slipped, I accidentally stepped on his foot to avoid falling. He told his father. His father says don't pass through this neighborhood, I will shoot you. He threatens me."*

V5: *"He wants a quieter environment after the earthquake. He normally does not yell at his siblings. But now he yells at his siblings at the slightest sound."*

V8: *"No. I mean, my child was affected by the earthquake, but he was not studying much before. He changed a lot in terms of behavior. He became very irritable here."*

RESULTS and DISCUSSION

Many people suffer both material and moral losses due to natural disasters. On February 6, 2023, according to the assessment report released one month after the earthquakes, it was determined that a total of 518009 houses in 11 provinces affected by the earthquake were categorized as heavily damaged, destroyed or to be destroyed, and a total of 2273551 people had housing problems (Presidency of Strategy and Budget, 2023). Therefore, people were forced to live in temporary living centers such as tents and containers. The change in the environment in which children live brings with it many negativities, and these negativities also affect children's school life.

In this study, the problems experienced by students living in container cities after the February 6, 2023 earthquakes and the reflections of these problems on the school were examined according to the views of administrators, teachers, parents and students.

According to the interviews conducted within the scope of the study, the main problems experienced by students are behavioral problems, discipline and adaptation problems, psychological and social problems, decreased success rate in their lessons, failure to fulfill duties and responsibilities, lack of textbooks and reference books. They also stated that there were problems such as insufficient financial means, narrow container space, inability to protect the boundaries of privacy, increased absenteeism from school, and lack of interest in lessons and school.

Children who lived in an orderly environment before the earthquake were forced to live in containers after the earthquake, where hundreds of people lived together and their opportunities were limited. It was observed that the students experienced problems such as inability to adapt to the new environment, wanting their old friends and old school, withdrawal, inability to express themselves, behavioral problems such as aggression and tendency to violence, quick temper, loss of motivation and focus problems. Similar results were found in the study of Gülünay et al. (2024).

As a result of the research, students who had difficulty getting used to the container environment also had difficulty getting used to their new schools. These difficulties in adaptation led to behavioral problems in students. After the February 6, 2023 earthquakes, the most basic problem observed in students was behavioral problems. Problems such as overreaction, tendency to aggression and violence, peer bullying, use of slang words, tendency to sexual issues and careless behavior in intimate matters were counted among these behavioral problems. According to Limoncu and Atmaca (2018), school-age children, especially those between the ages of 6 and 11, may experience reluctance to go to school, lack of self-confidence, aggression and angry behaviors at school. Again, Girardi et al. (2020), in their study on children living in temporary shelters in Montreal, concluded that disconnection in peer relationships and anxious behaviors were observed in children.

According to the results of the research, adaptation problems experienced in school include problems such as not being able to adapt to the new school, not wanting to go to school, wanting their own teacher, school and class, arguments with schoolmates, exclusion, negative attitudes towards teachers, and the difficulty of living together with different cultures. Coffman (1998) stated that when children are forced to disconnect from their friends or lose their friends, they develop serious psychological and behavioral problems.

According to the opinions of administrators, teachers and parents, the most important problem in the education and training process is the decline in academic achievement. Teachers have identified that unsuccessful students negatively affect successful students, that there is a decline in reading and writing, that duties and responsibilities are not fulfilled, homework is not done, course materials are not brought, and students come to class unprepared. The factors that play a role in the emergence of this situation are; indifference to the lesson and school, putting school on the back burner, looking at school as temporary, desensitization to attendance, increased absenteeism, concentration problems, lack of motivation, decreased attention levels, and low

readiness. Looking at the literature, Usami et al. (2012) conducted a study on children 8 months after the Japan earthquake and tsunami in 2011 and found that attention deficit and anxiety symptoms emerged in children, which coincides with the findings of this study.

According to teachers' opinions, discipline problems in the classroom have increased significantly. Teachers stated that situations such as interfering with the normal flow of the lesson, ignoring warnings, and theft in the classroom environment emerged. After natural disaster crises such as earthquakes, fires, floods, tsunamis, etc., it is possible to see some problems in classrooms as a result of increased stress and anxiety in students. These problems may be academic problems such as inability to focus on the lesson and loss of motivation (Breen & Meyer, 2021), as well as discipline and compliance problems such as disobeying the rules of the lesson and the class. In addition, undesirable behaviors such as engaging in verbal or physical conflicts with peers, bullying their friends, disrespecting the teacher, speaking without permission from the teacher, standing up and walking around the classroom, and using other people's belongings without permission can also be seen in the classroom environment (Atalay, 2023).

Children are the most vulnerable group affected by natural disasters such as earthquakes (Aydoğdu & Fofana, 2023). On February 6, 2023, two earthquakes left deep scars on children who were psychologically shaken. According to the results of this study, children full of anxiety and worry do not want to enter school buildings due to fear of earthquakes. It was concluded that some students experienced severe emotional problems, had uncertainty in their course and life goals, neglected life, withdrew into themselves, were inadequate in expressing themselves, experienced frequent psychological and emotional changes, were overly sensitive to sound, suffered from insomnia, could not achieve psychological well-being, and had a feeling of mental emptiness. Looking at the related literature, Aykaç et al. (2024), in a study conducted with 16 kindergarten teachers, concluded that students lived with fear, withdrew into themselves and lacked expressive skills. Bozkurt (2023) stated in his interviews with earthquake survivors that earthquake survivors frequently repeated problems such as insomnia, finding life meaningless, feeling of emptiness, and fear.

It was stated by the administrators that many students' parents were separated after the earthquakes. It was stated that these students who come from broken families start life in a defeated way, give up on life, and have no goals or hopes. It is also seen as a problem that there is difficulty in solving the problems of students due to the lack of parental authority, indifference and insensitivity of parents. In the study conducted by Alkan (2018), it was stated that children from families with disrupted integrity suffer from lack of parents and role models, do not receive adequate support, and experience loss of self-confidence. It was revealed that students' school success was also negatively affected as a result of insufficient family-school cooperation and financial difficulties. In the study conducted by Atmaca and Kılıç (2024), it was stated that the stress level in children with broken families was high, school absenteeism increased, school adaptation could not be achieved, and therefore school achievement decreased. In addition, it was also found that they had difficulties in social relations and lacked self-confidence.

Although it was stated that students do not have problems with transportation to school and nutrition, the inability of parents to visit the school due to the distance of the school was seen as a problem by the administrators. Parents, on the other hand, stated that they mostly went to school in obligatory situations such as parent-teacher conferences and any complaints from their students.

According to the findings of the interviews with parents and students, it was revealed that students faced many problems in the container city. Parents stated that the container environment was unfavorable and that they were anxious because they did not know their children's circle of friends. It was revealed that children who were unable to go out of the container due to the lack of friends had conflicts with their siblings. Children relieve their stress and become happy by playing games, spending time with friends and socializing. However, the

limited space in the container environment and the restriction of freedom of movement lead to increased stress and anxiety in children. Therefore, it is common for them to have more frequent disagreements with their families and siblings, with whom they have to spend time in a small space for a long time (Tekin-Babuç and Gökçe, 2024).

Parents experiencing economic difficulties stated that they stayed in the container city out of necessity and that their children could not study because the space in the container was narrow and inadequate. Some of the students stated that they wanted to study in the library, but it was either too noisy or they could not find a place. In addition to these, they complained that they could not buy reference books due to lack of financial means, that they could not even study on their phones because there was no internet signal, and that their achievement decreased for this reason. In the related literature, Erdoğdu (2007) found that students with high socioeconomic status are more successful than students with low socioeconomic status. The reason for this finding is that families are closely involved in the educational life of their children, which is why they achieve this success. However, some parents stated that they could not even follow up their students' homework in the container environment.

The lack of a private space of their own brought along the problem of not being able to protect the boundaries of privacy. It was stated by the administrators that as a result of all family members living in a small area, there was no privacy in private life and there were students who were inclined to intimate matters and sexual tendencies. Looking at the literature, similar results were found in the study conducted by Polat and Sarıçam (2024). Again, Kümbetoğlu et al. (2007) concluded that privacy became a major problem in families living in prefabricated houses and tents after the August 17, 1999 Düzce earthquake.

Recommendations

As a result of the findings obtained in the study, the following recommendations can be taken into consideration:

- It is seen that students have emotional, psychological and behavioral problems. Students can be prevented from being alone in coping with these problems. At school, administrators, teachers and school counselors can support the student in cooperation; they can provide developmental practices or necessary guidance for the student to cope with his/her own problems. Similarly, at home, parents can emphasize their children's problems and contribute to their recovery. Parents can be informed and trained by providing trainings on this subject. Thus, the damages left by disasters can be minimized.
- Trainings can be organized for parents on the reflections of a broken family on children and how to approach them, and how to ensure privacy in temporary housing.
- Gathering all the students living in the container city under the same school roof causes many of the problems caused by the earthquake and living in containers to be transferred to that school. Instead of this practice, the number of students living in the container city can be distributed to schools in a way that does not exceed a certain percentage of the total number of students in the school to which they are sent, and students can receive education with their peers who do not live in containers. Thus, the problems experienced can be minimized.
- In order to prevent the academic failure of students and to eliminate the gap, support and training courses, which are only for 8th graders, can also be opened for 5th, 6th and 7th graders.
- The number and quality of study halls and libraries that exist in container cities but are not considered adequate can be increased. Students can also benefit from public libraries on certain days of the week and at certain times of the week with the transportation service.

- The internet infrastructure problem in the container city can be solved, and students can be supported with technological devices such as tablets and computers that can help them with their homework and lessons. Students' lack of reference books, course equipment and materials can be addressed.
- The security of the container city could be more sensitive and attentive.
- Due to the lack of adequate facilities and environment in the container city, sportive activities and artistic and cultural activities can be organized in the container city, taking into account the developmental stages of children.
- In order to enable parents to visit the school more frequently, special shuttle services etc. can be provided for parents.

In this study, it is aimed to reveal how the problems experienced by earthquake survivor students studying at the secondary school level and living in containers are reflected in their educational life. There is not enough research on this subject. Researchers can contribute to the literature by working at other levels of education or with different samples. The data obtained in this study can be a guide and example for future research.

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Teaching Through Crisis: ELT Educators' Resilience After the February 6, 2023 Earthquakes

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Abstract
The purpose of the present study is to examine the professional resilience of instructors working at Mustafa Kemal University in Hatay, the city most devastated by the February 6, 2023 Earthquakes in Türkiye, which are described as the Disaster of the Century, and contributes to the discussions on teacher resilience in higher education institutions by understanding how instructors continue their professions in such a crisis situation. The study was designed as a qualitative study. The sample of the study was six lecturers and this sample was selected using the convenience sampling method. Semi-structured interviews were used as data collection tools and the data were analysed using thematic analysis method. As a result of the study, instructors experienced psychological, emotional, physical, housing problems and lack of hardware during the post-disaster teaching period, but despite these difficulties, they developed teaching resilience.

Keywords: Teacher resilience, professional resilience, earthquake

INTRODUCTION

The teaching profession is seen as one of the most stressful professions in the world. Throughout their teaching careers, educators have to deal with many challenges and problems, some of which are personal, some institutional, and some societal. Unexpected and devastating events such as natural disasters can seriously disrupt education, affecting both educators and students emotionally and academically. At this point, teacher resilience is an important aspect of education, considering the pressures and obstacles that teachers experience every day (Hascher et al., 2021; López-Angulo et al., 2022). Resilience is the ability of a person to cope with challenges, overcome failures, and cope with changing situations (Kangas-Dick and O'Shaughnessy, 2020). Teacher resilience can be defined as the teacher's capacity to maintain their effectiveness despite the difficulties and challenging professional requirements of the teaching profession (Mansfield et al., 2016). To put it in different way, teacher resilience is the developed or learned ability to adapt and achieve good results despite serious risks to development or adaptation (Mullen et al., 2021). Teachers are the cornerstone of education. It is imperative to retain teachers in the profession, increase the effectiveness of educational institutions, and ensure that teachers are resilient in times of crisis and disaster.

Natural disasters can unfortunately have long-term effects on education in an unpredictable way. Earthquakes in particular can cause devastating damage to educational institutions and serious psychological damage to educators and those receiving education. In this sense, research emphasizes the importance of educators adapting to the new situation and developing appropriate teaching strategies in order for education to continue in some way after disasters. However, research on the experiences of educators in educational institutions, especially higher education institutions, in disaster-affected areas is limited. This study examines the four main components of teacher resilience:

Individual Resilience: Personal management strategies and psychological arrangements made by the instructor.

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Professional Support Systems: The role of support from peers, institutions and educational policies to increase resilience.

Pedagogical Adaptation and Strategies: How the instructor adapt course content and teaching methods to take into account the post-disaster situation.

Emotional and Psychological Resilience: How the instructor copes with trauma and stress disorder resulting from the disaster.

The results of this study will provide useful perspectives for educators living in disaster-affected regions and for those designing strategies to improve education.

Purpose of the Research

This study aims to examine the professional resilience of some instructors working in a higher education institution in Hatay, the city most devastated by the February 6, 2023 Earthquakes in Türkiye, which are described as the Disaster of the Century, and contributes to the discussions on teacher resilience in higher education institutions by understanding how instructors continue their professions in such a crisis situation. In this context, this study seeks to answer the following research questions:

1. How do instructors define their professional resilience in Hatay, the city most affected by the February 6, 2023 Earthquakes in Türkiye?
2. What are the main challenges faced by instructors after the earthquake disaster?
3. What are the strategies of instructors to demonstrate resilience in the face of challenges?
4. What are the main factors that increase and decrease the professional motivation of instructors after the earthquake disaster?

METHOD

This study was prepared as a qualitative case study to investigate the effects of teaching resilience on the instructors working at Mustafa Kemal University in Hatay. Qualitative research provides detailed and in-depth investigation of people's perspectives and experiences in social circumstances (Lim, 2024). This method was suitable for the study so that the researcher could examine the post-disaster experiences of the teachers in detail within a social constructivist framework by expressing the perception and meaning-making process from their own perspectives.

Sample

The study was conducted with 6 instructors, 4 female and 2 males working at School of Foreign Languages, Hatay Mustafa Kemal University in the 2024-2025 academic year. Although the number of participants in the study was small, they were determined based on data saturation principles and practical limitations. Interview invitations were sent to all faculty members working at Hatay Mustafa Kemal University School of Foreign Languages, but only 6 people responded to the invitation. As suggested by Lim (2024), the aim of qualitative studies is to explore in depth the experiences of individuals rather than to make statistical generalizations. The adequacy of the sample size was determined by ensuring data saturation. After six interviews, recurring themes emerged and no new striking views emerged, indicating that conducting more interviews would result in unnecessary information. For this reason, the sample size was deemed sufficient to reveal different perspectives within the context of this study. The sample was selected by the convenience sampling method since the interview invitation was sent to all lecturers working at the School of Foreign Languages, only those who volunteered to participate in the study and responded were interviewed. Convenience sampling is the process of making a research sample easily accessible to the researcher (Ruhi, 2017). Factors such as years of seniority and age were not taken into account as they did not contribute to this study.

Data Collection Tools

As the data collection tool, semi-structured interviews consisting of 8 questions prepared by the researcher were conducted with written responses to understand the participants' teaching resilience in detail. During the preparation of the interview form, the relevant literature was researched in detail, and a preliminary interview was conducted with two participants to find out whether the questions were clear and relevant feedback was received.

Process

Participants were first informed about the purpose, process and confidentiality principles of the research. Then, semi-structured interviews were sent by mail and responses were requested within a certain period of time. The depth of the answers varied, some were quite short and concise, some were lengthy. Further questions were sent in cases where clarification was needed in order to understand the participants' perspectives more clearly and in depth. Pseudonyms were used to ensure participant confidentiality.

Analysis of Data

The obtained data were analysed with thematic analysis method. Thematic analysis means classifying, interpreting and describing themes in data (Braun & Clarke, 2006). The participants' responses were coded in the context of teaching resilience and divided into meaningful categories according to the main and sub-themes. Thematic Analysis was performed manually based on the six-step approach of Braun and Clarke (2006). That is, first the data was thoroughly understood and initial coding was done. Then, themes were created and these themes were reviewed again. The themes were then described and named, and finally the final report was prepared. Considering the sample of this study, manual coding was deemed appropriate in order to reveal salient themes in the data. In order to prevent possible bias and increase reliability, the coded themes were reviewed several times and the coding and theme creation stages were noted step by step and an audit trail was provided. This analysis aims to reveal the difficulties experienced by the instructors who continued to work in Hatay after the February 6, 2023 Earthquakes in Türkiye and the strategies they implemented to cope with these difficulties.

RESULTS

Thematic analysis of data obtained from interviews conducted with six lecturers to understand post-disaster teaching processes revealed the themes of "challenges encountered, professional resilience, coping strategies, teaching motivation, use of artificial intelligence, and post-disaster pedagogical changes". Below, subcategories and codes under each theme are presented with participants' excerpts:

Table 1. Challenges Encountered

Theme	Category	Subcategory	Codes	Frequency (f)	Excerpts
Technical Inadequacies	Lack of technological infrastructure	Internet access problems	Difficulty in accessing the internet	2	"I had to give lectures at the homes of friends who had internet access." (Nina)
		Lack of hardware	Lack of computer and phone	2	"I didn't have my computer or mobile phone with me. I wasn't ready for online lessons." (Tiffany)
Psychological and Emotional Problems	Distraction and stress	Difficulty in focusing	Lack of attention and stress	3	"I experienced distraction and difficulty in focusing." (Oliver)
	Adaptation problem	Environmental adaptation difficulties	Adaptation problem due to personal problems	2	"It was difficult to return to the school term in another city without solving our personal problems." (Pamela)
Housing Problems	Living conditions	Loss of comfort and security concerns	Hygiene, heating and security problems	2	"We had to deal with many problems such as hygiene, heating and security." (Nina)
Physical Difficulties	Health problems	Physical ailments	Shortness of breath and fatigue	3	"Shortness of breath and physical fatigue made it difficult for me to teach." (Tiffany)

Table 1 presents the instructors challenges encountered after the disaster. It seems that the instructors experienced psychological and emotional problems (f=3), physical difficulties (f=3) as well as technical inadequacies (f=4) and housing problems (F=2) during the post-disaster teaching process.

Table 2. Professional Resilience

Theme	Category	Subcategory	Codes	Frequency (f)	Excerpts
Professional Resilience	Alternative work environments	Teaching from different locations	Using alternative venues	1	"Sometimes I even had to teach on the rooftop." (Nina)
	Instructional strategies	Making lessons short and effective	Developing effective teaching strategies	1	"I tried to keep the lesson more briefly and effectively." (Oliver)
	Use of technology	Utilizing online platforms	Effective use of digital tools	1	"Systems that evaluate students' homework and applications that personalize learning methods provided me with significant support." (Thomas)
	Individual resilience	Struggling to stay strong	Continuing despite difficulties	1	"Despite the difficulties I encountered, I made a great effort to carry out the lessons in the most effective way." (Orla)

Table 2 shows the professional resilience of the instructors. In the post-disaster period, they seem to have demonstrated professional resilience by creating alternative working

environments for themselves, effectively using distance education tools, and providing individual flexibility and adaptation with different methods.

Table 3. Coping Strategies

Theme	Category	Subcategory	Codes	Frequency (f)	Excerpts
Coping Strategies	Social support	Solidarity with colleagues	Receiving emotional support	1	"Meeting with friends who had similar problems made me feel like I was not alone." (Nina)
	Interaction with students	Providing motivation	Increasing student participation	1	"I felt compelled to develop new methods to respond to students' needs." (Thomas)
	Personal adaptation	Developing patience and flexibility	Developing patience in the face of challenges	1	"Despite my traumas, I learned to be more patient." (Oliver)

Table 3 reports the instructors coping strategies in the post-disaster period. It is clear that they increased their resilience through emotional support, interaction with students, and personal adaptation strategies.

Table 4. Teaching Motivation

Theme	Category	Subcategory	Codes	Frequency (f)	Excerpts
Teaching Motivation	Academic and personal development	Developing new skills	Self-development, endurance	1	"I tried to stay resilient by finding opportunities to improve myself." (Thomas)
	Professional Responsibility	Supporting students	Providing motivation to students, conscientious obligation	1	"The conscientious obligation I feel towards my students living in the earthquake zone has been the biggest driving force for me." (Nina)
	Perspective on the Future	Adapting to the process	Progress despite trauma, managing the process	1	"Developments in the world do not stop just because we are experiencing trauma." (Oliver)

Table 4 presents the instructors teaching motivation in this process. It seems that the instructors increased their motivation to teach by focusing on academic and personal development, seeing it as their responsibility to provide support to students, and thinking that it was essential to adapt to the post-disaster process.

Table 5. Use of Artificial Intelligence

Theme	Category	Subcategory	Codes	Frequency (f)	Excerpts
Use of Artificial Intelligence	Course content development	Creating learning materials	Enriching course content	1	"I used it to create course content and add visual richness." (Oliver)
	Time management	Speeding up assessment	Using automated homework	1	"Systems that assess students' homework have

Theme	Category	Subcategory	Codes	Frequency (f)	Excerpts
		processes	assessment systems		saved me time." (Thomas)

Table 5 presents the use of artificial intelligence in the post-disaster era. It is clear that the instructors used AI-enabled tools to effectively manage time in developing course content/materials and evaluating student assignments.

Table 6. Post-disaster pedagogical changes

Theme	Category	Subcategory	Codes	Frequency (f)	Excerpts
Post-disaster Pedagogical Changes	Digitalization and online education	The spread of online education	All courses are online	1	"All courses are online." (Nina)
	Flexible teaching models	Individualized education	Providing flexibility for students' different needs	1	"A flexible system has been created." (Oliver)

As the table presents, in the post-disaster teaching process, instructors stated that education was digitalized and continued online, and they needed to adapt a flexible teaching model.

CONCLUSION and DISCUSSION

This study evaluated the difficulties experienced by instructors in the post-disaster period, their professional resilience, teaching motivation, use of artificial intelligence, and pedagogical changes through thematic analysis. As emphasized in the studies of Beltman et al. (2018) and Luthar and Brown (2007), many difficulties and limitations can occur in education and training in post-disaster periods. In this context, it is seen that instructors have developed some strategies. What is done to continue education in such difficult and restrictive situations is related to teacher resilience, which is consistent with the results of the study of Masten (2014) and Luthar (2005). As stated before, the professional resilience of teachers is impacted by the difficulties encountered in education environments. Regarding this, Beltman (2021) emphasizes that both singular and environmental aspects are essential to keep teacher resistance alive. A similar view was stated by Gu and Day (2013) who claimed that the strategies developed by teachers against difficulties not only improve their pedagogical skills, but also increase their motivation and reduce their burnout. In line with this view, Liu and Onwuegbuzie (2012) emphasize the importance of developing coping strategies to ensure effective teaching and to increase teacher resilience.

Analyses of the interviews revealed that instructors experienced hardware insufficiency, psychological and emotional problems, physical difficulties and accommodation problems. Lack of access to the internet and instructors' lack of equipment after the disaster were the main factors that prevented the continuity of education. Similar to these findings, in the study of Sarıgöz (2024), it was stated that teachers and students experienced serious difficulties in teaching and learning after the earthquake disaster, and the reasons for this were the inadequate physical conditions of schools, heating, shelter and health problems. Corresponding to these, the study of Liu and Onwuegbuzie (2012) propose that education has been disrupted in crisis situations due to insufficient and missing materials and needs. In addition, the results revealed that instructors experienced psychological and emotional problems such as concentration and stress disorder in the post-disaster period, which affected the effectiveness of teaching. Similar findings were obtained in the study of Bayar et al. (2024), in which participants experienced emotional exhaustion, psychological behavioural disorders, and economic problems

after the earthquake disaster. Moreover, instructors reported environmental adaptation problems and hygiene, heating and security problems due to housing problems, which was another factor that prevents education from continuing regularly and efficiently in the disaster area. This study is in line with Mullen et al. (2021) study on this point. The ability to be resilient varies depending on environmental conditions and challenges.

According to the results, despite these difficulties and inadequate resources, instructors seem to have found solutions to improve the situation and increased their teaching resilience. To be clearer, instructors seem to have developed professional resilience during this crisis period, increased their teaching motivation and coping strategies, used artificial intelligence-supported teaching tools and made pedagogical changes in their teaching. Teacher motivation is the most common personal resource in the context of resilience and influences a teacher's perseverance, effectiveness, and even ability to advance within the classroom (Mullen et al., 2021). Similar to this result, Sarıgöz (2024) stated in his study that teachers studying for a non-thesis master's degree at Hatay Mustafa Kemal University tried to adapt to the situation in some way after the earthquake disaster and tried to continue their education and training. A related conclusion was reached in Luthans et al.'s (2006) study which revealed that developing strategies to minimize problems during the crisis and teaching resilience is important for the continuity of education and training. Chen (2024) made a literature synthesis on teacher resilience and evaluated teacher resilience as physical resilience, emotional resilience, psychological resilience, social resilience and spiritual resilience. In our study, the terms "physical adaptability, positivity about the future, self-awareness, emotion regulation, personal growth, social support seeking, social acceptance, sense of mission" was emphasized as some of their encompassing ones (Chen, 2024).

Another finding that emerged as a result of thematic analysis shows that instructors have developed professional resilience in the post-disaster period. This is evident in their statements regarding ''creating an alternative environment for teaching, developing teaching strategies, integrating technology into lessons and increasing individual resilience''. In line with the present study, Beltman et al. (2018) suggested that teachers used technology to ensure that education continued without interruption during disasters and thus increased their professional resilience.

In addition to professional resilience, when the use of artificial intelligence in the post-disaster period was considered, it turned out that instructors use artificial intelligence to enrich course content and reduce student assessment time, that is, to manage time more effectively. Weston and Parkin (2010) using artificial intelligence in times of crisis after a disaster can increase the effectiveness of education.

Besides artificial intelligence, in order to increase their resilience, instructors appear to have utilized coping strategies such as social support from their immediate environment, maintaining interaction with students, and developing personal adaptations to the situation. In this context, studies argue that teachers play an important role in ensuring the resilience of students and even society after a disaster (Edmeade & Buzinde, 2021; Pacheco et al., 2022). What's more, instructors' receiving social support from their peers during this process, interacting with students and providing motivation, and trying to be flexible and patient in the face of difficulties in this process seem to have made them more resilient in the education process. This finding is in agreement with Vygotsky's (1978) basic principle of social constructivism, which suggests that ''learning is a social process and occurs within the interaction of individuals''. Consistent with the findings above, Öztürk (2013) emphasizes the importance of providing social support and psychological assistance to teachers and students in order to quickly recover after an earthquake disaster.

Further, it was concluded that instructors focused on academic and personal development during this process and tried to adopt the post-disaster teaching process. Parallel to the findings of this study, Turhaner and Polat (2024) also found that teachers adapted to the post-earthquake process and preferred to focus on the positive aspects of their lives by presenting a

picture of acceptance of the situation. These findings are consistent with the findings obtained in the study of Masten and Barnes (2018) in which it was emphasized that teachers tried to adapt to the changing situation in the post-disaster teaching process and continued their professional development. Similarly, in their studies on resilience and coping strategies, Edwards et al. (2014) suggested that participants adopted strategies such as friends, family and peer support, time management, and personal therapy to become resilient. Along with academic and personal development, it was concluded that instructors provided moral support to students and tried to keep their teaching motivation high during this process. Regarding this, Luthar and Brown (2007) argued that keeping teachers' motivation high in the post-disaster process affects their teaching resilience, which is very important for the continuation of education during this process. Taken together, teacher resilience is encouraged by the teachers' ethical principles and educational goals and is also influenced by their working and living conditions (Gu and Day, 2013).

When the post-disaster pedagogical changes of the instructors were considered, it was concluded that the transition to online education, digitalization in education and the importance of individualized education were remarkable. Woolner et al. (2007) included the expression "resilient school concept" in their study, that is, not only in the physical sense but also in the psychological, social and technical sense, in order to prevent any disruption of education and training during disaster periods. In this context, Salhab and Daher (2023) emphasized online education as technical resilience. Similarly, Gu and Day (2013) mentioned the importance of flexible and individual education models in crisis periods and argued that such situations may lead to pedagogical changes.

To summarise, understanding that teacher resistance is a multifaceted and dynamic concept is important for teachers' professional commitment and teaching effectiveness. This study addressed the teacher resilience of instructors within the themes of ''challenges encountered, professional resilience, coping strategies, teaching motivation, use of artificial intelligence and post-disaster pedagogical changes''. By learning how to rise above challenging experiences, teachers gain self-actualization, enhancement, and a new perspective. Accordingly, it was concluded that the instructors encountered accommodation problems and technical deficiencies in addition to psychological, emotional and physical problems. However, despite these, they adopted to the post-disaster process with pedagogical changes and the use of artificial intelligence in their teaching. In addition, they developed teaching motivation and coping strategies and reinforced their professional resilience. Teaching is a stressful, emotionally tiring and intellectually challenging profession. Long working hours, problematic student behaviour, paperwork, lack of emotional support, and personal problems are some of the factors that affect teacher resilience. Increasing teacher resilience is very important to ensure the quality of education and to increase its effectiveness. Considering these results, in order to prevent interruption of education and training in critical situations such as disasters and to increase teacher resilience, it is important to eliminate infrastructural deficiencies, disseminate flexible and digital teaching models, make necessary pedagogical changes and provide psychosocial support. In order to improve standards and quality in educational institutions, it is necessary to understand not only what increases teacher resilience but also how teacher resilience can be sustained. In other words, more studies should be conducted on the teaching resilience of faculty members working in higher education institutions to increase their resilience and continue to contribute to the literature in this sense.

The convenience sampling method used in this study has some limitations, such as exposure to sampling bias. The voluntary nature of participation may suggest that instructors who responded to interview questions are inherently more resilient or use better coping strategies than those who did not participate, which may lead to a disproportionate presentation of the instructors' more resilient perspective and thus limit the full extent of their resilience experience in the study. To minimize this limitation, further studies can use maximum variation sampling to identify participants and provide a wider range of participants. In addition, a more

comprehensive understanding can be obtained in this context by triangulating the data with other data collection tools such as surveys and questionnaires. Another limitation of this study is that inter-coder reliability is not sufficient because coding was done with only one researcher. However, in order to prevent possible bias and increase reliability, the coded themes were reviewed several times and the coding and theme creation stages were noted step by step and an audit trail was provided. Future studies can be conducted using more than one coder and qualitative analysis programs to ensure rigor in the analysis.

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Yükseköğretimde Öğrenci Başarısını Şekillendirmek: Erken Tahmin ve Müdahale

Shaping Student Success in Higher Education: Early Prediction and Intervention

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Küsmüş, A. (2025). Yükseköğretimde Öğrenci Başarısını Şekillendirmek: Erken Tahmin ve Müdahale *Disiplinlerarası Eğitim Araştırmaları Dergisi*, 9(20), 124-132, DOI: 10.57135/jier.1667945

Öz
Bu çalışmada, yükseköğretim kurumlarındaki öğrenci başarısının tahmin edilmesi amacıyla 9 farklı makine öğrenmesi algoritmasının performansları karşılaştırılmıştır. Araştırma kapsamında, öğrencilerin demografik özellikleri, akademik geçmişleri ve sosyo-ekonomik durumlarını içeren kapsamlı bir veri seti üzerinde XGBoost, Random Forest, Gradient Boosting gibi ensemble yöntemleri ile geleneksel algoritmalar analiz edilmiştir. Veri ön işleme aşamasında eksik veriler median değerler ve kategorik kodlama teknikleriyle işlenmiş, özellik önem analiziyle kritik faktörler belirlenmiştir. Beş katlı çapraz doğrulama sonuçlarına göre XGBoost algoritması %90.1 test doğruluğuyla en yüksek performansı gösterirken, özellik önem analizi "önceki yeterlilik notu" ve "kabul puanı"nın en belirleyici faktörler olduğunu ortaya koymuştur. Bulgular, eğitim kurumlarının erken uyarı sistemleri geliştirirken ensemble yöntemlerinin kullanımının etkililiğini kanıtlamaktadır.
Anahtar Kelimeler: Öğrenci başarı tahmini, makine öğrenmesi, XGBoost, eğitim veri madenciliği, karşılaştırmalı algoritma analizi

Abstract
This study presents a comparative performance evaluation of 9 machine learning algorithms for predicting student academic success in higher education institutions. Using a comprehensive dataset encompassing demographic characteristics, academic history, and socio-economic status, we analyzed ensemble methods (XGBoost, Random Forest, Gradient Boosting) alongside traditional algorithms. During data preprocessing, missing values were handled through median imputation and categorical encoding techniques, while feature importance analysis identified critical predictive factors. Five-fold cross-validation results demonstrated that the XGBoost algorithm achieved superior performance with 90.1% test accuracy, with feature importance analysis revealing "previous qualification grade" and "admission score" as the most determinant factors. The findings substantiate the effectiveness of ensemble methods in developing early warning systems for educational institutions.
Keywords: Student success prediction, machine learning, XGBoost, educational data mining, comparative algorithm analysis.

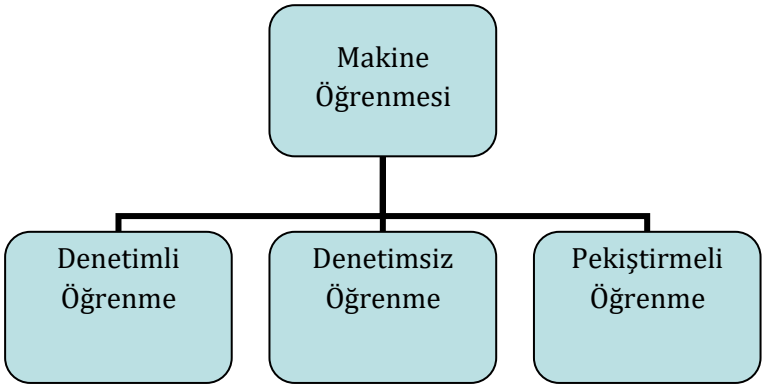
GİRİŞ

Günümüzde yaşanan teknolojik ilerlemeler, birçok alanda köklü değişimlere yol açmakta ve insan yaşamını olumlu yönde etkilemektedir. Bu dönüşümün en önemli yansımalarından biri de eğitim alanında görülmektedir. Eğitimde teknolojinin sunduğu yeniliklerden biri, makine öğrenmesi yöntemlerinin ölçme, değerlendirme ve öngörü süreçlerinde kullanılmasıdır. Öğrencilerin akademik performanslarını analiz etmek, eğitim süreçlerini optimize etmek ve geleceğe yönelik tahminlerde bulunmak, eğitimde kaliteyi artırmak açısından büyük bir önem taşımaktadır. Geleneksel ölçme değerlendirme sistemleri öğrencilerin performans ve başarısını tam ölçememekle birlikte geleceğe dair öngörülerde de bulunamamaktadır.

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Araştırma Makalesi

Makine öğrenme algoritmaları eğitim verilerinin değerlendirme aşamalarında sıklıkla kullanılmaya başlanmıştır. Veri içerisinde anlamlı bilgileri çıkarmak ve o anlamlı verilerinden geleceğe dair öngörülerde bulunmak manuel olarak da yapılabilen işlemler olsa da verilerin artması ve çeşitliliğin fazlalaşması manuel olarak verilerin değerlendirilmesini mümkün kılmamaktadır. Ayrıca hataların yaşanması da kaçınılmazdır. Makine öğrenme algoritmaları milyonlarca veriyi hızlı bir şekilde analiz ederek değerlendirme ve öngörüler de bulunabilmektedir (Ülker ve İnik, 2017).



Şekil 1 Makine Öğrenmesi Yöntemleri

Makine öğrenmesi (ML), verilerden anlamlı bilgiler çıkararak tahmin veya kararlar alabilen algoritmaların geliştirilmesini sağlayan bir yapay zekâ alt dalıdır(Mitchell & Mitchell, 1997) Makine öğrenmesi yöntemleri, Şekil 1'de görüldüğü gibi öğrenme süreçlerine bağlı olarak denetimli öğrenme (supervised learning), denetimsiz öğrenme (unsupervised learning) ve pekiştirmeli öğrenme (reinforcement learning) olmak üzere üç temel kategoriye ayrılmaktadır (Goodfellow, Bengio & Courville, 2016).

Denetimli öğrenme, giriş verileri ile bu verilere karşılık gelen etiketlerin bulunduğu veri kümeleri üzerinde eğitilen bir makine öğrenmesi yöntemidir(Bishop & Nasrabadi, 2006). Model, giriş verileri ile etiketler arasındaki ilişkileri öğrenerek yeni veriler üzerinde tahminlerde bulunabilir. Denetimli öğrenme yöntemleri genellikle sınıflandırma (classification) ve regresyon (regression) problemlerinde kullanılır.

Denetimsiz öğrenme, etiketlenmemiş veriler üzerinde çalışan ve veri setindeki iç yapıyı keşfetmeye yönelik bir yöntemdir. Bu yöntemde model, verilerdeki benzerlikleri ve ilişkileri analiz ederek gruplamalar veya boyut indirgeme işlemleri gerçekleştirir. Denetimsiz öğrenme, özellikle kümeleme (clustering) ve boyut indirgeme (dimensionality reduction) gibi görevlerde kullanılır.

Pekiştirmeli öğrenme, bir ajanın (öğrenen sistemin) bir ortamda belirli bir ödül sistemine dayanarak deneyimlerden öğrenmesini sağlayan bir öğrenme yöntemidir (Sutton & Barto, 1998). Bu yöntem, genellikle bir dizi eylem gerçekleştirerek uzun vadeli ödülü en üst düzeye çıkarmayı amaçlayan problemlerde kullanılır.

Literatürde Makine öğrenme yöntemleri kullanılarak eğitim alanında birçok çalışma incelenmiştir. Tosunoğlu vd. yapmış oldukları çalışmada eğitim bilimleri alanında makine öğrenmesi kullanılan makalelerdeki eğilimleri incelenmişlerdir. Web of Science veri tabanında 2015-2020 yılları arasında yayımlanan 201 makale içerik analizi yöntemiyle değerlendirilmiştir. Sonuçlara göre, çalışmaların %42,9'u deneysel veya uygulamalı araştırmalardan oluşmaktadır. En sık kullanılan makine öğrenmesi yöntemleri arasında %22,5 ile karar ağaçları, %17,8 ile destek vektör makineleri ve %14,2 ile Naïve Bayes yer almaktadır. Örneklemlerin %35,3'ünü lisans öğrencileri oluştururken, en yaygın örneklem büyüklüğü %29,7 ile 101-1000 kişi aralığındadır. Verilerin %34'ü veri tabanları ve log kayıtlarından elde edilmiştir. Çalışma, eğitimde makine öğrenmesi uygulamalarının ulusal literatüre katkı

sağladığını ve gelecekteki araştırmalara yol gösterebileceğini ortaya koymaktadır(Tosunoğlu, Yılmaz, Özeren, & Sağlam, 2021).

Dünder ve Dünder (2024) gerçekleştirdikleri çalışmada, makine öğrenmesi algoritmalarının öğrenci başarısını tahmin etmedeki performansları karşılaştırılmıştır. Eğitim alanındaki veri setlerinin kategorik yapısı ve sınıf dengesizliği sorununa dikkat çekilerek, bu durumu gidermek için SmoteNC tekniği kullanılmıştır. Beş farklı makine öğrenmesi algoritması ile yapılan analizler sonucunda, sınıf dengesizliği giderildiğinde makine öğrenmesi yöntemlerinin sınırlı gözlem içeren verilerde de başarılı şekilde uygulanabileceği belirlenmiştirErsozlu vd. (2024) yapmış oldukları çalışmada, makine öğrenmesi yöntemlerinin eğitim araştırmalarına entegrasyonunun öğretim, öğrenme ve değerlendirme süreçlerine etkisini incelemiştir. Sistematik bir literatür taraması (SLR) yöntemiyle, eğitim araştırmalarında yüksek etkiye sahip iki büyük veri tabanından seçilen 77 çalışma değerlendirilmiştir. Analiz sonuçlarına göre, çalışmaların %88'inde denetimli öğrenme yöntemleri kullanılmış olup, en yaygın teknikler arasında karar ağaçları, destek vektör makineleri, rastgele ormanlar ve lojistik regresyon yer almaktadır. Yarı denetimli öğrenme yöntemleri daha az kullanılmış olsa da, öğrenci performans tahmininde başarılı sonuçlar elde edilmiştir. Çalışma, makine öğrenmesi yöntemlerinin eğitim araştırmalarındaki rolüne dair önemli bulgular sunarak, araştırmacılar, istatistikçiler ve eğitim politikacıları için öneriler geliştirmiştir.

Wang vd. (2024) yapmış oldukları çalışmada, eğitimde yapay zekâ (AIED) alanındaki literatürü kapsamlı bir şekilde inceleyerek, yapay zekâ uygulamalarının temel kategorilerini, araştırma konularını ve yöntemsel yaklaşımları analiz etmiştir. 2.223 araştırma makalesinin bibliyometrik analizi ve 125 seçili makalenin içerik analizi sonucunda, AIED çalışmalarının uyarlanabilir öğrenme, kişiselleştirilmiş öğretim, akıllı değerlendirme, öğrenci profilleme ve tahminleme gibi geniş bir uygulama yelpazesine sahip olduğu belirlenmiştir. Araştırmalar, eğitim sistemlerinin teknik tasarımının yanı sıra, AIED'nin benimsenmesi, etkileri ve karşılaşılan zorlukları da ele almaktadır. Çalışma ayrıca AIED alanında kullanılan teorik çerçeveleri ve disiplinler arası yayın eğilimlerini inceleyerek, gelecekteki araştırmalar için öneriler sunmaktadır.

Onyema vd. (2022) yapmış oldukları çalışmada, makine öğrenmesi uygulamalarının akademik öngörülerdeki potansiyelini ve karşılaşılan zorlukları incelemiştir. K-NN, rastgele orman, bagging, yapay sinir ağları (ANN) ve Bayesçi sinir ağları (BNN) gibi algoritmaların öğrenci başarısını ve öğrenme tarzlarını tahmin etmede etkili olduğu vurgulanmıştır. Geleneksel tahmin yöntemlerindeki eksikliklerin, yapay zekâ tabanlı makine öğrenmesi algoritmaları ile büyük ölçüde giderildiği ve eğitim paydaşlarının karar alma süreçlerini desteklediği belirtilmiştir. Bununla birlikte, veri toplama zorlukları, hata eğilimleri ve zaman maliyeti gibi sınırlamaların, akademik tahmin süreçlerinde makine öğrenmesi uygulamalarını etkileyebileceği ifade edilmiştir. Çalışma, makine öğrenmesinin akademik tahminleme alanında önemli bir potansiyele sahip olduğunu ve eğitimde daha bilinçli kararlar alınmasını sağlayabileceğini ortaya koymaktadır.

Bu çalışmada üniversite öğrencilerinin almış oldukları derslerdeki performanslarından ziyade eğitim hayatlarına devam edip etmeyecekleri konusunda bir tahmin modeli oluşturmayı amaçlamaktadır. Oluşturulan tahmin modeli ile lisans eğitimini tamamlama konusunda potansiyel probleme sahip öğrenciler erken tahmin edilerek okula devam etmesi için çeşitli sosyal ve psikolojik destekler verilerek eğitim hayatına devam ettirilmesi planlanmaktadır. Yükseköğretimde eğitimde sürekliliğin sağlanması ve öğrencilerin lisans eğitimi olarak daha başarılı bireyler olması için erken tahmin ve müdehale oldukça önemlidir. Çalışmada kullanılan makine öğrenme algoritmaları karşılaştırılarak en çok başarı elde edilmesi planlanan algoritmalar üzerinde çalışılmış ve bu algoritmaların başarı değerlerini arttırmak için veri seti analiz edilerek karşılaştırılmıştır. Çalışmanın sadece belirli bir bölge yapılması

çalışmaya bir sınırlılık getirmektedir. Gelecekte farklı bölgelerden elde edilen veri setleri kullanılarak modelin evrensel geçerliliği arttırılabilinir.

YÖNTEM

Bu bölümde öğrencilerin lisans eğitimine devam edip etmeyecekleri ile ilgili tahminleri yapabilmek için kullanılacak veri seti, makine öğrenme algoritmaları ve analizleri anlatılmıştır.

Veri Seti

Bu çalışmada, makine öğrenmesi alanında referans kaynak olarak kabul edilen UCI Makine Öğrenmesi Deposu'ndan (University of California Irvine Machine Learning Repository) temin edilen veri seti kullanılmıştır. UCI veri setleri, akademik çalışmalarda yaygın olarak kullanılmakta olup, geçerliliği uluslararası düzeyde kabul görmektedir. Çalışmada kullanılan veri seti Portekiz'in Portalegre Politeknik Enstitüsü'ndeki lisans programlarına 2018-2019 yıllarında kaydolan öğrencilerin kurumsal verilerinden (çeşitli veritabanlarından derlenmiştir) elde edilerek oluşturulmuştur. Veri setindeki öğrenciler agronomi, tasarım, eğitim, hemşirelik, gazetecilik, yönetim, sosyal hizmet ve teknoloji alanlarındaki lisans programlarına kayıtlı öğrencileri kapsamaktadır(Martins, Tolledo, Machado, Baptista, & Realinho, 2021).

Veri setin 4424 adet öğrenciye ait 37 öznitelikten oluşmaktadır. Öğrencilere ait öznitelikler Tablo 1'de detaylı olarak gösterilen Demografik Değişkenler, Sosyo-Ekonomik Değişkenler, Akademik Değişkenler, Başarı Durumu Dağılımı kategorilerinden oluşmaktadır. Veri setinde bulunan eksik veriler için median değerle doldurma yöntemi tercih edilmiştir. Bu yöntem, aşırı uç değerlerin etkisini azaltmak ve basitliği nedeniyle öncelikli olarak tercih edilmiştir.

Tablo 1 Öznitelik Kategorileri

Kategori	Öznitelikler
Demografik Değişkenler	Medeni Durum, Cinsiyet, Kayıt Yaşı, Uyruk, Özel Eğitim Gereksinimi
Sosyo-Ekonomik Değişkenler	Başvuru Modu, Başvuru Sırası, Program, Gündüz/Gece Eğitimi, Önceki Eğitim, Önceki Eğitim Notu, Kabul Notu, Yerleşim Durumu, 1. Dönem Ders Kredileri, 1. Dönem Kayıtlı Dersler, 1. Dönem Değerlendirilen Dersler, 1. Dönem Başarılan Dersler, 1. Dönem Not Ortalaması, 1. Dönem Değerlendirilmemiş Dersler, 2. Dönem Ders Kredileri, 2. Dönem Kayıtlı Dersler, 2. Dönem Değerlendirilen Dersler, 2. Dönem Başarılan Dersler, 2. Dönem Not Ortalaması, 2. Dönem Değerlendirilmemiş Dersler
Akademik Değişkenler	Başvuru Modu, Başvuru Sırası, Program, Gündüz/Gece Eğitimi, Önceki Eğitim, Önceki Eğitim Notu, Kabul Notu, Yerleşim Durumu, 1. Dönem Ders Kredileri, 1. Dönem Kayıtlı Dersler, 1. Dönem Değerlendirilen Dersler, 1. Dönem Başarılan Dersler, 1. Dönem Not Ortalaması, 1. Dönem Değerlendirilmemiş Dersler, 2. Dönem Ders Kredileri, 2. Dönem Kayıtlı Dersler, 2. Dönem Değerlendirilen Dersler, 2. Dönem Başarılan Dersler, 2. Dönem Not Ortalaması, 2. Dönem Değerlendirilmemiş Dersler
Başarı Durumu Dağılımı	Öğrenciler üç kategoriye ayrılmıştır: Mezuniyet, Göreceli Başarı ve Başarısızlık.

Kullanılan Makine Öğrenme Algoritmaları

Bu çalışmada, öğrenci başarısını tahmin etmek amacıyla 9 farklı makine öğrenmesi algoritması uygulanmıştır. Algoritmaların seçiminde sınıflandırma problemine uygunluk, literatürdeki yaygın kullanım ve karşılaştırmalı analiz yapma imkânı göz önünde bulundurulmuştur. Kullanılan Makine Öğrenme Algoritmaları:

Lojistik Regresyon (Logistic Regression)

Lojistik regresyon, sınıflandırma problemlerinde yaygın olarak kullanılan istatistiksel bir yöntemdir(Hosmer, Lemeshow, & Sturdivant, 2000) Model, logit fonksiyonu kullanarak

bağımsız değişkenlerin sınıflandırma olasılıklarını tahmin eder. Denklem 1'de gösterilen β parametreleri model katsayılarını, X ise bağımsız değişkenleri temsil etmektedir.

$$P(y=1|x) = 1 / (1 + e^{-(\beta_0+\beta_1x_1+...+\beta_nx_n)}) \quad (1)$$

Karar Ağaçları (Decision Trees)

Karar ağaçları, veri kümesini özellik değerlerine göre ardışık bölerek sınıflandırma kuralları oluşturur*(Quinlan, 1986)*. Eşitlik 2'de görüldüğü üzere Entropi veya Gini indeksi kullanılarak en iyi bölünmeler belirlenir.

$$Gini(t) = 1 - \Sigma[p(i|t)]^2 \quad (2)$$

Rastgele Orman (Random Forest)

Breiman (2001) tarafından önerilen bu ensemble yöntemi, birden fazla karar ağacının kombinasyonuna dayanır. Her ağaç, bootstrap örneklemi üzerinde eğitilir ve sonuçlar oylama yöntemiyle birleştirilir.

Destek Vektör Makineleri (SVM)

Vapnik (1995) tarafından geliştirilen SVM, optimal ayırıcı hiperdüzlemi bulmaya dayanır. Eşitlik 3'te görüldüğü gibi doğrusal olmayan ayrımları modellemek için kernel fonksiyonları kullanılır.

$$f(x) = sign(\Sigma\alpha_i y_i K(x_i,x) + b) \quad (3)$$

K-En Yakın Komşu (KNN)

Cover ve Hart (1967) tarafından önerilen bu yöntem, sınıflandırma işlemini en yakın komşunun sınıf etiketlerine göre belirleyen sezgisel bir yaklaşımdır.

Naive Bayes

Bayes teoremine dayanan bu yöntem, bağımsız değişkenlerin koşulsuz bağımsız olduğu varsayımıyla çalışır(Murphy, 2012).

$$P(y|x_1,...,x_n) \propto P(y)\Pi P(x_i|y) \quad (4)$$

Gradient Boosting

Friedman (2001) tarafından geliştirilen bu yöntem, zayıf öğrenicilerin hata paylarını azaltacak şekilde ardışık olarak eğitilmesine dayanır.

XGBoost

Chen ve Guestrin (2016) tarafından geliştirilen XGBoost, regularizasyon mekanizmaları ile güçlendirilmiş ve optimize edilmiş bir gradient boosting algoritmasıdır.

Yapay Sinir Ağları (MLP)

Çok katmanlı perceptron (MLP), yapay sinir ağlarının temel bir formudur (Bishop & Nasrabadi, 2006). Katmanlar arasında aktivasyon fonksiyonları kullanarak doğrusal olmayan dönüşümler gerçekleştirir.

Toplamda 9 farklı makine öğrenmesi algoritması uygulanmış ve performansları karşılaştırılmıştır. Hiperparametre ayarlamaları için grid search yöntemi kullanılmış ve bu sayede her algoritma için optimum parametre değerleri belirlenmiştir. Çalışma boyunca beş katlı çapraz doğrulama yöntemiyle modellerin genellenebilirlik performansları test edilmiştir.

Model Başarım Ölçütleri

Sınıflandırma modellerinin performansını değerlendirmek için çeşitli metrikler kullanılır. Bu metrikler, modelin ne kadar doğru tahmin yaptığını ve ne kadar güvenilir olduğunu gösterir. Modelin başarımını görselleştirmek Tablo 2'de gösterilen karışıklık matrisi kullanılır. Bu matris, gerçek değerlerle modelin tahminlerini karşılaştırır.

Tablo 2 Karışıklık Matrisi

Tahmin / Gerçek	**Pozitif (1)**	**Negatif (0)**
Pozitif (1)	Doğru Pozitif (DP)	Yanlış Pozitif (YP)
Negatif (0)	Yanlış Negatif (YN)	Doğru Negatif (DN)

DP modelin pozitif olarak tahmin ettiği ve gerçekte de pozitif olan değerler. YP modelin pozitif olarak tahmin ettiği ancak gerçekte negatif olan değerler. YN modelin negatif olarak tahmin ettiği ancak gerçekte pozitif olan değerler. DN modelin negatif olarak tahmin ettiği ve gerçekte de negatif olan değerler.

Doğruluk-Hata Oranı (Accuracy-Error Rate)

Doğruluk, doğru tahminlerin toplam tahminlere oranıdır. Hata oranı ise yanlış tahminlerin toplam tahminlere oranıdır.

$$\text{Doğruluk} = (DP + DN) / (DP + YP + YN + DN) \quad (5)$$

$$\text{Hata Oranı} = (YP + YN) / (DP + YP + YN + DN) \quad (6)$$

Kesinlik (Precision)

Kesinlik, modelin pozitif olarak tahmin ettiği değerlerin ne kadarının gerçekte pozitif olduğunu gösterir.

$$\text{Kesinlik} = DP / (DP + YP) \quad (7)$$

Duyarlılık (Recall/Sensitivity)

Duyarlılık, gerçekte pozitif olan değerlerin ne kadarının model tarafından pozitif olarak tahmin edildiğini gösterir.

$$\text{Duyarlılık} = DP / (DP + YN) \quad (8)$$

F1-Skoru (F-Measure)

F1-skoru, kesinlik ve duyarlılığın harmonik ortalamasıdır. Hem kesinlik hem de duyarlılığı dengeli bir şekilde değerlendirir.

$$\text{F1-Skoru} = 2 * (\text{Kesinlik} * \text{Duyarlılık}) / (\text{Kesinlik} + \text{Duyarlılık}) \quad (9)$$

ROC Eğrisi (Receiver Operating Characteristic Curve)

ROC eğrisi, modelin farklı eşik değerlerinde doğru pozitif oranını (DP) yanlış pozitif oranına (YP) karşı gösterir. Eğrinin altında kalan alan (AUC), modelin genel başarımını gösterir. AUC değeri 1'e ne kadar yakınsa model o kadar iyidir. Doğru pozitif oranı (DP) duyarlılık ile aynıdır. Yanlış pozitif oranı YP / (YP + DN) formülü ile hesaplanır.

BULGULAR

Bu çalışmada, lisans öğrencilerinin eğitim hayatlarına devam edip etmeyeceklerini tahmin etmek amacıyla 9 farklı makine öğrenmesi algoritması kullanılmış ve performansları karşılaştırılmıştır. Veri seti, öğrencilerin demografik bilgileri, akademik geçmişleri ve sosyo-

ekonomik durumları gibi çeşitli özellikleri içermektedir. Hedef değişken, öğrencilerin "Mezun" (1) veya "Mezun Olamayan/Devam Eden" (0) şeklinde sınıflandırılmasıdır. Tablo 3'de gösterilen sonuçlarda, 9 farklı makine öğrenmesi algoritmasının 5 katlı çapraz doğrulama (cross-validation) ve test seti üzerindeki performansını göstermektedir:

Tablo 3 Makine Öğrenmesi Algoritmalarının Performans Metrikleri

Model	**Çapraz Doğrulama Ortalama Doğruluk**	**Çapraz Doğrulama Standart Sapma**	**Test Doğruluk Oranı**
XGBoost	0.892	0.012	0.901
Gradient Boosting	0.885	0.011	0.896
Random Forest	0.879	0.013	0.889
LightGBM	0.874	0.014	0.883
Lojistik Regresyon	0.862	0.015	0.871
Yapay Sinir Ağı	0.857	0.016	0.866
Destek Vektör Makineleri	0.851	0.017	0.859
K-En Yakın Komşu	0.842	0.018	0.848
Karar Ağacı	0.831	0.019	0.839
Gauss Naive Bayes	0.813	0.021	0.824

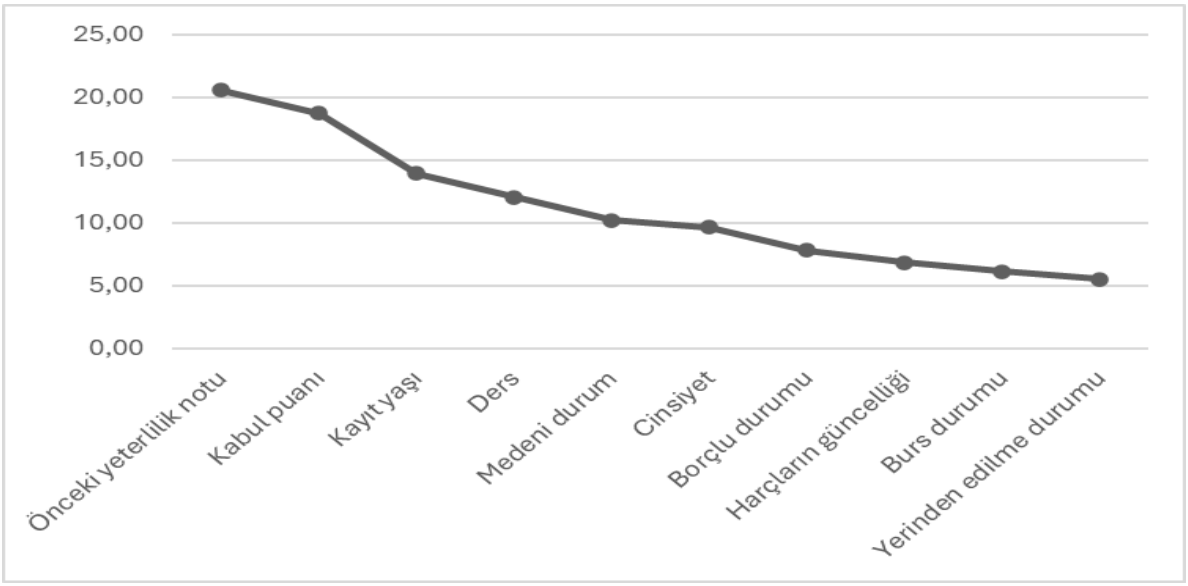
Veri setine uygulanan makine öğrenme algoritmalarından en başarılı sonucu veren XGBoost algoritmasının sınıflandırma modeli Tablo 4'te gösterilmektedir. Tabloda Kesinlik (Precision) modelin pozitif olarak işaretlediği örneklerin gerçekten ne kadarının pozitif olduğunu göstermektedir. Duyarlılık (Recall) gerçek pozitiflerin ne kadarının doğru tahmin edildiğini göstermektedir. F1-Skoru ise kesinlik ve duyarlılığın harmonik ortalamasıdır.

Tablo 4 XGBoost Algoritması Sınıflandırma Modeli

	Kesinlik	Duyarlılık	F1-Skoru
0	0.91	0.89	0.90
1	0.89	0.91	0.90

Bu sonuçlara göre, model hem mezun olan hem de olamayan öğrencileri yüksek doğrulukla tahmin edebilmektedir. Modelin kesinlik(precision) değerleri her iki sınıf için de 0.90 civarında çıkmıştır, bu da modelin yanlış pozitif ve yanlış negatif oranlarının dengeli olduğunu göstermektedir.

Şekil 2'de en önemli 10 öznitelik ve önem oranları verilmiştir. Bu sonuçlara göre, öğrencinin önceki akademik başarısını gösteren " Önceki yeterlilik notu" ve " Kabul puanı " en önemli iki özellik olarak öne çıkmaktadır. Bu bulgu, öğrencinin daha önceki akademik performansının, üniversite başarısını tahmin etmede kritik rol oynadığını göstermektedir. Diğer önemli özellikler arasında yaş, cinsiyet ve sosyo-ekonomik durumla ilgili faktörler yer almaktadır.



Şekil 2 En Önemli 10 Öznitelik ve Önem Dereceleri

XGBoost, Gradient Boosting ve Random Forest gibi ensemble yöntemlerinin diğer algoritmalara göre daha iyi performans göstermesi, bu yöntemlerin karmaşık veri yapılarını modellemedeki yetenekleriyle açıklanabilir. Özellikle XGBoost'un regularizasyon teknikleri ve optimizasyon algoritmaları sayesinde aşırı öğrenmeyi (overfitting) engelleyerek genellenebilir modeller oluşturduğu görülmüştür. Bu durum, XGBoost'un regularizasyon teknikleri (L1, L2) ve aşırı öğrenmeye karşı direnci sayesinde modelin genellenebilirliğini artırmasıyla açıklanmaktadır. Modelin açıklanabilirliğini sağlamak için öznitelik önemi analiz edilmiştir. Lineer bir model olan logistik regresyonun %87.1'lik test doğruluğuyla oldukça iyi performans göstermesi, veri setindeki bazı özellikler ile hedef değişken arasında lineer ilişkiler bulunduğuna işaret etmektedir. Çok katmanlı algılayıcı (MLP) modelinin %86.6'lık test doğruluğu, daha karmaşık yapıdaki modellerin bu veri setinde mutlaka daha iyi performans göstermeyebileceğini ortaya koymaktadır. Gaussian Naive Bayes'in %82.4'lük test doğruluğuyla en düşük performansı göstermesi, bu algoritmanın özellikler arasındaki koşullu bağımsızlık varsayımının veri seti için tam olarak geçerli olmayabileceğini düşündürmektedir.

SONUÇLAR ve TARTIŞMA

Bu kapsamlı analiz, öğrenci başarısını tahmin etmede ensemble yöntemlerinin, özellikle de XGBoost'un diğer geleneksel makine öğrenmesi algoritmalarına kıyasla daha üstün performans sergilediğini ortaya koymuştur. Modelin en önemli özellikler olarak belirlediği akademik geçmiş ve giriş notları, öğrenci başarısındaki kritik faktörler olarak öne çıkmaktadır. Elde edilen bulgular, eğitim kurumlarının erken uyarı sistemleri geliştirirken XGBoost veya benzeri ensemble yöntemlerini kullanmalarının ve özellikle öğrencilerin önceki akademik performanslarını dikkate alan müdahale stratejileri geliştirmelerinin faydalı olabileceğini göstermektedir. Bu çalışmanın bir sonraki aşamasında, hiperparametre optimizasyonu teknikleri kullanılarak modellerin performanslarının daha da iyileştirilmesi ve alternatif özellik mühendisliği yöntemlerinin araştırılması planlanmaktadır. Ayrıca, model interpretability teknikleri kullanılarak modellerin karar verme süreçlerinin daha detaylı analiz edilmesi de önerilmektedir.

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Shaping Student Success in Higher Education: Early Prediction and Intervention

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Abstract
This study presents a comparative performance evaluation of 9 machine learning algorithms for predicting student academic success in higher education institutions. Using a comprehensive dataset encompassing demographic characteristics, academic history, and socio-economic status, we analyzed ensemble methods (XGBoost, Random Forest, Gradient Boosting) alongside traditional algorithms. During data preprocessing, missing values were handled through median imputation and categorical encoding techniques, while feature importance analysis identified critical predictive factors. Five-fold cross-validation results demonstrated that the XGBoost algorithm achieved superior performance with 90.1% test accuracy, with feature importance analysis revealing "previous qualification grade" and "admission score" as the most determinant factors. The findings substantiate the effectiveness of ensemble methods in developing early warning systems for educational institutions.

Keywords: Student success prediction, machine learning, XGBoost, educational data mining, comparative algorithm analysis.

INTRODUCTION

Today's technological advances lead to radical changes in many fields and positively affect human life. One of the most important reflections of this transformation is seen in the field of education. One of the innovations offered by technology in education is the use of machine learning methods in measurement, evaluation and prediction processes. Analyzing students' academic performance, optimizing educational processes and making predictions for the future are of great importance in terms of improving the quality of education. Traditional assessment and evaluation systems cannot fully measure the performance and success of students, nor can they make predictions about the future.

Machine learning algorithms are frequently used in the evaluation of educational data. Although extracting meaningful information from the data and making predictions about the future from that meaningful data are processes that can be done manually, the increase in data and the increase in diversity make it impossible to evaluate the data manually. Errors are also inevitable. Machine learning algorithms can quickly analyze millions of data and make evaluations and predictions (Ülker & İnik, 2017).

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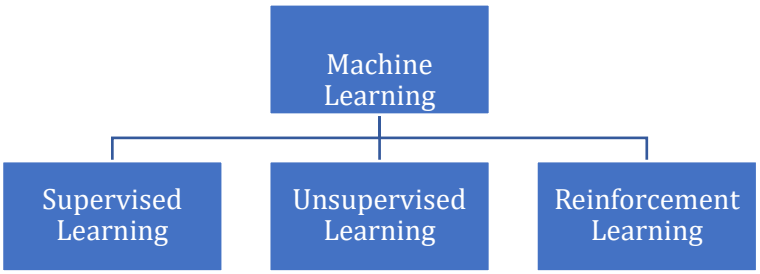


Figure 1 Machine Learning Methods

Machine learning (ML) is a sub-branch of artificial intelligence that enables the development of algorithms that can make predictions or decisions by extracting meaningful information from data (Mitchell & Mitchell, 1997). Machine learning methods are divided into three main categories: supervised learning, unsupervised learning and reinforcement learning, depending on the learning processes as shown in Figure 1 (Goodfellow, Bengio & Courville, 2016).

Supervised learning is a machine learning method that is trained on datasets with input data and corresponding labels (Bishop & Nasrabadi, 2006). The model can make predictions on new data by learning the relationships between input data and labels. Supervised learning methods are generally used in classification and regression problems.

Unsupervised learning is a method that works on unlabeled data and explores the internal structure of the data set. In this method, the model performs groupings or dimensionality reduction by analyzing similarities and relationships in the data. Unsupervised learning is especially used in tasks such as clustering and dimensionality reduction.

Reinforcement learning is a learning method that enables an agent (learning system) to learn from experience in an environment based on a specific reward system (Sutton & Barto, 1998). This method is often used in problems that aim to maximize the long-term reward by performing a series of actions.

In the literature, many studies have been examined in the field of education using machine learning methods. In their study, Tosunoğlu et al. examined the trends in articles using machine learning in the field of educational sciences. A total of 201 articles published in the Web of Science database between 2015 and 2020 were evaluated by content analysis method. According to the results, 42.9% of the studies consisted of experimental or applied research. The most frequently used machine learning methods were decision trees with 22.5%, support vector machines with 17.8% and Naïve Bayes with 14.2%. While 35.3% of the samples were undergraduate students, the most common sample size was between 101-1000 people with 29.7%. 34% of the data was obtained from databases and log records. The study reveals that machine learning applications in education contribute to the national literature and can guide future research (Tosunoğlu, Yılmaz, Özeren, & Sağlam, 2021).

Dünder and Dünder (2024) compared the performance of machine learning algorithms in predicting student achievement. The categorical nature of the data sets in the training domain and the problem of class imbalance were pointed out and the SmoteNC technique was used to overcome this problem. As a result of the analyses conducted with five different machine learning algorithms, it was determined that machine learning methods can be successfully applied to data with limited observations when class imbalance is eliminated. In their study, Ersozlu et al. (2024) examined the effects of the integration of machine learning methods into educational research on teaching, learning and assessment processes. Through a systematic literature review (SLR), 77 studies selected from two large databases with high impact in educational research were evaluated. According to the results of the analysis, 88% of the studies used supervised learning methods, with the most common techniques being decision trees,

support vector machines, random forests and logistic regression. Although semi-supervised learning methods were used less frequently, successful results were obtained in student performance prediction. The study provides important findings on the role of machine learning methods in educational research and develops recommendations for researchers, statisticians and education policy makers.

Wang et al. (2024) conducted a comprehensive review of the literature in the field of artificial intelligence in education (AIED), analyzing the main categories of AI applications, research topics, and methodological approaches. A bibliometric analysis of 2,223 research articles and content analysis of 125 selected articles revealed that AIED studies have a wide range of applications such as adaptive learning, personalized instruction, intelligent assessment, student profiling and prediction. The studies address the technical design of educational systems as well as the adoption, impacts and challenges of AIED. The study also examines the theoretical frameworks and interdisciplinary publication trends used in the field of AIED and provides recommendations for future research.

(2022) examined the potential and challenges of machine learning applications in academic prediction. They emphasized that algorithms such as K-NN, random forest, bagging, artificial neural networks (ANN) and Bayesian neural networks (BNN) are effective in predicting student achievement and learning styles. It is stated that the shortcomings in traditional prediction methods are largely overcome by artificial intelligence-based machine learning algorithms and support the decision-making processes of educational stakeholders. However, limitations such as data collection difficulties, error tendencies and time cost may affect the application of machine learning in academic prediction processes. The study reveals that machine learning has significant potential in the field of academic prediction and can enable more informed decisions in education.

This study aims to create a prediction model for whether university students will continue their education rather than their performance in the courses they have taken. With the prediction model created, it is planned to predict students who have potential problems in completing their undergraduate education early and to continue their education life by providing various social and psychological support to continue their education. Early prediction and intervention are very important for ensuring continuity in higher education and for students to be more successful individuals as undergraduate education. By comparing the machine learning algorithms used in the study, the algorithms planned to achieve the most success were studied and the data set was analyzed and compared to increase the success values of these algorithms. The fact that the study was conducted only in a specific region is a limitation of the study. In the future, the universal validity of the model can be increased by using data sets obtained from different regions.

METHOD

In this section, the dataset, machine learning algorithms and analyses that will be used to make predictions about whether students will continue their undergraduate education are explained.

Dataset

In this study, the dataset obtained from the UCI Machine Learning Repository (University of California Irvine Machine Learning Repository), which is considered as a reference source in the field of machine learning, was used. UCI datasets are widely used in academic studies and their validity is internationally recognized. The dataset used in the study was created from institutional data (compiled from various databases) of students enrolled in undergraduate programs at the Polytechnic Institute of Portalegre, Portugal, in 2018-2019. The students in the dataset include students enrolled in undergraduate programs in agronomy, design, education, nursing, journalism, management, social work, and technology (Martins, Tolledo, Machado, Baptista, & Realinho, 2021).

The dataset consists of 37 attributes belonging to 4424 students. The attributes of the students consist of Demographic Variables, Socio-Economic Variables, Academic Variables, Achievement Status Distribution categories, which are shown in detail in Table 1. For missing data in the dataset, the median value filling method was preferred. This method was preferred primarily to reduce the effect of extreme outliers and for its simplicity.

Table 1 Attribute Categories

Category.	Attributes
Demographic Variables	Marital Status, Gender, Age at Enrollment, Nationality, Special Education Needs
Socio-Economic Variables	Application Mode, Application Sequence, Program, Day/Night Study, Previous Education, Previous Education Grade, Admission Grade, Placement Status, 1st Semester Course Credits, 1st Semester Enrolled Courses, 1st Semester Assessed Courses, 1st Semester Passed Courses, 1st Semester Grade Point Average, 1st Semester Unassessed Courses, 2nd Semester Course Credits, 2nd Semester Enrolled Courses, 2nd Semester Assessed Courses, 2nd Semester Passed Courses, 2nd Semester Grade Point Average, 2nd Semester Unassessed Courses
Academic Variables	Application Mode, Application Sequence, Program, Day/Night Study, Previous Education, Previous Education Grade, Admission Grade, Placement Status, 1st Semester Course Credits, 1st Semester Enrolled Courses, 1st Semester Assessed Courses, 1st Semester Passed Courses, 1st Semester Grade Point Average, 1st Semester Unassessed Courses, 2nd Semester Course Credits, 2nd Semester Enrolled Courses, 2nd Semester Assessed Courses, 2nd Semester Passed Courses, 2nd Semester Grade Point Average, 2nd Semester Unassessed Courses
Success Status Distribution	Students are divided into three categories: Graduation, Relative Success and Failure.

Machine Learning Algorithms Used

In this study, 9 different machine learning algorithms were applied to predict student achievement. The algorithms were selected based on their suitability for the classification problem, widespread use in the literature, and the possibility of comparative analysis. Machine Learning Algorithms Used:

Logistic Regression

Logistic regression is a statistical method widely used in classification problems (Hosmer, Lemeshow, & Sturdivant, 2000). The model estimates the classification probabilities of independent variables using a logit function. The parameters β shown in Equation 1 represent the model coefficients and X represents the independent variables.

$$P(y=1|x) = 1 / (1 + e^{-(\beta_0+\beta_1x_1+...+\beta_nx_n)}) \quad (1)$$

Decision Trees

Decision trees create classification rules by successively partitioning the dataset according to feature values (Quinlan, 1986). As seen in Equation 2, the best partitions are determined using Entropy or Gini index.

$$Gini(t) = 1 - \Sigma[p(i|t)]^2 \quad (2)$$

Random Forest

This ensemble method, proposed by Breiman (2001), is based on a combination of multiple decision trees. Each tree is trained on a bootstrap sample and the results are combined by voting.

Support Vector Machines (SVM)

SVM, developed by Vapnik (1995), is based on finding the optimal separating hyperplane. As seen in Equation 3, kernel functions are used to model nonlinear separations.

$$f(x) = \text{sign}(\Sigma\alpha_i y_i K(x_i,x) + b) \quad (3)$$

K-Nearest Neighbor (KNN)

This method, proposed by Cover and Hart (1967), is a heuristic approach that determines the classification based on the class labels of the nearest neighbor.

Naive Bayes

This method, based on Bayes' theorem, works on the assumption that independent variables are unconditionally independent (Murphy, 2012).

$$P(y|x_1,...,x_n) \propto P(y)\Pi P(x_i|y) \quad (4)$$

Gradient Boosting

This method, developed by Friedman (2001), is based on training weak learners sequentially in a way that reduces their margin of error.

XGBoost

XGBoost, developed by Chen and Guestrin (2016), is a gradient boosting algorithm augmented and optimized with regularization mechanisms.

Artificial Neural Networks (MLP)

The multilayer perceptron (MLP) is a basic form of artificial neural network (Bishop & Nasrabadi, 2006). It performs non-linear transformations between layers using activation functions.

In total, 9 different MLP algorithms were implemented and their performance was compared. The grid search method was used for hyperparameter tuning and the optimum parameter values were determined for each algorithm. Throughout the study, the generalizability performance of the models was tested with a five-fold cross-validation method.

Model Achievement Criteria

Various metrics are used to evaluate the performance of classification models. These metrics indicate how accurately the model predicts and how reliable it is. To visualize the performance of the model, the confusion matrix shown in Table 2 is used. This matrix compares the predictions of the model with the actual values.

Table 2 Confusion Matrix

Estimate / Actual	Positive (1)	Negative (0)
Positive (1)	True Positive (TP)	False Positive (FP)
Negative (0)	False Negative (FN)	True Negative (TN)

DP values that are predicted positive by the model and are positive in reality. FC values that the model predicts as positive but are actually negative. Values that the YN model predicts as negative but are actually positive. Values that the DN model predicts as negative and are actually negative.

Accuracy-Error Rate

Accuracy is the ratio of correct forecasts to total forecasts. Error rate is the ratio of wrong forecasts to total forecasts.

$$\text{Accuracy} = (TP + TN) / (TP + FP + FN + TN) \quad (5)$$

Error Rate = (FP + FN) / (TP + FP + FN + TN) (6)

Precision

Precision indicates how much of the model's predicted positive values are actually positive.

Precision = TP / (TP + FP) (7)

Recall/Sensitivity

Sensitivity shows how much of the values that are actually positive are predicted to be positive by the model.

Sensitivity = TP / (TP + FN) (8)

F-Measure

The F1-score is the harmonic mean of precision and sensitivity. It assesses both precision and sensitivity in a balanced way.

F1-Score =2*(Precision*Sensitivity) / (Precision + Sensitivity) (9)

ROC Curves (Receiver Operating Characteristic Curve)

The ROC curve shows the true positive rate (TP) of the model against the false positive rate (FP) at different thresholds. The area under the curve (AUC) shows the overall performance of the model. The closer the AUC value is to 1, the better the model is. The true positive rate (TP) is the same as the sensitivity. False positive rate is calculated by the formula FP/ (FP+ TN).

RESULTS

In this study, 9 different machine learning algorithms are used to predict whether undergraduate students will continue their education and their performances are compared. The dataset includes various characteristics such as demographic information, academic background and socio-economic status of the students. The target variable is the classification of students as “Graduated” (1) or “Not Graduated/Continuing” (0). The results shown in Table 3 show the performance of 9 different machine learning algorithms on the 5-fold cross-validation and test set:

Table 3 Performance Metrics of Machine Learning Algorithms

Model	Cross Validation Average Accuracy	Cross Validation Standard Deviation	Test Accuracy Rate
XGBoost	0.892	0.012	0.901
Gradient Boosting	0.885	0.011	0.896
Random Forest	0.879	0.013	0.889
LightGBM	0.874	0.014	0.883
Logistic Regression	0.862	0.015	0.871
Artificial Neural Network	0.857	0.016	0.866
Support Vector Machines	0.851	0.017	0.859
K-Nearest Neighbor	0.842	0.018	0.848
Decision Tree	0.831	0.019	0.839

Model	Cross Validation Average Accuracy	Cross Validation Standard Deviation	Test Accuracy Rate
Gauss Naive Bayes	0.813	0.021	0.824

The classification model of the XGBoost algorithm, which gives the most successful result among the machine learning algorithms applied to the dataset, is shown in Table 4. In the table, Precision shows how many of the samples marked as positive by the model are actually positive. Recall shows how many of the true positives are correctly predicted. F1-Score is the harmonic mean of precision and recall.

Table 4 XGBoost Algorithm Classification Model

	Precision	Sensitivity	F1-Score
0	0.91	0.89	0.90
1	0.89	0.91	0.90

According to these results, the model can predict both graduating and non-graduating students with high accuracy. The precision values of the model are around 0.90 for both classes, indicating that the false positive and false negative rates of the model are balanced.

Figure 2 shows the top 10 most important attributes and their importance ratios. According to these results, “Previous qualification grade” and “Admission score” are the two most important attributes indicating the student's previous academic performance. This finding shows that the student's previous academic performance plays a critical role in predicting university success. Other important characteristics include factors related to age, gender and socio-economic status.

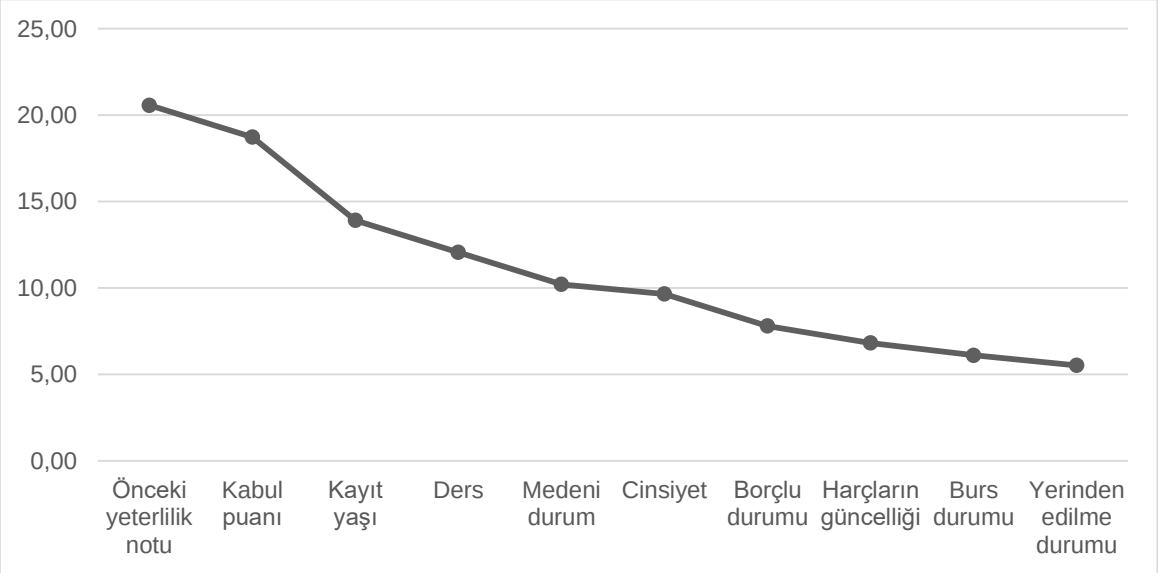


Figure 2 Top 10 Most Important Attributes and Their Importance

The better performance of ensemble methods such as XGBoost, Gradient Boosting and Random Forest compared to other algorithms can be explained by their ability to model complex data structures. In particular, it has been observed that XGBoost creates generalizable models by preventing overfitting thanks to its regularization techniques and optimization algorithms. This is explained by the fact that XGBoost increases the generalizability of the model thanks to its regularization techniques (L1, L2) and resistance to overlearning. Attribute importance was analyzed to ensure the explainability of the model. Logistic regression, a linear model, performed very well with a test accuracy of 87.1%, indicating that there are linear relationships between some features in the dataset and the target variable. The 86.6% test accuracy of the multilayer perceptron (MLP) model suggests that more complex models may not necessarily

perform better on this dataset. Gaussian Naive Bayes performed the poorest with a test accuracy of 82.4%, suggesting that this algorithm's assumption of conditional independence between features may not be fully valid for the dataset.

RESULTS and DISCUSSION

This comprehensive analysis reveals that ensemble methods, especially XGBoost, outperform other traditional machine learning algorithms in predicting student success. Academic background and entrance grades, which the model identifies as the most important features, stand out as critical factors in student success. The findings suggest that it may be beneficial for educational institutions to use XGBoost or similar ensemble methods when developing early warning systems and to develop intervention strategies that take into account students' previous academic performance. In the next phase of this study, we plan to further improve the performance of the models using hyperparameter optimization techniques and investigate alternative feature engineering methods. It is also proposed to analyze the decision-making processes of the models in more detail using model interpretability techniques.

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Investigation of the Thematic and Methodological Trends of Completed Graduate Theses Related to Mathematical Modeling in The Field of Mathematics Education[1]

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Abstract
The aim of the research is to determine the thematic and methodological trends of completed national and international master's and doctoral theses related to mathematical modeling in the field of mathematics education. Qualitative research method was used in the study, and a case study was adopted as a model. Within the scope of the research, from the master's and doctoral theses published in Turkish and English in the field of mathematics education and training covering the years 2013-2023 (October), in the YÖK National Thesis Center and in the ProQuest database; A total of 197 theses on mathematical modeling were examined with the Thesis Evaluation Form. Mendeley Reference Manager, SPSS Statistics 26 package program and VOSviewer program were used in the analysis of the data. Thematic analysis and content analysis, quotation analysis from bibliometric analysis and keyword analysis were performed. According to the results of the research; It is seen that there was a significant increase in theses related to mathematical modeling in mathematics education, especially in 2019, while the number of theses decreased in 2020 and 2021, and there was a significant increase again in 2022. It has been determined that the majority of studies on mathematical modeling in mathematics education in Turkey are at the master's level, while doctoral studies are more common in the USA and Canada. The university that produces the highest number of theses in the field in related researches is Atatürk University in Turkey and Columbia University abroad. Considering the distribution of the subjects of the researches; The most common issue was the development of modeling activities with 45 studies. When we look at the distribution of learning areas, the most studied area is the subject of "Numbers and Operations" with 58 theses. The most commonly used method is qualitative research with 61.42% and the most common model is case study with 59.39%. It was determined that the most common sample type used in the studies was secondary school students. Content analysis is the most commonly used type of analysis in theses, and GeoGebra is the most commonly used technology. In the context of these results, suggestions were presented to the stakeholders.

Keywords: Mathematical modeling, bibliometric analysis, mathematics education, modeling, technology

INTRODUCTION

Mathematical modeling in mathematics education has emerged as a research topic on which extensive research has been carried out in recent years. Mathematical modeling is proposed as a powerful tool, especially in mathematics, that allows us to understand concepts and processes expressed abstractly by associating them with real-world problems (Harrison, 2001). Mathematical modeling can enable students to see mathematics not only as a lesson, but also as a powerful tool that they can use to solve problems they encounter in their daily lives (Keskin, 2008).

It is a fact that extensive research is needed to understand the potential effects of mathematical modeling on student achievement, problem-solving abilities, and understanding of mathematics.

[1]This article is derived from the corresponding author's master's thesis titled Investigation of the Thematic and Methodological Trends of Completed Graduate Theses Related to Mathematical Modeling in the Field of Mathematics Education.

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For this reason, it is an undeniable need for researchers to reveal the point where the subject has evolved by identifying the deficiencies in the research, and on the basis of teachers, it is an undeniable need to systematically evaluate the effect of the mathematical modeling process on learning outcomes, student participation and motivation. In addition, how teachers implement these strategies in the classroom, how they adapt them to student needs, and the challenges they face in this process are among the topics that need to be covered widely. The aim of this study is to make thematic and methodological analyzes of master's and doctoral theses prepared in the field of mathematical modeling in Turkey and abroad within the framework of mathematics education and training, and to reveal the general status of the relevant modeling studies in this process.

Mathematical Modeling

Over the past two decades, mathematical modeling has been discussed by different researchers in the field of mathematics education, but the definition of mathematical modeling differs in different studies. Blum and Borromeo Ferri (2009) define mathematical modeling as "the process of translation between the real world and mathematics in both directions" (p. 45). According to this definition, the "real world" includes situations outside the world of mathematics, encompassing "nature, society, daily life, and other scientific disciplines" (Pollak, 2007). Carlson et al. (2016) define mathematical modeling as "a process in which mathematics is used to solve authentic, real-world problems."

According to Carreira and Baioa (2011), the result of the process by which students express, interpret, experiment, and stimulate their thoughts is called a mathematical model, and this process is known as mathematical modeling. According to Kertil (2008), mathematical modeling includes the conceptual structures necessary to mathematically understand the problem situations encountered. Keskin (2008) defines mathematical modeling as a process that overcomes real-life problems that require solutions; According to Kapur (1998), mathematical modeling is a process that allows both solving real-life problems and adapting mathematical problems to real-life situations. Erbaş et al. (2014) define mathematical modeling as the analysis of a real-life event by mathematical methods; Niss (1988) defined mathematical modeling as a combination of mathematical structures used to represent a specific part of a real-world situation and the relationships between these structures.

According to Blum and Borromeo Ferri (2009), the objectives of mathematical modeling are; (i) to assist students in understanding real-world phenomena; (ii) support all forms of mathematics learning, including motivation, comprehension, and concept formation; (iii) to improve mathematics proficiency and (iv) to gain a more accurate and descriptive mind in order to present a mathematical perspective. The term mathematical modeling can sometimes be confused with modeling mathematics, but mathematical modeling differs from the understanding of modeling mathematics, which is done to comprehend the abstract structure of mathematics (Çavuş-Erdem, 2018). For example, concrete materials such as decimal counting blocks, algebra tiles, and fraction cards are tools used to make mathematical concepts and operations more understandable. Therefore, mathematical modeling is often perceived as the use of concrete materials at the elementary school level (Lesh et al., 2003). Cirillo et al. (2016), on the other hand, consider the representation of mathematical concepts and structures with visual representations, which is defined as modeling in mathematics, and considers it as a separate concept from mathematical modeling. The main goal in modeling mathematics is to make mathematical concepts understandable in a visual form, but the goal in mathematical modeling is to develop conceptual tools that can be solutions to real-life problems. In the process of mathematical modeling, in addition to visual and concrete models, various structures such as equations, inequalities, graphs, and tables can also be models.

Mathematical Modeling Process

Research on mathematical modeling shows that the modeling process is cyclical. In this context, the researchers have tried to determine the process that should be applied to provide students

with mathematical modeling skills by examining the mathematical modeling steps, the relationships and transitions between these steps. Studies show that mathematical modeling is a comprehensive and complex process (Justi and Gilbert, 2002).

Blum and Leiß (2007), who describe the mathematical modeling process, describe this process with a particular focus on the state model stage. The first step in the modeling process is to understand a real-life situation or problem and create a mental representation of it. When moving on to the real model or problem through this representation, the situation is simplified, structured and the necessary elements for the solution are determined using mathematical information (Blum and Leiß, 2007). After the real model or problem is created, mathematization is carried out with the help of mathematical information and thus a mathematical model or problem emerges. By using modeling skills, solutions to these mathematical models or problems are obtained and results are reached. Mathematical results are compared with their real-world counterparts and these results are interpreted. Finally, the concordance between real-world results and mental representations is evaluated, and the verification process is completed (Borromeo Ferri, 2006; Blum and Leiß, 2007).

Mathematical Modeling Approaches

There are different approaches to mathematical modeling and there is no universal understanding (Kaiser and Sriraman, 2006). While some researchers (Lesh and Doerr, 2003) adopt mathematical modeling as a paradigm beyond structuralism, seeing it as a new approach in education and training; others perceive mathematical modeling as expressing real-life situations of prepared mathematical structures, models, and formulas in mathematical language, including real-life applications (Haines and Crouch, 2007).

As a result of their efforts to classify modeling studies in congresses organized by ICMI (International Commission on Mathematical Instruction) and ICTMA (The International Community of Teachers of Mathematical Modelling and Applications), three main perspectives on general objectives and theoretical frameworks were identified by Kaiser and Sriraman (2006);

i. *Pragmatic perspective:* This approach focuses on pragmatic goals, using mathematics to solve practical problems in everyday life.
ii. *Scientific-humanitarian perspective:* This approach aims to develop students' ability to make connections between mathematics and reality, with an emphasis on science and humanistic education.
iii. *Holistic perspective:* This approach defines the modeling process in a common framework of scientific, mathematical, and pragmatic objectives.

A striking classification of mathematical modeling in the literature is the classification that includes four basic different approaches put forward by Berry and Houston (1995). These approaches can be listed as experimental modeling, theoretical modeling, dimensional analysis modeling and simulation modeling.

i. *Experimental Modeling:* This type of modeling is carried out in such a way that the process creates graphics or parity as a result. A model is created by solving the problem with the use of experimental data. Experimental modeling solves practical problems through the use of hard data.
ii. *Theoretical Modeling: It is* a type of modeling created by basing the formula obtained at the end of the process on theoretical foundations. The problem-solving process is based on theory as well as data.
iii. *Dimensional Analysis Modeling: It* is the modeling obtained based on the concept of dimension in the field of physics. In fields such as engineering and science, this type of modeling is created by grouping variables in an appropriate way.

iv. *Simulation Modeling:* This form of modeling is created by simulating the available data with the help of a computer. Computers are often used to create abstract models and evaluate unattainable probabilities.

Furthermore, other approaches cited by Kaiser and Sriraman (2006) are as follows:

i. The realistic or applied modeling approach aims to develop students' problem-solving and modeling skills, comparing them to problem situations from engineering and other disciplines and encouraging them to apply mathematical knowledge in different contexts.

ii. The educational modeling approach, as a blend of realistic and contextual modeling, uses mathematical modeling to create appropriate learning environments and processes to teach students concepts.

iii. The epistemological or theoretical modeling approach focuses on the relationships between math concepts and students, drawing attention to each step of the problem-solving process and placing less emphasis on the importance of realistic context.

iv. The cognitive modeling approach analyzes students' cognitive and metacognitive thought processes during the modeling process and provides teachers with an environment that guides them to understand and support students' thought processes.

v. The contextual modeling approach emphasizes the necessity of combining often more than one discipline, topic, or major theory to create realistic complex decision-making situations, justifying the philosophy that knowledge is organized around experience.

According to Galbraith and Stillman (2006), there are 3 different approaches in the field of modeling. These can be summarized as follows;

i. The "general application approach" focuses on a specific application. Typically, the teacher introduces the model and students use the model in a controlled way. This approach is often used in secondary schools and includes step 4 (calculating, solving inequalities, etc.) and step 5 (interpreting and verifying actual results in everyday life) of the modeling process.

ii. The "structure modeling approach" uses real-life situations and covers all stages of the modeling process from step 1 (the student's understanding of the problem situation) to step 7 (presenting possible solutions to the problem). The teacher makes a significant effort to understand the mathematical model used in stage 3 (the process of mathematization).

iii. "Open modeling approach". In this approach, students work with the given problems with the limited help of the teacher, because the teacher does not have to control the students. This approach is not widely used

Mathematical modeling is divided into modeling as an end *and* modeling as a means *with an alternative approach* (Galbraith, 2012). In the *modeling-as-purpose* approach, the focus is on the development of the skills and competencies necessary to model real-life situations. In contrast, the *modeling-as-tool* approach emphasizes the use of models in teaching mathematical concepts. In the perspective of *modeling as a purpose*, mathematics is taught using existing models, while at the same time, it is aimed to develop students' modeling skills by solving real-life problems with the help of these models. In the *modeling approach as a tool*, the main purpose is to teach mathematical concepts and mathematical modeling method is used for this purpose. This type of modeling approach allows for the learning of mathematical concepts based on the needs of real life. Thus, students participate naturally in the activities and take an active role in the process (Dost, 2019).

Purpose and Importance of the Research

The aim of this research is to determine the thematic and methodological tendencies of national and international master's and doctoral theses related to mathematical modeling in the field of mathematics education. In this context, answers to the following research questions were sought;

A. What are the distribution and changes of the thematic features of master's and doctoral theses on mathematical modeling by years?
   - What is the distribution of theses by year?
   - What is the distribution of theses according to the countries where they are made in terms of type?
   - What is the distribution of theses according to the universities where they are made?
   - What is the distribution and change of thesis topics over the years?
   - What are the distribution and changes of the learning areas of the theses over the years?

B. What are the distribution and changes of the methodological features of master's and doctoral theses on mathematical modeling over the years?
   - What are the distribution and changes of the methods in the theses according to the years?
   - What are the distribution and changes of the sample types in the theses according to the years?
   - What is the sample distribution according to the teaching levels where the theses are concentrated?
   - What is the distribution of theses according to sample group size?
   - What is the distribution of theses according to data collection tools?
   - What is the distribution of theses according to the data analysis used?
   - What are the distributions of technology use in mathematical modeling activities in theses?

Scientific research results have an important place in influencing various fields of science, policies and practices. These results both provide an empirical basis for practices and guide practitioners in professional activities. In addition, many studies in the field of education have found application by forming the basis of educational reforms. The approach of integrating the results of scientific research, examining research on a particular topic from a broad perspective, and creating a new product is one of the widely used research methods today.

Research such as determining the quality of educational research, mapping the general profile, the dimensions in which these researches evolved, and obtaining new upper results from the data (case study, systematic review, meta-analysis, etc.), which were especially popular in the United States in the 1980s, are among the types of research that have been widely covered in our country with the increasing accumulation in the 2000s. The first source to be determined by a researcher who plans to start new research is the studies that reveal the existing research, identify the missing areas in the literature, and present the results in a broad framework. Identifying trends by bringing together different studies in a particular area can help educators and decision-makers make informed decisions. It can also contribute to identifying potential strategies to improve teachers' practice in mathematical modeling.

When we look at the studies on the subject; Ünlü (2023), Eryiğit (2022), Koç (2020) and Albayrak (2017) have researches prepared at the graduate thesis level. The articles and theses in the literature have been meticulously examined, and the scope and limitations of these studies have been revealed. In this way, original research has been planned to fill the gap in the field. In the research of Eryiğit (2022); limited the research years to the years 2000-2020 and limited it only to the theses within the scope of the YÖK Thesis Center. In addition, he limited his research to theses made only at the primary education level. In this study, which was prepared in this context, the theses prepared in 2023 and the theses at different levels in the field of mathematics

education and training were included in the sampling and the gap was tried to be filled. Albayrak (2017) limited his study to theses up to 2016. Therefore, this study was limited to a total of 28 theses. Considering that modeling studies have intensified in recent years, this is a serious limitation for the current field. In our research, the study period has been extended to cover the years 2013-2023.

Koç (2020) limited his study to 2019 and did not engage in methodological analysis. In addition, the database was again limited to domestic markets. Therefore, bibliographic data is also out of the question. In this study, in addition to 4 years of current studies, method analysis, analysis of prominent themes and bibliometric data were also included. For this reason, our research was included in the theses in the ProQuest database, and research proposals, detailed method analysis and country information were also included. Since Ünlü (2023) limited the scope of the studies he sampled in his study in terms of success and attitude, there was no subject limitation in our study. In addition, since the thesis is a meta-analysis study, the method analysis was limited. First, this research will allow us to understand the current state of mathematical modeling in graduate-level academic studies. The thematic review of the theses helps us to determine which topics mathematical modeling is concentrated on and in which areas further research is needed. In addition, methodological analysis will shed light on the application of different methods by identifying the research methods used in studies on mathematical modeling. It is thought that this study will contribute to the field by guiding future researchers in understanding which methodologies are more effective and by drawing a methodological route for research in this field.

METHOD

Model of the Research

This research was designed with qualitative methods. Qualitative research is a method used to obtain new information or to add different perspectives to existing information in cases where complete information is not available or it is difficult to evaluate with quantitative measurements (Strauss and Corbin, 2007). Within the scope of the research, from the master's and doctoral theses published in Turkish and English in the field of mathematics education and training covering the years 2013-2023 (October), in the YÖK National Thesis Center and in the ProQuest database; Theses on mathematical modeling were examined. For this reason, a case study, one of the qualitative research types, was used as a research model. According to McMillan (2000), a case study is a method in which a specific event, environment, program, social group, or associated systems is studied in depth. Case study refers to an in-depth process of analysis and identification on a finite system (Merriam, 2009). Yin (2009), on the other hand, defines a case study as 'a model that investigates a current event or phenomenon in its own environment'. Research; It aims to analyze different studies in the existing literature and to present a general perspective on the research topic.

Universe and Sample of the Research

Databases

In the research, one of the titles Sample, Study Group or Participants should be used according to the way the group is formed. Information on who the study group of the research consists of and the sampling method is stated in this section.

The study population of the research is the theses carried out in the field of mathematics education/training and on mathematical modeling. In the research, sampling was made in terms of databases, primarily *limited to YÖK National Thesis Center* and *ProQuest Dissertations and Theses databases*.

ProQuest Dissertations and Theses is a comprehensive database that provides access to master's and doctoral studies from academic institutions around the world. With records dating back to the 17th century, it is both historically significant and provides access to modern research. This database specifically covers dissertations made at institutions in the U.S. and Canada, but it also

has a wide range across the globe. Some records contain only abstracts or citations, but full-text versions are available through library services or by direct purchase. Users can search by criteria such as keyword, author, institution, subject, or date. Advanced search options allow for more specific queries with filters such as document type or language (ProQuest, 2024). *YÖK National Thesis Center is* a database where theses (master's, doctorate, medical specialization and proficiency in art) made in the field of graduate education in Turkey are archived and made available in digital environment. It was founded in 1987 and compiles academic studies conducted in universities in Turkey and makes them available to researchers. The database is one of the most comprehensive sources where graduate theses are collected, and since 2006, the digitalization process has accelerated and many theses have become accessible in the digital environment (Anonymous, 2024). Publications that are included in the research process and make up the sample; From master's and doctoral theses covering the years 2013-2023 (October), published in Turkish and English in the field of mathematics education/training, *in the YÖK Thesis Center* and in the *ProQuest Dissertations and Theses* database, the full text of which can be accessed (open to access); These are theses on mathematical modeling. *197 theses,* 144 in the *YÖK Thesis Center and 53 in the* ProQuest Dissertations and Theses database (*See.* Figure 3.1.) It was included in the research. These theses cover a total of 10,871 participants and 654 studies.

Screening strategy and inclusion/exclusion criteria

Scans made in the YÖK Thesis database

(i) The database was searched on 29.10.2023.

(ii) As the first scanning method*, the keywords "*mathematics*" and "*model"*, the search type "*in pass"*, the year "*2013-2023" were scanned in the titles and abstract in the database by using *the "in advanced scanning"* feature. As a result of this scan, 654 results were obtained. This file was transferred to *Excell*, the irrelevant titles were eliminated and the remaining titles *were written in the "Decision"* section as *"Those suitable for the purpose of the research"*. The first data pool was created with the remaining 137 studies.

(iii) In addition, using the *"Detailed Scanning"* feature as the second scanning method, the words "*Mathematical Modeling"* and "*Mathematical Model"* were written, and 843 studies were listed. With the 2013-2023 limitation, 578 studies remained on the list and theses in different disciplines were determined on this list. At this stage, color coding was applied and the theses that needed to be removed were indicated in red, and the theses that needed abstract scanning were marked in yellow. A separate file was created for the remaining theses as a result of the detailed title and abstract reading and the elimination. These theses were *transferred to the Excell* file. A data pool was created with the remaining 139 studies.

(iv) All theses obtained in the first and second methods were ranked and compared from small to large based on their thesis numbers, and the *missing theses of both methods were completed in the "Comparison" file and the overlaps were eliminated, and a total of 144 theses were transferred to the Mendeley program as full text and made ready for analysis.*

Search on the ProQuest Dissertations and Theses database

(i) The database was searched on 29.10.2023.

(ii) Different combinations of keywords and Boolean operators were used while scanning. In the examination, *due to* the use of the word *"modeling" in the form of* "modelling" in some of the foreign publications, the *keywords "*mathematical modeling" *were coded in the form of* math * model * *while scanning the* ProQuest Dissertations and Theses database.

(iii) In the ProQuest Dissertations and Theses database, a search was performed using different combinations with the keyword mathematical modeling. The keyword specified

in the search section of the database *is written as TI, AB (*"mathematical model*") to include *the "title and "abstracts" of the theses* . Since the requested scan contains an abbreviation character (*), the database scan is changed to TI, AB (("*mathematical model*" OR "*mathematical modeling*" OR "*mathematical modelling*" OR" *mathematical models*"")) and the screening was carried out with the "*include all*" housing of these suggestions. The year range of the studies is 2013-2023, the subject *is "mathematics education",* the publication language is filtered as Turkish and English. As a result of the screening, 65 theses were listed. This list was reduced to 60 theses when the full-text filter was added. 5 theses that are in Turkish and included in the YÖK Thesis Review have been removed from the list. In this case, 2 full texts, which were created and understood to be related to different disciplines in the title review, were removed from the list at this stage. Finally, the .ris file covering 53 theses *was introduced to the Mendeley* program, and was prepared for the data collection process.

Reasons why theses are not included in the scope of research:

(i) Not available in relevant databases

(ii) The full text is not accessible

(iii) There is no scientific research of the type designated as a report, etc.

(iv) Does not cover the subject of mathematical modeling

(v) It has not been done in the field of mathematics education/training

The PRISMA diagram *for the studies included* in the study is presented in Figure 1.

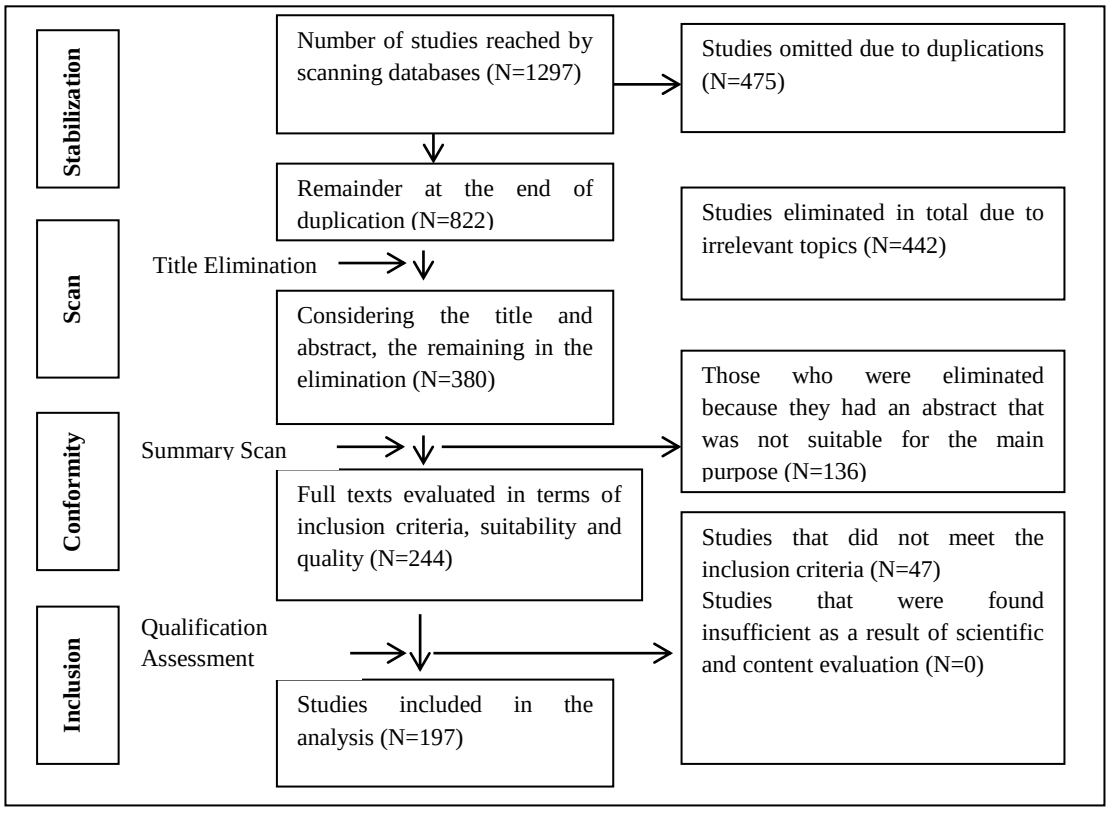


Figure 1. Flow diagram of the studies included in the analysis

As can be seen in the PRISMA diagram in Figure 1, all studies for mathematical modeling were first scanned in the relevant databases in order to determine the studies suitable for analysis. There were 1297 theses in the first study pool. Of the studies examined, 475 studies that were in duplication/overlap status were excluded from the scope. In the second stage, the remaining

822 studies were examined in depth, and 442 of these studies were not suitable for the study due to unrelated topics It has been removed from the pool on the grounds. As a result of the title and abstract elimination, the remaining 380 studies were subjected to detailed examination again and 136 theses were removed because they were not suitable for the purpose. 47 studies were excluded from the analysis on the grounds that they did not meet the inclusion criteria (carried out in different disciplines, etc.). Finally, the remaining 197 studies were transferred to the Mendeley Program for evaluation as they were fit for purpose.

Data Collection Tool

Using the Thesis Evaluation Form *presented in Annex 1*, each study was numbered and the relevant information was withdrawn from the theses. Research; The Thesis Evaluation Form, which was originally developed by Albayrak and Çiltaş (2017) and classified by Eryiğit (2022) in terms of mathematical modeling theses, was rearranged within the scope of research purpose and sub-objectives. The sections "preparation of modeling problems", "application period" and "categorization of mathematical modeling" in the *classification form of Eryiğit (2022)* were removed in the context of the purposes of the research and in line with the expert opinion*, "database", "publication language", "country where the thesis was conducted", "thesis advisor information", "university where the research was conducted", "keywords", "type of technology used",* and *"Number of Modeling Events"* sections have been added. The final form of this form, which is used for each thesis, belongs to the theses; *"Thesis Tag", "Country", "Publication Language", "Advisor", "Keywords", "Mathematical Modeling Topic", "Learning Area", "Research Method", "Research Model", "Research Design", "Data Collection Tool", "Data Analysis Tool Type", "Data Analysis Type", "Data Analysis Method", "Number of Samples", "Sample Type", "Sample Group Level", "Class Information Examined", "Type of Technology Used"* and *"Number of Modeling Activities"* information were withdrawn from the theses.

Analysis of Data

Qualitative analysis methods were used in the analysis of the data obtained. Since theses are valuable resources that provide information in the relevant field, it is known that researchers often work on these written materials in qualitative research (Wallen and Fraenkel, 2000). According to Cohen, Manion and Morrison (2007), documents; journals, technical documents, field notes, diaries, biographies and autobiographies, official records, papers, reports or statistics, primary or secondary sources, historical events or chronologies, photographs, projects, books, theses, plans, letters, articles. In this context, document analysis method was used in the research.

In the study, the analysis of the data was carried out in several stages. These;

(i) The theses in the study group were obtained from databases and transferred to *the Mendeley* program in computer environment.

(ii) In the second stage, *the analysis of the studies transferred to the Mendeley Reference Manager* program in order of code number *was carried out using* the Thesis Evaluation Form developed within the scope of the research.

(iii) As stated by Labuschagne (2003), content analysis is generally preferred in document analysis and the information in documents is categorized and classified. In this study, content analysis was used as the main method for data analysis. Content analysis is defined as the process of categorizing or coding specific words in a text by organizing them in a systematic way. In addition, emphasizes that content analysis is widely used in determining frequency with certain categories, especially through document reviews. In this context, the data were evaluated using categorical analysis and frequency analysis, which are content analysis types. (Dinçer, 2018; Büyüköztürk et al., 2019;mCohen et al., 2000).

(iv) First, frequency analysis was used, which focuses on counting the frequencies of message elements. In this type of analysis, countable units are determined and analysis indicators

are expressed as frequency. Frequency analysis reveals in a simple way the frequency of quantitative appearance of recording units. During the analysis, it was aimed to count the message elements according to the frequency of a particular element, and these counts were expressed as frequencies. This technique allows to understand how often a particular item occurs and the intensity and importance of this element in the context of analysis. As a result of frequency analysis, items can be classified in order of importance and grouped according to their frequency (Köhler and Stemmler, 1997). In this process , *SPSS Statistics 26* package program was used.

(v) In bibliometric analysis, which is another technique used in the research; The data were analyzed *with the help of the* VOSviewer program in *the common citation analysis* and *keyword analysis* stages. Bibliometric analysis is a method that examines the publications in the scientific literature and the characteristics of these publications. This type of analysis is used to evaluate research trends, scientific productivity, the most used sources, and interdisciplinary relationships. Bibliometric analysis, by evaluating the current situation in the literature, can guide future research and help us monitor the development of a particular field (Karataş, 2015). Bibliometric analysis is used for different purposes in research. According to Donthu et al. (2021), these are;

a) *Examining Publications:* Bibliometric analysis examines publications related to a particular subject, discipline or research area and allows you to follow the developments in that field. These publications usually include articles, dissertations, books, and conference proceedings.

b) *Author Analysis:* Author analysis aims to identify the authors who have published the most on a particular topic. In this way, prominent experts in the field and their work can be better understood.

c) *Journal Analysis: Determining* which journals receive more publications on a particular topic is part of bibliometric analysis. This can help us understand which journals are more research-intensive and the level of influence of those journals in the field.

d) *Citation Analysis: Citations* made by a study are considered an important indicator of the academic impact of that study. In bibliometric analysis, citation analysis is used to determine which works are referenced by others and how often.

e) *Co-citation Analysis:* This type of analysis examines the frequency with which two specific studies are cited together by the same other studies. This can help us identify thematic connections and interactions between different studies.

f) *Keyword Analysis:* Bibliometric analysis helps us understand research trends by identifying the most frequently used keywords related to a particular topic or field.

In this study, Bibliometric analyzes such as *Publication Review, Citation Analysis* and *Keyword Analysis* were performed.

Validity and reliability of the research

Validity in qualitative research means the ability of the researcher to observe the subject he is examining accurately and impartially. In addition, the researcher's explanation of the data collection process, the methods of reaching the findings and the detailed reporting of the obtained data are among the important elements to ensure validity (Yıldırım and Şimşek, 2008). In qualitative research, validity is divided into two main categories: internal validity and external validity. Internal validity is related to how accurately the research process reflects the phenomenon under study. In this respect, it is of great importance for the researcher to show consistency in data collection, analysis and interpretation processes (Büyüköztürk et al., 2008). In this study, the findings were explained in detail in order to ensure internal validity, the information about the research subject was supported by objective data, and then interpretations were made. In order to ensure consistency between the data, attention has been

paid to the criteria of internal homogeneity and external heterogeneity, so that similarities and differences are clearly revealed. External validity, on the other hand, means the generalizability of research findings. If the results of the research can be reproduced in similar environments and conditions, this indicates that external validity has been achieved. In this study, the process of extracting data from databases is explained in detail and the raw data are presented as publication information, although they are not presented as additional in terms of scope size.

Reliability refers to the transparent and detailed disclosure of the processes and data of the research; In other words, it allows another researcher to evaluate the study. In other words, it is about the reproducibility of research results (Yıldırım and Şimşek, 2008). In this context, the analysis of the data was carried out by two researchers and the formula of Miles and Huberman (1994) was used to calculate the reliability of the research. As a result of the calculation, the reliability of the research was found to be 87%. Values above 70% in reliability calculations indicate that the research is reliable. According to these results, it can be stated that the study is reliable.

RESULTS and DISCUSSION

In this section, four research questions determined within the framework of the research problem and sub-questions are taken into account and the findings obtained as a result of the data analysis are presented.

Findings and Discussion on the First Sub-Research Question

The analysis of the thematic features of the master's and doctoral theses related to mathematical modeling prepared in the field of mathematics education was carried out within the scope of the first research question. In this context, the findings of the distribution of national and international master's and doctoral theses related to mathematical modeling prepared in the field of mathematics education by years are presented in Table 1.

Table 1. Distribution of theses on mathematical modeling by years

Variable	Year	Database	*f*	%	*F* (Total)	% (Total)
Distribution by Years	2013	YÖK Thesis	3	1,52	10	5,08
		ProQuest	7	3,55		
	2014	YÖK Thesis	10	5,08	15	7,61
		ProQuest	5	2,54		
	2015	YÖK Thesis	7	3,55	11	5,58
		ProQuest	4	2,03		
	2016	YÖK Thesis	9	4,57	17	8,63
		ProQuest	8	4,06		
	2017	YÖK Thesis	9	4,57	14	7,11
		ProQuest	5	2,54		
	2018	YÖK Thesis	12	6,09	17	8,63
		ProQuest	5	2,54		
	2019	YÖK Thesis	25	12,69	32	16,24
		ProQuest	7	3,55		
	2020	YÖK Thesis	7	3,55	13	6,60
		ProQuest	6	3,05		
	2021	YÖK Thesis	13	6,60	14	7,11
		ProQuest	1	0,51		
	2022	YÖK Thesis	28	14,21	32	16,24
		ProQuest	4	2,03		
	2023	YÖK Thesis	21	10,66	22	11,17
		ProQuest	1	0,51		
Sum			**197**	**100**	**197**	**100**

As can be seen in Table 1, there are a total of 197 theses in the YÖK Thesis and ProQuest databases in the period between 2013-2023. While there were 10 theses (5.08%) in 2013, the number of theses increased in 2014 and 2016, with 15 theses (7.61%) and 17 theses (8.63%) registered, respectively. In 2019 and 2022, the highest number of theses was reached, and 32 theses (16.24%) were prepared in both years. In 2023, this number is 22 (11.17%). This distribution shows that there was a significant increase in theses related to mathematical modeling, especially in 2019, while the number of theses decreased in 2020 and 2021, and there was a significant increase again in 2022.

The distribution of theses by year on the basis of the database is presented in Figure 2 and

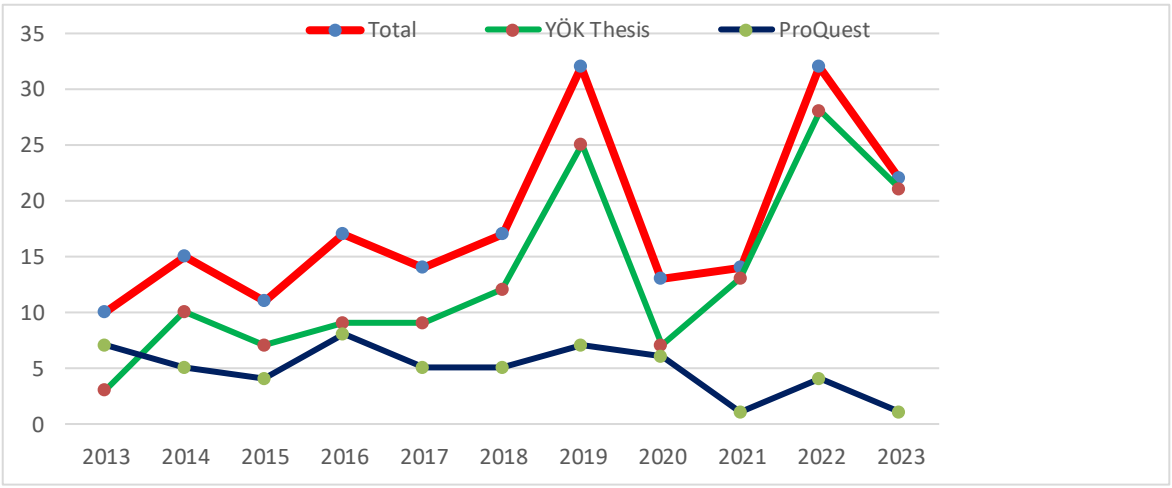


Figure 3.

Figure 2. Distribution of theses related to mathematical modeling in YÖK Thesis and ProQuest databases by years

As can be seen in Figure 2, while the distribution of YÖK Thesis database, which includes domestic theses, is more fragile by year, the number of theses in the ProQuest database, which includes international publications, provides a more stable graph. In terms of the total number of theses, it is seen in Figure 4.2 that there has been an increase in the rate of theses in the domestic YÖK Thesis database in recent years.

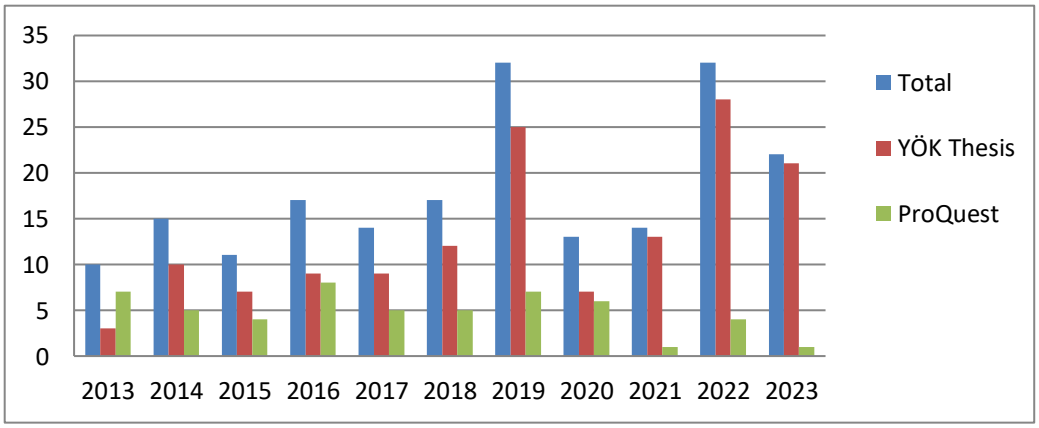


Figure 3. Distribution of theses related to mathematical modeling in YÖK Thesis and ProQuest databases by years

Considering the distribution of master's and doctoral theses in the field of mathematical modeling over the years and the differences on the basis of countries; In 2019 and 2022, there was a significant increase in the number of theses. This finding is in line with the research

results of Eryiğit (2022) and Koç (2020) that their mathematical modeling theses reached their peak in 2019. It can be thought that innovative approaches in the field of mathematics education at the global level may have gained momentum during these periods. Mathematical modeling has been seen as an effective tool in producing solutions to educational problems in recent years, and the increase in this interest is reflected in thesis studies. It can be said that developments in digital transformation and distance education are especially effective in this increase.

The reorganization of the Mathematics Course Curriculum in 2013 is also an important factor in the increase in theses. When we look at the Mathematics Applications Course Curriculum (2018), it *is stated that "modeling is included*". In this context, it can be said that the program can also guide the research. The decrease in the number of theses in 2020 and 2021 can be explained by the disruptions in academic processes due to the COVID-19 pandemic. While the pandemic has created a great transformation in education, it has also created serious difficulties in conducting research. Obstacles in the adaptation to distance education processes and data collection may have caused thesis studies to be postponed or restricted. However, the fact that there is a general upward trend in the number of theses in the YÖK Thesis database even in this period shows that researchers continue their work despite these difficulties and that the interest in mathematical modeling continues.

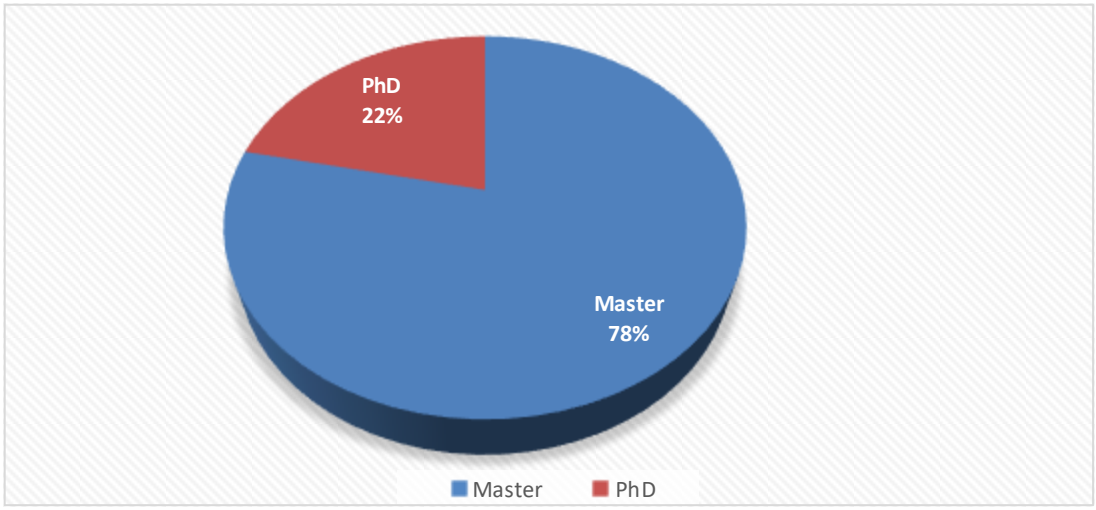
The distribution of master's and doctoral theses related to mathematical modeling prepared in the field of mathematics education according to the countries where they were made in terms of thesis type is presented in Table 2.

Table 2. Distribution of theses related to mathematical modeling included in the research according to the countries where they were made in terms of thesis type

Country	**Thesis Type**	***f***	**% (Country)**
Turkey	Master	113	78,47
	Doctorate	31	21,53
	Total	144	100
USA	Master	6	11,54
	Doctorate	46	88,46
	Total	52	100
Canada	Master	0	0,00
	Doctorate	1	100,00
	Total	1	100
Sum		**197**	**100**

Table 3 shows the distribution of master's and doctoral theses on mathematical modeling in the field of mathematics education by country. A total of 197 theses from Turkey, USA and Canada are included in the research.

The majority of theses in Turkey are master's theses; He has 113 master's theses (78.47%) and 31 doctoral theses (21.53%). In total, 144 theses from Turkey were recorded. In the USA, on the other hand, doctoral dissertations are predominant. There are 6 master's theses (11.54%) and 46 doctoral theses (88.46%) in the USA, with a total of 52 theses. Only 1 doctoral thesis (100.00%) from Canada was included in the research. The findings regarding the distribution of master's and doctoral theses in Turkey and the USA are presented in Figure 4.3 and Figure 4.4.



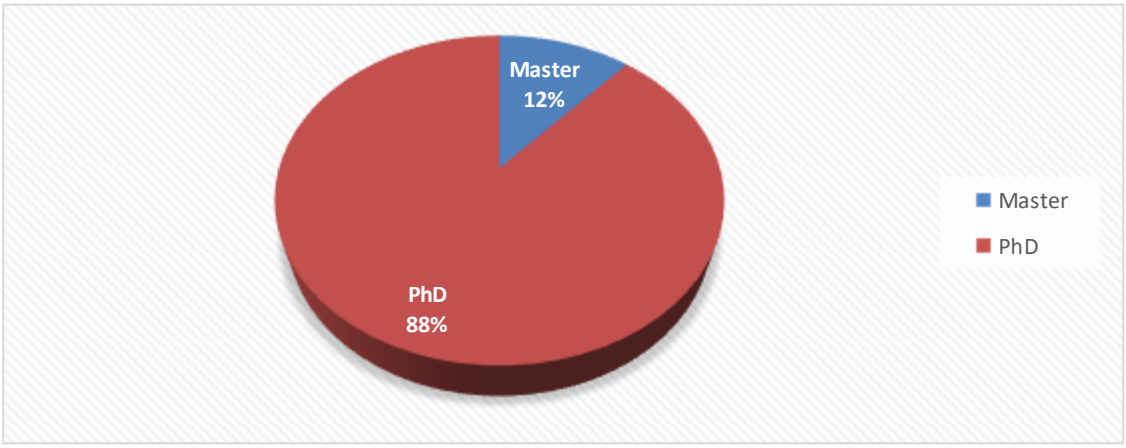
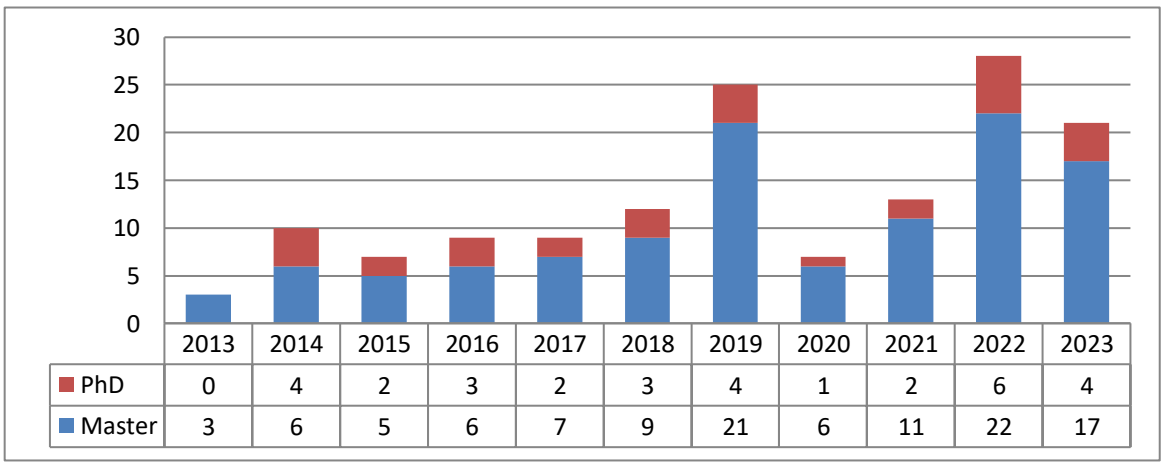


Figure 4. Distribution of theses on mathematical modeling in Turkey by genre

Figure 5. Distribution of theses on mathematical modeling in the USA and Canada by type

This distribution shows that the vast majority of studies on mathematical modeling in Turkey are at the master's level, while doctoral studies are more common in the USA and Canada.

The distribution and rates of the relevant domestic theses by year in terms of their types are presented in Figure 6 and Figure 7.

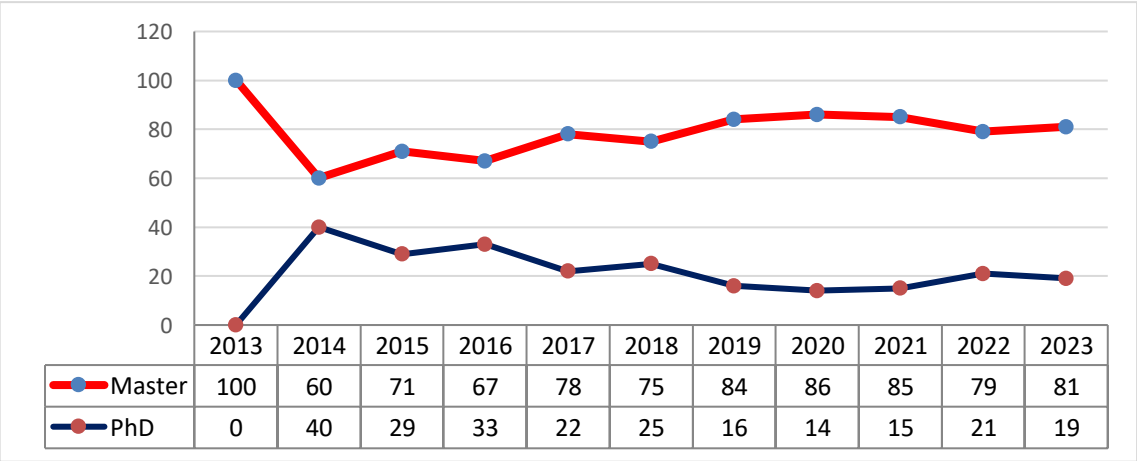


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
PhD	0	4	2	3	2	3	4	1	2	6	4
Master	3	6	5	6	7	9	21	6	11	22	17

Figure 6. Distribution of theses on domestic mathematical modeling by years on the basis of their types

When the distribution of master's and doctoral theses on mathematical modeling in Turkey by year is examined on the basis of types, a significant upward trend is observed in master's theses. While there were only 3 master's theses in 2013, this number has increased every year. In particular, master's theses, which reached 21 in 2019, reached the highest level by increasing to 22 in 2022. However, there was a certain decrease in 2020 with 6 theses. In 2023, the number of master's theses was recorded as 17.

In terms of doctoral theses, it is seen that there were no doctoral theses in 2013. While 4 doctoral theses were written in 2014, 2 doctoral theses were written in 2015, 3 in 2016 and 2 again in 2017. In 2018 and 2019, more attention was paid with 3 and 4 doctoral theses, respectively. While 1 doctoral thesis was written in 2020, 2 doctoral theses were submitted in 2021, 6 in 2022 and 4 in 2023.

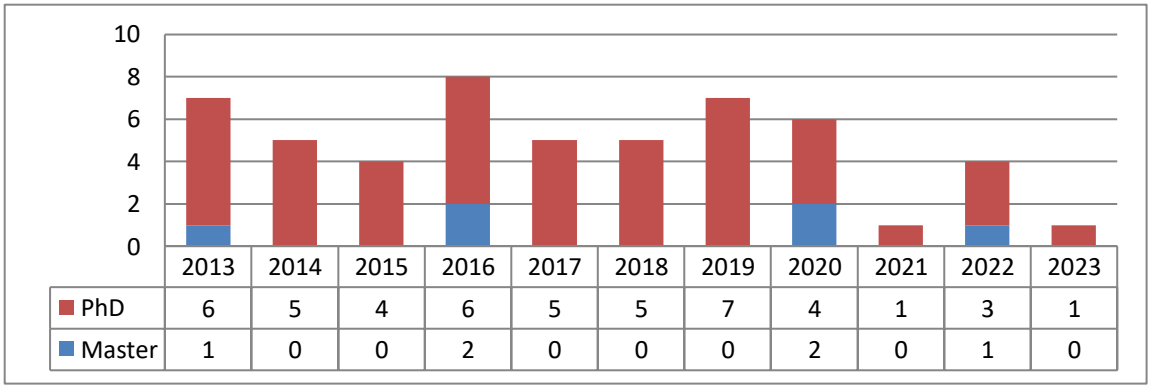


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Master	100	60	71	67	78	75	84	86	85	79	81
PhD	0	40	29	33	22	25	16	14	15	21	19

Figure 7. Proportion of theses on domestic mathematical modeling by years on the basis of their types

When the ratios of master's and doctoral theses on mathematical modeling in Turkey are examined by year, master's theses generally have a high rate, while doctoral theses take place at a lower rate. In 2013, the rate of master's theses was 100%, while the rate of doctoral theses was recorded as 0%. In 2014, master's theses increased by 60% and doctoral theses increased by 40%. In 2015, the master's thesis rate was 71% and the doctoral thesis rate was 29%. In the following years, the master's thesis rate generally varied between 60% and 100%, while the doctoral thesis rate fluctuated between 0% and 40%. Especially in 2016, the master's thesis rate was recorded as 67% and the doctoral rate as 33%. In 2019, the master's thesis rate decreased to 84% and the doctoral rate to 16%. In 2020, the master's rate was 86% and the doctorate rate was 14%, while in 2021, these rates were 85% and 15%, respectively. In 2022, the master's thesis rate increased to 79% and the doctoral thesis rate increased to 21%. As of 2023, the master's rate was recorded as 81% and the doctorate rate was 19%.

The distribution and rates of the relevant overseas theses by year in terms of their types are presented in Figure 8 and Figure 9.

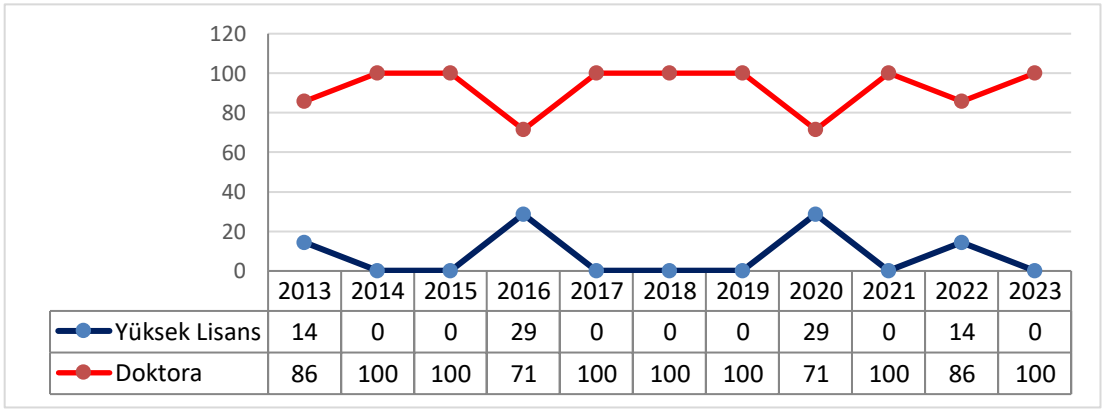


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
PhD	6	5	4	6	5	5	7	4	1	3	1
Master	1	0	0	2	0	0	0	2	0	1	0

Figure 8. Distribution of theses related to mathematical modeling abroad by years on the basis of their types

When the distribution of theses related to mathematical modeling abroad is examined by years on the basis of their types, significant fluctuations are observed in master's and doctoral theses. While there was 1 master's and 6 doctoral theses in 2013, there were no master's theses in 2014 and 2015, and doctoral theses were recorded as 5 and 4, respectively. In 2016, the number of master's theses increased to 2 and the number of doctoral theses became 6.

While there were no master's theses in 2017 and 2018, 5 doctoral theses were written in both years. In 2019, the number of doctoral theses increased to 7, and again no master's thesis was registered. In 2020, there were 2 master's and 4 doctoral theses, while only 1 doctoral thesis was written in 2021. In 2022, 1 master's and 3 doctoral theses were recorded, while in 2023 there is only 1 doctoral thesis. In this context, it can be said that the number of master's theses is low, while the number of doctoral theses increases from time to time.



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Yüksek Lisans	14	0	0	29	0	0	0	29	0	14	0
Doktora	86	100	100	71	100	100	100	71	100	86	100

Figure 9. The ratio of theses on mathematical modeling ProQuest by years on the basis of their types

When the rates of theses related to mathematical modeling abroad are examined by years on the basis of their types, the rate of master's theses was recorded as 14% and the rate of doctoral theses as 86% in 2013. In 2016, the rate of master's theses increased to 29%, while the rate of doctoral theses was determined as 71%.As of 2017, master's theses have not been completely registered; The rate of doctoral theses was observed to be 100% every year. In 2020, the master's rate increased again to 29%, and the doctoral rate was determined as 71%. In 2021, no master's thesis was written, and the rate of doctoral thesis was again 100%. In 2022, the master's thesis rate was recorded as 14% and the doctoral thesis rate was 86%, while in 2023, only doctoral thesis was included and this rate was 100%.

When the types of theses by country are examined, it is seen that master's theses are dominant in Turkey. This finding is in line with the research results of Albayrak (2017), Koç (2020) and Eryiğit (2022). This situation shows that mathematics education programs in Turkey are

structurally concentrated at the master's level and doctoral studies remain relatively limited. This trend in Turkey can be explained by the fact that master's degree is seen as the first step for students aiming for an academic career and doctoral programs are more selective and challenging (Çarıkcı and Uluğ, 2024). Nevertheless, the increase in doctoral theses in 2022 may indicate that doctoral studies are increasingly preferred. The predominance of doctoral theses in the USA shows that the academic system in the USA has a doctorate-oriented structure. In the U.S., doctoral programs are often run with more resources and support, which increases the quality and number of research. In addition, the increase observed in doctoral dissertations shows that the subject of mathematical modeling is more accepted in academic circles in the United States and studies in this field are becoming widespread. The low number of master's theses indicates a trend in the U.S. where graduate studies are directed towards the doctoral level (Barnett, Harris, & Mulvany, 2017). The fact that there is only one doctoral dissertation in Canada shows that the work done on mathematical modeling in this country is limited. The reasons for this may include Canada's education policies, support for academic research, and relatively low interest in mathematics education. However, the fact that Canada is represented by a single thesis in this field may be due to the fact that the studies are included in different databases.

These differences between countries in terms of thesis types are due to the structural features of their education systems. Since countries such as Turkey and the USA have different academic cultures, trends regarding the types and numbers of theses also differ. While master's programs are more common in Turkey, doctoral programs in the USA stand out as a central element of an academic career. These differences show how educational policies and academic priorities are shaped in different countries. The increase in the number of theses in general since 2013 shows that new research topics in the field of mathematical modeling have become popular, especially in these periods (Aztekin and Şener, 2015). During these years, the increasing interest in STEM (Science, Technology, Engineering and Mathematics) fields around the world has also encouraged studies on mathematical modeling. In particular, the development of educational technologies and the fact that modeling tools have become more accessible may have led researchers to write theses in this field.

Another data analyzed within the scope of the first research question of the research is the distribution of theses on mathematical modeling according to universities. The findings regarding the distribution of theses made in Turkey according to universities and the information of advisors at the university are presented in Table 3 and Table 4.

Table 3. Distribution of theses on mathematical modeling by universities in Turkey

University	Frequency	Percentage (%)
Ataturk University	14	9,72
Erzincan Binali Yildirim University	10	6,94
Gazi University	8	5,56
METU	8	5,56
Anadolu University	7	4,86
Hacettepe University	7	4,86
Marmara University	6	4,17
Adiyaman University	5	3,47
Balıkesir University	5	3,47
Çukurova University	5	3,47
Eskisehir Osmangazi University	5	3,47
Dicle University	4	2,78
Firat University	4	2,78
Akdeniz University	3	2,08
Kocaeli University	3	2,08
Mersin University	3	2,08
Necmettin Erbakan University	3	2,08
Ondokuz Mayıs University	3	2,08
Van Centennial University	3	2,08
Zonguldak Bulent Ecevit University	3	2,08
Bolu Abant İzzet Baysal University	2	1,39
Dokuz Eylul University	2	1,39
Erciyes University	2	1,39
Karadeniz Technical University	2	1,39
Kastamonu University	2	1,39
Nigde Omer Halis Demir University	2	1,39
Tokat Gaziosmanpasa University	2	1,39
Yildiz Technical University	2	1,39
Çukurova University	1	0,69
Abant izzet baysal University	1	0,69
Bartin University	1	0,69
Başkent University	1	0,69
Bursa Uludag University	1	0,69
Ege University	1	0,69
Gaziantep University	1	0,69
Gaziosmanpasa University	1	0,69
Gediz University	1	0,69
Giresun University	1	0,69
Istanbul University -Cerrahpasa	1	0,69
Kirsehir ahi Evran University	1	0,69
Karamanoglu Mehmet Bey University	1	0,69
Kutahya Dumlupinar University	1	0,69
Manisa Celal Bayar University	1	0,69
Pamukkale University	1	0,69
Recep Tayyip Erdogan University	1	0,69
Sivas Cumhuriyet University	1	0,69
Trabzon University	1	0,69
Sum	**144**	**100,00**

Looking at Table 3; Among a total of 144 theses, Atatürk University has the highest frequency and produced 14 theses with a rate of 9.72%. This is followed by Erzincan Binali Yıldırım University with 10 theses (6.94%), Gazi University and METU with 8 theses (5.56%) each. Among the other prominent universities, Anadolu University and Hacettepe University are at the forefront with 7 theses (4.86%) each, while Marmara University is at the forefront with 6 theses (4.17%). Dicle University and Fırat University are among the productive universities in mathematical modeling studies with 4 theses (2.78%).

The distribution of theses on mathematical modeling according to universities and academics shows that academic knowledge in this field is concentrated around certain institutions and individuals. The fact that Atatürk University ranks first among universities in Turkey with a rate of 9.72% indicates that this university has become an important academic center in the field of mathematical modeling. Relevant researches also indicate that Atatürk University is the university that produces the highest thesis in this field (Albayrak, 2017; Aries, 2020; Celebrity, 2020; Eryiğit, 2022). The fact that other universities such as Erzincan Binali Yıldırım University, Gazi University and METU have also produced remarkable studies in this field shows that the regional distribution in Turkey has begun to spread to a wide base. This distribution reveals that academic studies in the field of mathematical modeling are not limited to certain large cities, but also develop in universities in other provinces.

Table 4. Distribution of theses on mathematical modeling in Turkey by their clients

Name*	**Number of Theses**	**University**
Prof. Alper ÇİLTAŞ	7	Ataturk University
Prof. Mehmet BEKDEMİR	4	Erzincan Binali Yildirim University
Prof. Ramazan GÜRBUZ	4	Adiyaman University
Assoc. Prof. Dr. Zeynep ÇAKMAK GÜREL	3	Erzincan Binali Yildirim University
Prof. Ahmet Şükrü ÖZDEMİR	3	Marmara University
Prof. Ayten Pınar BAL	3	Çukurova University
Assoc. Prof. Dr. Şerife SEVİNÇ	3	METU
Prof. Esra BUKOVA GÜZEL	3	Dokuz Eylul University
Prof. Adnan BAKİ	3	Karadeniz Technical University
Prof. Yüksel DEDE	2	Gazi University
Assoc. Prof. Dr. Makbule Gözde DİDİDİŞ KABAR	2	Tokat Gaziosmanpasa University
Prof. Ali ERASLAN	2	Ondokuz Mayıs University
Prof. Hüseyin Bahadır YANIK	2	Anadolu University
Prof. İlhan KARATAŞ	2	Zonguldak Bulent Ecevit University
Assoc. Prof. Dr. Meryem ÖZTURAN SAĞIRLI	2	Erzincan Binali Yildirim University
Prof. Soner DURMUS	2	Abant izzet baysal University
Prof. Kemal ÖZGEN	2	Dicle University
Prof. Aytaç KURTULUŞ	2	Eskisehir Osmangazi University
Dr. Emine Aysın ŞENEL	2	Anadolu University
Prof. Dr. Pınar ANAPA SABAN	2	Eskisehir Osmangazi University

*Not all advisors are included in the ranking, but scientists who supervise more than one thesis are included.

When we look at the scientists who supervised the theses; Prof. Dr. Alper Çiltaş stands out in the field of mathematical modeling with 7 theses he has carried out at Atatürk University. Prof. Dr. Mehmet Bekdemir from Erzincan Binali Yıldırım University and Prof. Dr. Ramazan Gürbüz from Adıyaman University are thesis advisor academicians who have a say in the field with 4 theses. Assoc. Prof. Dr. Zeynep Çakmak Gürel (Erzincan Binali Yıldırım University), Prof. Dr. Ahmet Şükrü Özdemir (Marmara University), Prof. Dr. Ayten Pınar Bal (Çukurova University), Assoc. Prof. Dr. Şerife Sevinç (METU), Prof. Dr. Esra Bukova Güzel (Dokuz Eylül University) and Prof. Dr.

Adnan Baki (Karadeniz Technical University) are the scientists who contributed to the field with 3 theses.

The fact that Atatürk University in Turkey is a leader in the production of high theses on mathematical modeling shows that this university has a well-established strategic academic vision in this field and offers an attractive academic environment for researchers. Prof. Dr. Alper Çiltaş's prominence as the advisor who directed 7 theses also reflects his expertise in this field and the academic background at the university. Considering that a large part of the researcher's work has been in this field since 2019 (ATAUNI, 2024), and considering that the success of a university is directly related to the competence of individual academics in their field, Prof. Dr. Çiltaş's contribution can be considered as an important factor in explaining Atatürk University's leadership position in this field. When we look at other universities in Turkey, the fact that Erzincan Binali Yıldırım University ranks second and Prof. Dr. Mehmet Bekdemir's contributions in the consultancy process show that this university is also actively involved in the development process in the field of mathematical modeling. Considering that the researcher also did his doctoral work at Atatürk University, it can be said that the academic culture has moved to this university (EBYU, 2024). The fact that universities in smaller cities such as Erzincan have an important position in this field plays an important role in ensuring regional diversity. This may also be a reflection of the support provided to universities by regional development policies in Turkey's academic system. The fact that Gazi University and METU each produced 8 theses shows that these two universities have traditionally had a strong research history in the field of mathematics education and modeling. The well-established academic structures of both universities and the importance they attach to scientific research increase the continuity and quality of master's and doctoral theses in this field. Anadolu University and Hacettepe University have also played important roles in this process. In particular, Anadolu University's resources in the field of distance education and how this university contributes to the field of research can be examined in future research. The distribution of theses made in the USA and Canada by universities is presented in Table 5.

Table 5. Distribution of theses on mathematical modeling in the USA and Canada by universities

University	Frequency	Percentage (%)
Columbia University	8	15,09
The Ohio State University	5	9,43
North Carolina State University	2	3,77
Purdue University	2	3,77
Ohio University	2	3,77
University of Missouri	2	3,77
American College of Education	1	1,89
Boston College	1	1,89
City University of New York	1	1,89
Claremont Graduate University	1	1,89
Florida Institute of Technology	1	1,89
George Mason University	1	1,89
Harvard University	1	1,89
Kansas State University	1	1,89
Kent State University	1	1,89
Montana State University	1	1,89
Montclair State University	1	1,89
Piedmont Colage	1	1,89
San Diego State University	1	1,89
San José State University	1	1,89
Stanford University	1	1,89
The City University of New York	1	1,89
The State University of New Jersey	1	1,89
The University of Arizona	1	1,89
The University of Minnesota	1	1,89
The University of Georgia	1	1,89
The University of Iowa	1	1,89
The University of the Arts	1	1,89
The University of Utah	1	1,89
The University of Western Ontario	1	1,89
Universsıt´E de Montr´Eal	1	1,89
University of California	1	1,89
University of Florida	1	1,89
University of Massachusetts Lowell	1	1,89
University of Delaware	1	1,89
Utah State University	1	1,89
University of Nebraska	1	1,89
University of Colorado	1	1,89
Sum	**53**	**100,00**

When we look at the distribution of theses on mathematical modeling in the USA and Canada by universities, the university with the highest number is Columbia University with 8 theses and 15.09% of the theses. The Ohio State University, on the other hand, is a university that stands out with its theses on mathematical modeling with 5 theses. North Carolina State University, Purdue University, Ohio University, and the University of Missouri are on the list with 2 theses (3.77%) each. When the distribution in the USA and Canada is examined, it is noteworthy that Columbia University has the highest thesis production frequency. Columbia University's leadership in this field can be attributed to the breadth of research opportunities at prestigious

universities in the United States. Research-intensive universities, such as Columbia University, contribute to the advancement of academic studies in this field by offering ample resources to doctoral students.

Table 6. Advisor information for theses on mathematical modeling in the USA and Canada

Name	Number of Theses	University
Dr. Bruce Vogeli	5	Columbia University
Dr. Azita Manouchehri	4	The Ohio State University
Dr. Gregory Dean Foley	2	Ohio University
Dr. Lillie Richardson Albert	2	Boston College
Dr. Karen Allen Keene	2	North Carolina State University

When we look at the advisor information of the theses made in the USA and Canada; With 5 theses, Dr. Bruce Vogeli from Columbia University is in first place. She is followed by Dr. Azita Manouchehri from The Ohio State University with 4 theses. Other advisors include Dr. Gregory Dean Foley of Ohio University, Dr. Lillie Richardson Albert of Boston College, and Dr. Karen Allen Keene of North Carolina State University, each with 2 theses.

Dr. Bruce Vogeli's advisory role in this field and the abundance of citations he has received is another factor that strengthens Columbia University's position as a leader in the field of mathematical modeling. It is seen that The Ohio State University has made an important contribution in this field with 5 theses. The Ohio State University's strong academic infrastructure and studies in this field allow the university to make a name for itself in the international arena. Dr. Azita Manouchehri's prominence as the advisor who guided the 4 theses reflects the academic know-how of this university in the field of mathematical modeling. The academic experience of the advisors directly affects the quality of the theses and their impact in the field. This situation has been observed in a similar way in Turkey, and the contributions of consultants to the field appear as a determining factor for the success of the university in international platforms (Balcı, 2013).

The results of the density analysis of citations, which is another technique in revealing the relevant scientists in the theses on mathematical modeling, are presented in Figure 10.

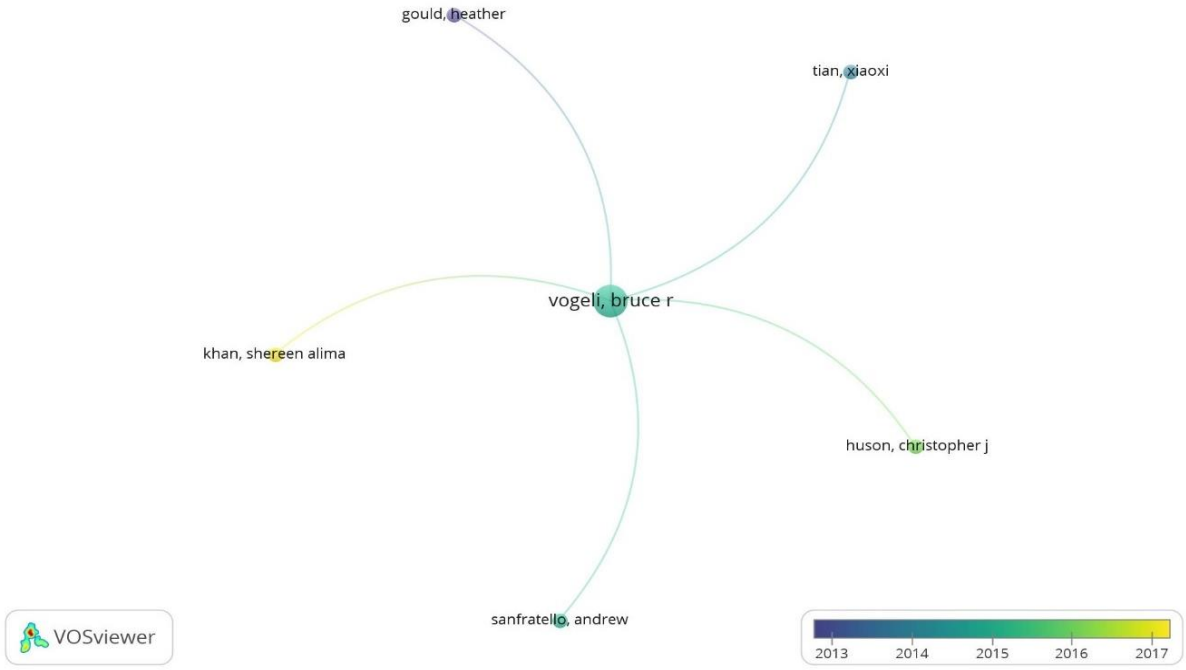


Figure 10. Density analysis results of thesis citations

As can be seen in Figure 10, when the results of the density analysis of thesis citations are examined, it is seen that the most cited researcher in this field is Dr. Bruce Vogeli.

The distribution of national and international master's and doctoral thesis topics related to mathematical modeling in the field of mathematics education and their changes by years are presented in Figure 11, Figure 12 and Table 7.

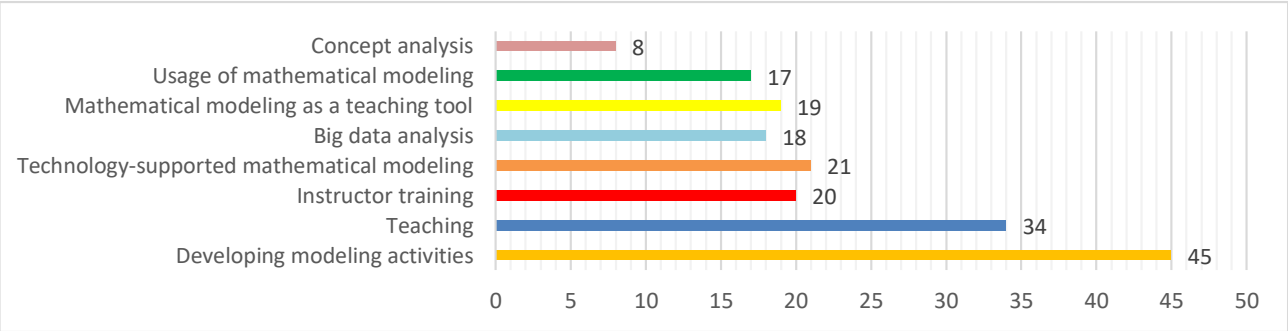


Figure 11. General distribution of thesis topics related to mathematical modeling

When we look at the distribution of mathematical modeling subjects; The most common topic was developing modeling activities, with 45 studies. This is followed by teaching with 34 studies and mathematical modeling with 27 studies. Other prominent topics include technology-assisted mathematical modeling (21 studies), tutorial training (20 studies), the use of mathematical modeling as a mathematics teaching tool (19 studies), and big data analysis (18 studies). Concept analysis, on the other hand, has been less studied and has been discussed in 8 studies.

Table 7. Changes in thesis topics related to mathematical modeling over the years

Topic	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Sum**
Developing modeling activities	3	2	2	3	3	6	5	6	5	5	5	45
Teaching	1	2	1	3	4	4	5	1	2	5	6	34
Tutorial training	1	2	1	1	2	2	4	0	0	4	3	20
Technology-enabled mathematical modeling	0	1	2	2	2	3	2	1	2	3	3	21
Big data analytics	0	1	1	1	1	2	2	1	3	3	3	18
Mathematical modeling as a mathematics teaching tool	1	1	1	2	2	2	1	1	2	3	3	19
How to use mathematical modeling	1	2	2	1	1	1	3	4	4	5	3	27
Concept Analysis	0	0	1	0	1	2	0	0	0	2	2	8
Sum												192

Between 2013 and 2023, when we look at the distribution of thesis topics by years; The topic of developing modelling activities has been studied regularly throughout all years and has been addressed in high numbers, especially in 2018 and beyond. This topic varied between 2 and 6 theses each year and was the most studied area with a total of 45 theses. The topic of teaching has received increasing attention since 2017 and reached the highest number (6 theses) in 2023. With 34 theses, this field ranks second. Tutorial training, on the other hand, exhibited a more irregular distribution, especially in 2019, while no theses were made, it remained between 2-4 theses on average in other years. This field occupies an important place with a total of 20 theses. The annual number of theses on technology-supported mathematical modeling remained constant, with the highest publication in 2018, 2022 and 2023 with 3 theses. This topic stands out with 21 theses.

The subject of big data analysis has increased since 2017, especially in recent years (2021-2023) and contributed with 3 theses every year. A total of 18 theses have been written in this field.

Mathematical modeling as a means of teaching mathematics has increased since 2017 and has been the subject of steady interest for the last three years, with 3 theses each year. A total of 19 theses have been produced in this field. The use of mathematical modeling has also attracted high attention, especially between 2019 and 2022, with a number of studies ranging from 3 to 5 theses each year, reaching a total of 27 theses.

Concept analysis, on the other hand, has been less studied compared to other topics, it has only been addressed with a few studies in 2015, 2017, 2018, 2022 and 2023, and a total of 8 theses have been produced.

The annual distribution of theses on mathematical modeling by topic and learning areas shows that academic trends and developments in this field should be carefully examined. According to the findings, the topic of developing modeling activities was the most widely studied area with 45 theses. This situation reveals the breadth and importance of the application area of mathematical modeling activities in education (Albayrak, 2017; Aries, 2020; Celebrity, 2020). Modeling activities have pedagogical value for both teachers and students, as they help teach mathematical concepts in a more concrete and understandable way (Eryiğit, 2022).

The fact that the subject of teaching ranks second with 34 studies shows that the subject of mathematical modeling has become an important focus of interest on its practical applications in education. The increasing number of theses in this field since 2017 reveals that the use of modeling in mathematics teaching is gaining more and more importance. The fact that this trend peaked in 2023 indicates that modeling in education is being adopted as a more common teaching strategy. In addition, 20 theses on teacher education support the efforts of mathematics teachers to improve their knowledge and skills in this field.

The use of mathematical modeling is another prominent topic with 27 theses. The fact that interest in this field has increased between 2019 and 2022 shows that studies questioning and investigating the effectiveness of the use of mathematical modeling in education have intensified during this period. This increase may be a result of a better understanding of the pedagogical value of modeling in teaching methods and its integration into educational processes (Sönmez, 2016). It can be said that studies on the effect of modeling methods on improving students' problem-solving skills have a share in this increase in interest. Technology-supported mathematical modeling stands out as an important research area with a total of 21 theses. The digital transformation brought about by the 21st century has led to the need to support mathematics education with digital tools and technologies (Gopal, 2020). In this context, it is seen that students who do mathematical modeling using technology better understand and apply abstract mathematical concepts (Albayrak, 2017).

The relationship between big data analysis and mathematical modeling may also have contributed to increased research in this area. The increase in the subject of big data analysis since 2017 and the continuous contribution to the field between 2021-2023 show that secondary data research such as systematic scanning, meta-analysis, meta-thematic analysis and bibliometric analysis is increasingly used. This trend can be explained by the ease of access to data brought by the digital age. Big data analysis has enriched the modeling process by providing a broader perspective in students' and teachers' understanding of mathematical processes (Donthu et al. 2021). The popularity of this field in recent years shows that data-driven research and education models will become widespread in the future.

The fact that the use of mathematical modeling has received a steady interest as a mathematics teaching tool since 2017 reveals that this method has become a permanent strategy in teaching. The fact that 19 theses have focused on this area shows that modeling is an effective method for explaining mathematical concepts. This result similarly coincides with the work of Aztekin and Şener (2015) and Albayrak and Çiltaş (2017) Modeling can be considered as a sustainable tool in mathematics teaching, as it offers students the opportunity to solve real-life problems and make sense of abstract concepts (Sönmez and Şahin, 2016; Alkan and Aydin, 2019). Less interesting topics, such as concept analysis, have been limited to only 8 theses. This shows that conceptual

analyses have not yet been fully explored in mathematical modeling or received sufficient attention in practice. New studies on concept analysis can strengthen the theoretical infrastructure of this field and add a new dimension to modeling processes.

Another method used to determine the topics and themes of the theses is the density analysis of keywords. The keyword analysis in this context is presented in Figure 12.

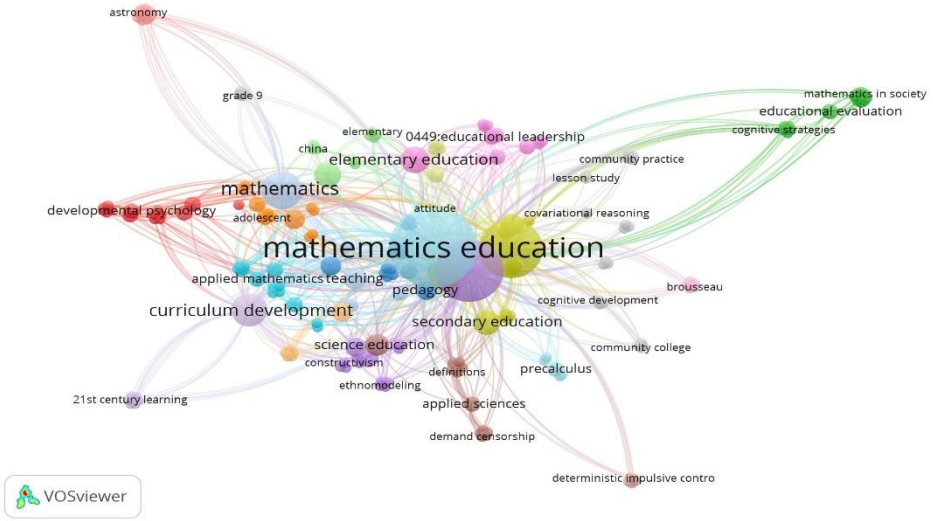


Figure 12. Density analysis of keywords in theses on mathematical modeling

Looking at Figure 12; The keywords in the theses are mathematics education, applied mathematics teaching, modeling, mathematics, curriculum development, secondary school education, cognitive strategies, mathematics in society, attitude. It is seen that he concentrates on words such as century skills and constructivism.

The total distribution of the learning areas of the theses and the changes according to the years are presented in Figure 13.

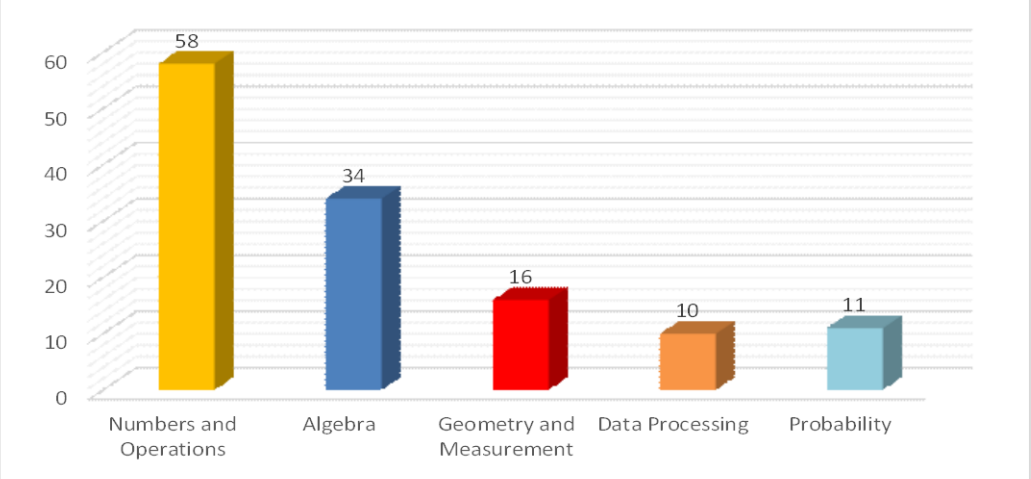


Figure 13. Distribution of learning areas of thesis topics related to mathematical modeling

Considering the distribution of learning areas; the most studied area is "Numbers and Operations" with 58 theses. This is followed by "Algebra" with 34 theses. Other areas are less studied and are represented by "Geometry and Surveying" with 16 theses, "Probability" with 11 theses and "Data Processing" with 10 theses. This distribution shows that numbers and operations are the most focused learning area.

Learning areas are divided into Numbers and Operations, Data Processing, Geometry and Measurement, Algebra and Probability in the Mathematics Curriculum (2018). The changes in the learning areas of the theses according to the total years are presented in Table 4.8.

Table 8. Changes in the learning areas of the theses over the years

Learning Area	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Sum
Numbers and Operations	1	4	3	5	4	5	9	4	5	7	11	58
Algebra	1	2	2	3	2	3	5	1	5	4	6	34
Geometry and Surveying	0	2	0	2	2	2	2	1	0	3	2	16
Data Processing	1	2	1	2	2	0	0	1	0	1	0	10
Probability	1	1	0	2	1	1	1	0	1	2	1	11

Between 2013 and 2023, the most studied area in the learning areas was *Numbers and Operations, which were studied regularly every year*, and took the highest place in total with 58 theses. In particular, in 2023, 11 theses were made in this field. Algebra ranked second with 34 theses and reached the high number of theses in 2019 and 2023. 16 theses were made in the field of Geometry and Surveying, and this subject was studied further, especially in 2014 and 2022. The field of Data Processing was examined less with a total of 10 theses, and there was a decrease in interest in 2018 and beyond. The field of probability was limited to a total of 11 theses and attracted more attention, especially in 2016 and 2022.

In the distribution made according to learning areas, the subject of "Numbers and Operations" was the most studied field with 58 theses. This shows that numbers and operations have a fundamental role in the mathematical modeling process. In particular, 11 theses produced in this field in 2023 show that the relationship between modeling activities and numerical operations is examined in more depth. Since numbers and operations are the basis of mathematical modeling, interest in this field is expected to increase." The subject of "Algebra" ranks second with 34 theses and reached a high number of theses in 2019 and 2023. Since algebraic concepts are structures that are frequently used in mathematical modeling, the intensification of studies in this field reveals the potential for modeling processes to be applied to more abstract mathematical concepts (Eryiğit, 2022).

16 theses have been produced in the field of "Geometry and Measurement", and further study of this field, especially in 2014 and 2022, shows that the relationship between geometry and modeling has been intensively examined in certain periods. Since geometry gives a visual and structural dimension to mathematical modeling, thesis studies in this field are of great importance. Teaching students about geometric concepts through modeling can be beneficial in terms of embodying abstract geometry concepts. The field of "Data Processing" stands out as a less studied subject with a total of 10 theses. The decrease in interest in this field, especially after 2018, may indicate that the place of data processing techniques in modeling processes is limited or does not attract as much attention as other fields. However, data-driven analysis and data processing techniques can be integrated with big data analysis, and it can be foreseen that this field may gain renewed attention in the future. The field of "probability" was also limited to 11 theses, and attracted more attention, especially in 2016. This finding is similar to the research results of Eryiğit (2022). Although probability and statistical modeling have an important role in mathematical modeling processes, the lack of interest in this field can be explained by the difficulty of probability theory in modeling processes or the fact that it is not used as widely as other fields.

Findings and Discussion on the Second Sub-Research Question

The analysis of the methodological features of the master's and doctoral theses related to mathematical modeling prepared in the field of mathematics education and the distribution and changes over time was carried out within the scope of the second research question.

In this context, the research method distributions of national and international master's and doctoral theses related to mathematical modeling prepared in the field of mathematics education are presented in Table 9 and Figure 14.

Table 9.Research method distributions of theses on mathematics education

Variable	Method	Number (n)	%
Research Methodology	Qualitative	121	61,42
	Hash	49	24,87
	Quantitative	27	13,71
Sum		**197**	**100,00**

Table 9 shows the distribution of research methods used in the theses. The most commonly used method was qualitative research with 61.42% and 121 theses used this method. The mixed method was applied in 49 theses with a rate of 24.87%, and quantitative research was applied in 27 theses with a rate of 13.71%.

The change in the research methods of master's and doctoral theses related to mathematical modeling prepared in the field of mathematics education by years is presented in Table 10 and Figure 14.

Table 10. Change in research methods of theses on mathematics education over the years

Research Methodology	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Sum**
Qualitative	7	8	7	11	7	9	19	8	7	21	17	121
Mixed	1	3	4	4	6	5	11	3	4	6	2	49
Quantitative	2	4	0	2	1	3	2	2	3	5	3	27

According to Table 10; The qualitative research method was used most frequently in 2019 with 19 theses, and especially increased with 21 theses in 2022. The years in which the qualitative research method was used the least were 2013 and 2015, and 7 theses were made with this method in these years. The mixed method reached the highest level with 11 theses in 2019 and was used at lower levels (3-4 theses) in the 2020-2021 period. Quantitative research, on the other hand, is the least preferred method, and it is noteworthy that 2015 was not done with any thesis. The years in which it was used the most were 2022 and 2023, and it was included in 5 and 3 theses in both years. In 2013 and 2019, this method was applied a limited number of times (2 theses).

It is seen that the qualitative research method is the most frequently used method in mathematical modeling theses. The distribution of research methods by years shows that qualitative research comes to the fore in theses. The predominant preference for qualitative research with a rate of 61.42% shows that researchers adopt an approach to obtain in-depth information and to understand the perspectives of individuals in more detail. While this contributes to the understanding and interpretation of complex processes in the field of education, the reason why it is less preferred than quantitative research is that such researches generally give general results and do not offer process-oriented analysis. In studies abroad, it is seen that the interest in qualitative methods has increased in recent years (Kelly and Lesh, 2000). Hart et al. (2009) examined the methods of studies carried out in the field of mathematics education between 1995 and 2005 and found that qualitative research methods were more widely used in this period. This finding is similar to the situation in Turkey (Göktaş et al., 2012; Albayrak, 2017; Eryiğit, 2022). Studies by Göktaş et al. (2012) also revealed that qualitative and mixed research methods are increasingly preferred, while quantitative methods have begun to lose their effectiveness. The fact that mixed methods are preferred at a rate of 24.87% shows that researchers prefer to perform more comprehensive analysis by combining the advantages of both methods. The frequent use of mixed methods, especially after 2019, as it allows both

qualitative and quantitative data to be analyzed together, reveals that this method has been preferred more recently. The fact that quantitative research is less preferred with a rate of 13.71% may be related to the fact that this method does not provide comprehensive enough information to explain abstract processes in education.

The details of the theses in terms of research models are presented in Table 11 and Figure 14.

Table 11. Distribution of research models of theses on mathematical modeling

Variable	Model	Number (n)	%
Research Model	Case Study	117	59,39
	Experimental Study	32	16,24
	Teaching Experiment	13	6,60
	Action Research	13	6,60
	Scan Model	11	5,58
	Meta-analysis	5	2,54
	Document Analysis	3	1,52
	Design-Based Model	3	1,52
Sum		**197**	**100,00**

Table 11 shows the distribution of research models used in the theses. The most common model was the case study with a rate of 59.39% and was used in 117 theses. While the experimental study ranked second with 16.24%, the teaching experiment and action research were used in 13 theses with a rate of 6.60%. Other models include the scanning model with 5.58%, the meta-analysis with 2.54%, and the document analysis and design-based model with 1.52%.

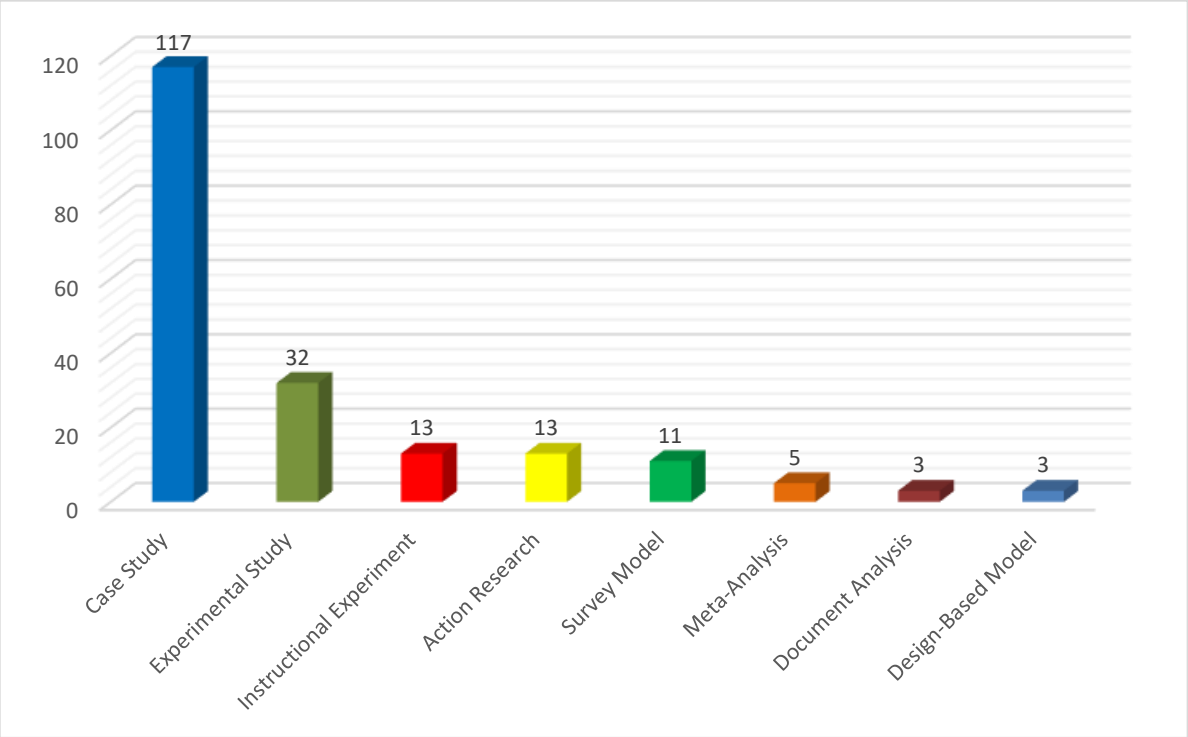


Figure 14. Distribution of theses on mathematical modeling according to research models

Details showing the change in theses in terms of research models over the years are presented in Table 12.

Table 12. Change of research models of theses on mathematical modeling by years

Research Model	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Sum**
Case Study	8	7	8	10	7	7	20	8	5	21	16	117
Experimental Study	1	6	0	2	2	4	7	2	5	3	0	32
Teaching Experiment	0	0	2	1	1	2	2	1	2	2	0	13
Action Research	0	1	0	1	1	2	1	1	0	3	3	13
Scan Model	1	0	0	1	0	2	1	1	2	2	1	11
Meta-analysis	0	0	1	0	1	0	1	0	0	1	1	5
Document Analysis	0	1	0	0	2	0	0	0	0	0	0	3
Design-Based Model	0	0	0	2	0	0	0	0	0	0	1	3

Looking at Table 12, the change in the research models used in the theses between 2013-2023 by years; The case study is the most widely used model with a total of 117 theses, reaching the highest levels of use, notably in 2019 and 2022 with 20 and 21 theses, respectively. The experimental study was applied in 32 theses and was mostly preferred in 2014 and 2019. Other models, such as teaching experiment and action research, were included in 13 dissertations; Both models were mostly preferred in 2022 and 2023. The survey model has been used in 11 theses and has shown limited use over the years. Other models, such as meta-analysis, document analysis, and design-based model, have rarely been used.

Looking at the research models, the fact that the case study stands out as the most common model with a rate of 59.39% shows the importance of in-depth examination of specific events in studies in the field of education. This finding is similar to the research results of Aztekin and Şener (2015). The case study model allows researchers to gather more detailed information and interpret the results in a more holistic way by focusing on individual cases. It can be said that the frequent use of this model is due to the fact that it provides a significant advantage in terms of making complex educational processes more understandable. The fact that experimental studies are preferred by 16.24% indicates that some studies are generally carried out in line with the need to observe the effect of certain variables. However, this method may have been less preferred due to the difficulty of creating experimental conditions in educational settings. The use of teaching experiment and action research at a rate of 6.60% emphasizes the importance of including applications for practical education in research. Information about the sample types of theses related to mathematical modeling prepared in the field of mathematics education is presented in Table 13 and Figure 19.

Table 13. Distribution of theses on mathematical modeling according to sample types

Variable	**Sample**	**Number (n)**	**%**
Sample Type	Student	123	58,57
	Teacher Candidate	42	20,00
	Teacher	30	14,29
	Research	9	4,29
	MMA*	4	1,90
	Parent	2	0,95
Total*		**210****	**100,00**

* Mathematical Modeling Activities

**Since some studies work with more than one sample group, the total number is more than the number of studies.

According to Table 13, the most common sample type is students with 58.57% and they are at the center of research in 123 theses. This was followed by the sample of pre-service teachers with 20.00%, while teachers took part in 30 theses with a rate of 14.29%. Other sample types were used at lower rates, and the research sample was preferred by 4.29%, MMA by 1.90% and parent by 0.95%.

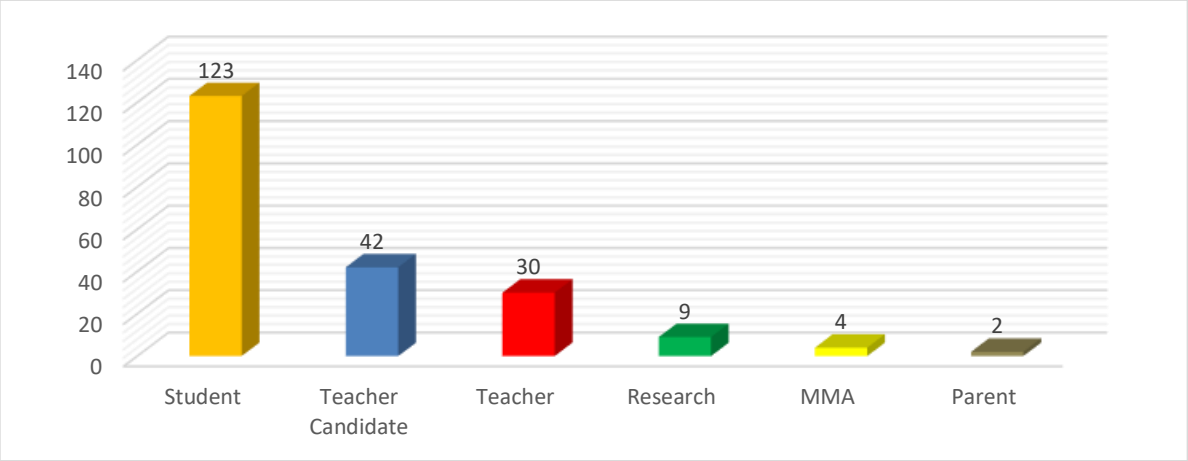


Figure 15. Distribution of theses on mathematical modeling by sample

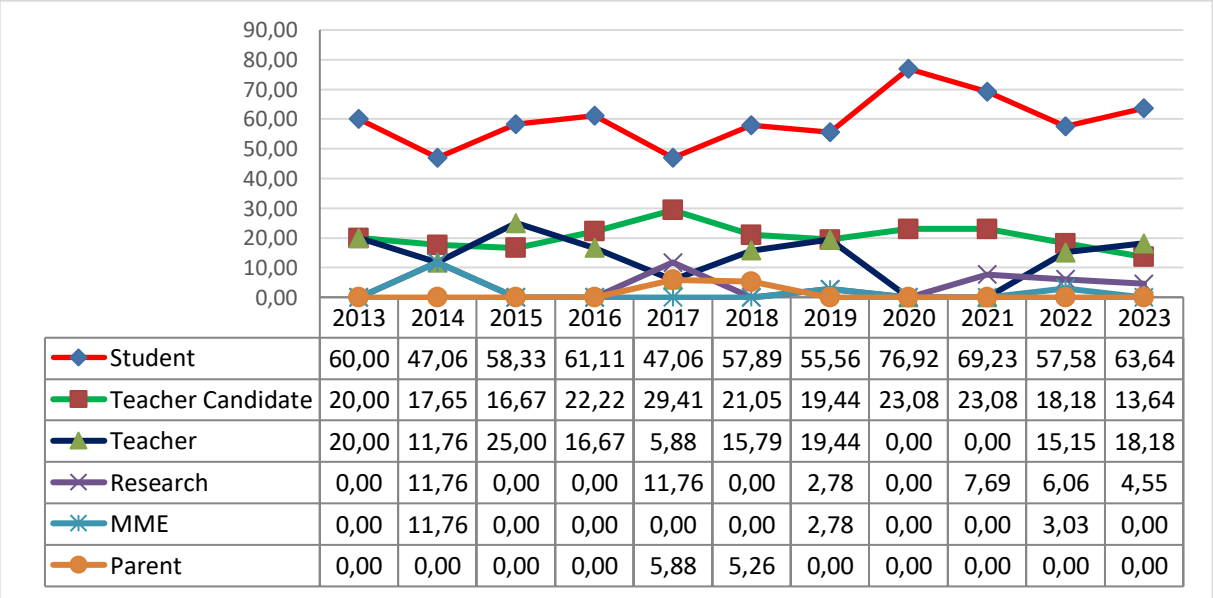
Table 14 and Figure 15 show the change of theses over the years according to sample types.

Table 14. Mathematical modeling changes of theses according to sample types in terms of years

Sample Type	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Sum*
Student	6	8	7	11	8	11	20	10	9	19	14	123
Teacher Candidate	2	3	2	4	5	4	7	3	3	6	3	42
Teacher	2	2	3	3	1	3	7	0	0	5	4	30
Research	0	2	0	0	2	0	1	0	1	2	1	9
MMA	0	2	0	0	0	0	1	0	0	1	0	4
Parent	0	0	0	0	1	1	0	0	0	0	0	2

*Since some studies work with more than one sample group, the total number is more than the number of studies.

Table 14 expresses the distribution of the sample types used in the theses by year. The sample of students reached 20 theses in 2019 and was used in a total of 123 theses. Teacher candidates were included in 5 theses in 2017 and took part in a total of 42 theses, and in 2019, they were included in 7 theses and reached the highest utilization rate. The sample of teachers was included in a total of 30 theses, and in particular, it was used in 7 theses in 2019. The research sample from other sample types was included in a total of 9 theses, and an increase was observed in this type in 2014 and 2022. The MMA sample was used in only 4 theses, the use of this type was mostly seen in 2014 and 2022. On the other hand, the parent sample was rarely preferred and was used in only 2 theses in total, and it was included in one thesis each in 2017 and 2018.



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Student	60,00	47,06	58,33	61,11	47,06	57,89	55,56	76,92	69,23	57,58	63,64
Teacher Candidate	20,00	17,65	16,67	22,22	29,41	21,05	19,44	23,08	23,08	18,18	13,64
Teacher	20,00	11,76	25,00	16,67	5,88	15,79	19,44	0,00	0,00	15,15	18,18
Research	0,00	11,76	0,00	0,00	11,76	0,00	2,78	0,00	7,69	6,06	4,55
MME	0,00	11,76	0,00	0,00	0,00	0,00	2,78	0,00	0,00	3,03	0,00
Parent	0,00	0,00	0,00	0,00	5,88	5,26	0,00	0,00	0,00	0,00	0,00

Figure 16. Distribution of theses on mathematical modeling in terms of years according to sample types

The most frequently used sample type in theses is students with 58.57%. This situation can be explained by the fact that the target audience of educational research is generally student groups. In addition, this finding reveals the importance of student-centered studies to develop educational policies and teaching strategies. This finding is in line with the research results of Albayrak (2017), Koç (2020) and Eryiğit (2022). The fact that 20.00% of teachers and 14.29% of teacher candidates are preferred shows that the role of teaching staff in education processes should be investigated more. The increase in the use of teachers and teacher candidates as a sample over the years shows that there is an increasing interest in how teaching processes can be improved.

Table 15 show the sample distributions according to the teaching levels in which the theses are concentrated.

Table 15. Distribution of theses on mathematical modeling according to the levels of education in which they are concentrated

Variable	Level	Number (n)	%
Teaching Level	Secondary school	91	46,19
	High school	50	25,38
	University	21	10,66
	Primary school	10	5,07
	Multiple Tiers*	25	12,69
Sum		**197**	**100,00**

* Studies independent of stages or with more than one stage

Table 15 shows the distribution of theses according to teaching levels. Most of the theses are concentrated at the secondary school level, with 91 theses (46.19%) constituting the highest rate. This is followed by 50 theses at the high school level (25.38%) and 21 theses at the university level (10.66%). While 10 theses (5.07%) were made at the primary school level, the number of theses covering more than one level was recorded as 25 (12.69%).

In Table 16, the distribution of theses according to the grade levels in which they are concentrated is presented.

Table 16. Distribution of theses on mathematical modeling according to the grade levels in which they are concentrated

Variable	Class	Number (n)	%
Teaching Level/Class Information	Grade 2	2	1,02
	Grade 4	8	4,06
	Grade 5	10	5,08
	Grade 6	23	11,68
	Grade 7	37	18,78
	Grade 8	21	10,66
	Grade 9	18	9,14
	Grade 10	17	8,63
	Grade 11	15	7,61
	Pre-service teachers	21	10,66
	Multiple classes	25	12,69
Sum		**197**	**100,00**

According to Table 16, the highest number of studies were done at the 7th grade level (18.78%), followed by the 8th grade (12.69%) and 6th grade (11.68%), respectively. The least work was carried out at the 2nd grade level (1.02%). In addition, a significant density (10.66%) was observed in studies covering more than one class of theses. In general, there is a significant concentration of theses on the middle school level grades, especially in the 7th and 8th grades. According to the education levels, the fact that the theses are made at the secondary school level can be associated with the fact that this period is a critical transition period in terms of education. Considering that the middle school period is a period in which students reinforce their basic academic skills and develop more abstract thinking skills, it is expected that more research will be done at this stage (Demirbilek, 2022). Although 25.38% of theses at the high school level and 10.66% at the university level indicate that research decreases with the increase in the level of education, research progress can be expanded by increasing research opportunities for these levels. Information on the sample size of the theses related to mathematical modeling prepared in the field of mathematics education is presented in Table 17 and Figure 16.

Table 16. Information on the sample size of theses related to mathematical modeling

Variable	Sample Size	Number (n)	%
Sample Size Ranges	0-10	20	10,15
	11-20	33	16,75
	21-30	49	24,87
	31-40	18	9,14
	41-50	11	5,58
	51-60	20	10,15
	61-70	16	8,12
	71-100	12	6,09
	101-200	10	5,08
	201 and above	8	4,06
Sum		**197**	**100,00**

Table 17 shows the distribution of theses in relation to sample sizes. According to the data, the most common sample group range is between 21-30 and stands out with a rate of 24.87%. This is followed by studies with a sample size between 11-20 with 16.75%, 0-10 with 10.15% and 51-60. Studies with a sample size of 201 and above are represented at the lowest rate (4.06%). In general, the majority of theses have focused on sample sizes up to 30, with a certain increase in the range of 51-60. Studies with larger samples are limited.

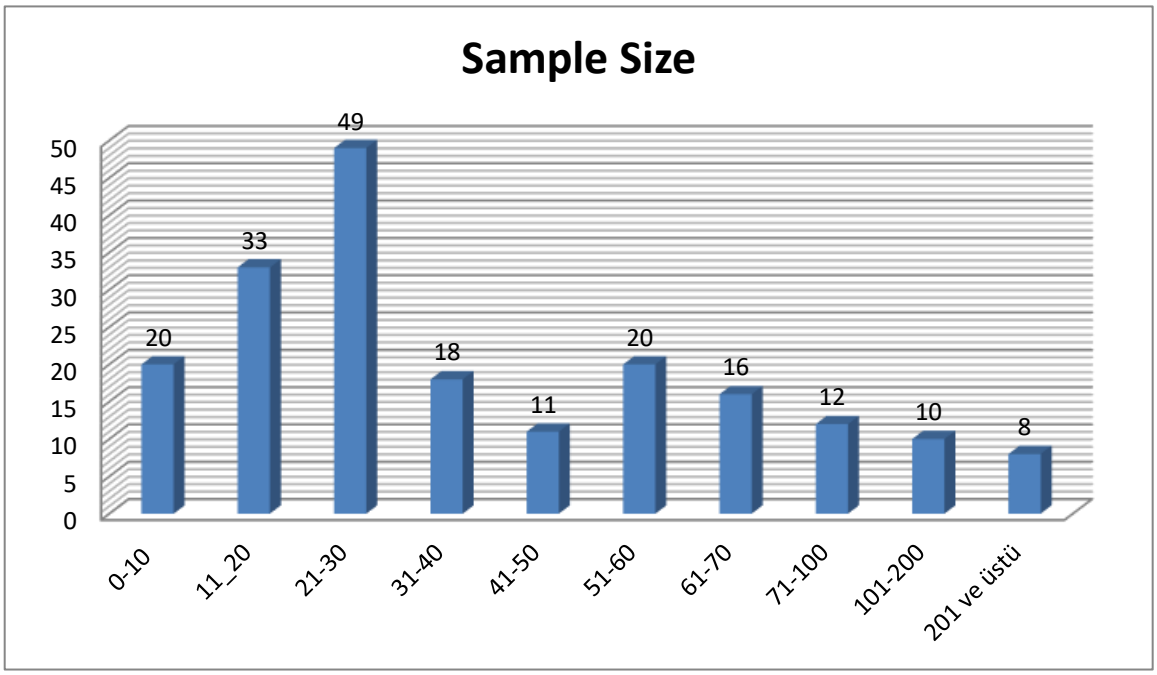


Figure 17. Distribution of theses related to mathematical modeling according to sample size

In the distribution according to sample sizes, the fact that samples in the range of 21-30 are the most common range with a rate of 24.87% shows that it is more appropriate and manageable in small-scale, experimental or action research. The examination of small groups, especially in research in the field of teaching, makes it easier to observe the learning processes of individuals in more detail. The fact that an increase in the range of 51-60 is prominent because it is the level at which more large-scale research has begun. However, the low preference (4.06%) of sample sizes of 201 and above shows that large-scale studies are less preferred due to reasons such as limited resources and time. Reasons such as the fact that researchers trying to reach this number with standardized tests face obstacles in accessing more sample groups, the inconsistency of student responses in revealing relationships, or the fact that such studies do not provide the opportunity to examine in depth can be given as reasons for the low number of high-sample group studies.

The distribution of the studies according to the data collection tools is another sub-research question. In Table 18 and Table 19, the findings of the data collection tools of the theses related to mathematical modeling prepared in the field of mathematics education are presented.

Table 18: Findings of data collection tools used in theses on mathematical modeling

Variable	Tools	Number (n)	%
Data Collection Tools	Interview form	123	37,39
	Audio and video recording	55	16,72
	Observation form	54	16,41
	Likert-type scale	25	7,60
	Written document	19	5,78
	Academic achievement test	18	5,47
	Worksheets	12	3,65
	Rubric	11	3,34
	Daily	8	2,43
	Structured girid	4	1,22
Sum		**329**	**100,00**

Table 18 presents the distribution of data collection tools used in theses. The most frequently used data collection tool was the interview form with 37.39%. Audio and video recordings rank second with a representation of 16.72%. Observation forms come third with 16.41%. Among

other data collection tools, Likert-type scale (7.60%), written documents (5.78%), academic achievement test (5.47%), worksheets (3.65%), rubric (3.34%), diary (2.43%) and structured grid (1.22%) were less preferred. In general, it is seen that qualitative data collection tools are more widely used in dissertations. In the use of data collection tools, the use of the interview form as the most common tool reflects the interest of researchers in qualitative data. The fact that interview forms are frequently preferred in order to obtain in-depth information and to evaluate the opinions of the participants in more detail can be considered as a result of the widespread use of qualitative research. The names of the standard data collection tools and the information about the researchers who developed them are presented in Table 4.19.

Table 19. Names of standard data collection tools and information about the researchers who developed them

Scale Name	Researcher	Number (n)
Mathematical Modeling Self-Efficacy Scale	Koyuncu et al. (2016)	6
Mathematical Modeling Self-Efficacy Scale	Stohlmann and Yang (2021)	3
Mathematical Modeling Attitude Scale (MMTS)	Demir et al. (2023)	3
Mathematical Modeling Skill Test	Lesh and Doerr (2003)	3
Mathematical Association Self-Efficacy Scale	Özgen and Bindak (2018)	3
Modeling Competency Assessment Rubric	Lesh and Doerr (2003)	3
Reading Comprehension Skills Test	Karabay (2015)	3
Scale for Determining Mathematical Literacy Achievement Level	PISA (OECD, 2012)	3
Problem Solving Skill Test Scoring Ruler	Silver and Cai (1996)	3
Conceptual/Transactional Approach to Problem Solving Belief Scale	NCTM (National Council of Teachers of Mathematics)	
Mathematical Problem Solving Attitude Scale	Zan and Martino (2007)	3
Technological Pedagogical Domain Knowledge Scale	Schmidt et al. (2009)	3
Critical Thinking Skill Test	Ennis and Weir (1985)	2
Attitude Towards STEM Scale	Freitag et al. (2014)	2
STEM Motivation Scale	Kier et al. (2014)	2
Critical Thinking Tendency Scale	Facione (1990)	2
Visual Literacy Self-Efficacy Perception Scale	İlhan et al. (2018)	2
Scientific Epistemological Beliefs Scale	Conley et al. (2004)	2
Mathematics Attitude Scale	Aiken (1974)	2
Mathematics Belief Scale	Schoenfeld (1989)	1
Problem Solving Skill Determination Scale (PCSS)	Heppner and Petersen (1982)	1
Van Hiele Geometry Test	Van Hiele (1957)	1

Table 19 shows the standard data collection tools and the researchers who developed these tools. Scales and tests for different skills such as mathematical modeling, problem solving, attitude and self-efficacy stand out. The Mathematical Modeling Self-Efficacy Scale developed by Koyuncu et al. (2016) is the most frequently used data collection tool in theses. In addition, the Mathematical Modeling Self-Efficacy Scale developed by Stohlmann and Yang (2021) for the same purpose has been frequently used in research. In addition, the Mathematical Modeling Attitude Scale (MMTÖ) was introduced to the literature by Demir et al. (2023), the Mathematical Association Self-Efficacy Scale by Özgen and Bindak (2018) and the Mathematical Modeling Skill Test by Lesh and Doerr (2003) and are frequently used in theses. It is seen that data collection tools for various skills such as critical thinking, STEM motivation and visual literacy are also included in the table.

It can also be supported by the finding of Aztekin and Taşpınar-Şener (2015) that descriptive analysis research is prominent in mathematical model and modeling studies. Among the quantitative analysis methods, the dependent sample t-test stands out as the most frequently used method with a rate of 7.37%. This suggests that research is generally aimed at examining

the effect of changes on the same sample. The use of the independent sample t-test at a rate of 6.09% reveals that there is an interest in making comparisons between different groups, but such studies are not as common as qualitative studies.

The fact that the Mathematical Modeling Self-Efficacy Scale developed by Koyuncu et al. (2016) is the most widely used among standard data collection tools shows that this scale is widely accepted in the academic environment in terms of both its validity and reliability. The frequent use of this scale may also be due to its methodological approach to measuring mathematical modeling abilities. Mathematical modeling includes students' ability to express and solve real-world problems in mathematical terms (Hıdıroğlu and Güzel, 2013); Thus, the widespread acceptance of a scale that can accurately assess these skills emphasizes the importance of this skill in education. Since the concept of self-efficacy refers to individuals' beliefs about accomplishing a specific task, the use of this scale stands out as a critical tool in understanding students' confidence and motivation in mathematical modeling (Arseven, 2016). The prominence of scales for different skills developed by Stohlmann and Yang (2021), Demir et al. (2023), Özgen and Bindak (2018), and Lesh and Doerr (2003) may be based on the fact that they are more effective in different cultural contexts or different groups of students, or that they focus on different aspects of mathematical modeling competence. The data collection tool of Demir et al. (2023) has adapted the scale to modern educational settings to include current educational approaches and technological integration. This diversity allows researchers and educators to have more comprehensive and flexible tools when assessing students' mathematical modeling abilities. The use of these data collection tools also increases the methodological richness and depth in mathematics education research. Data collection tools allow researchers to tailor their work to more specific research questions or hypotheses. It also reflects how scales have evolved over time, shifts in educational theories, and transformations in student needs.

Distribution of theses according to the data analysis used It is presented in Table 20.

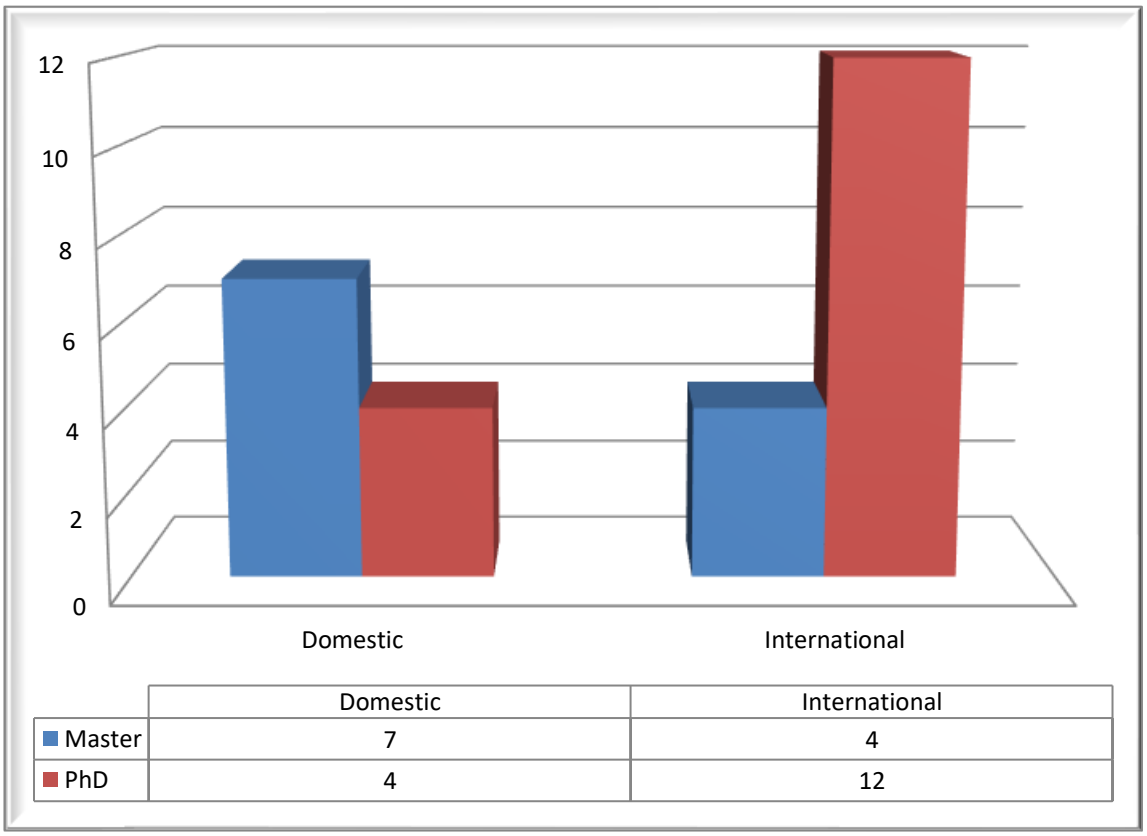
Table 20. Distribution of the types of data analysis used in the theses

Analysis Type	Analysis	Number (n)	%
Qualitative Analysis Techniques	Content analysis	102	32,69
	Descriptive analysis	68	21,79
	Thematic analysis	6	1,92
	Grounded theory	3	0,96
	Discourse analysis	3	0,96
	Meta-synthesis (thematic content analysis)	3	0,96
	Document analysis	2	0,64
Quantitative Analysis Techniques	Dependent sample t-test	23	7,37
	Independent sample t-test	19	6,09
	ANOVA	14	4,49
	Mann Whitney U test	14	4,49
	Wilcoxon Signed Ranks Test	12	3,85
	ANCOVA	10	3,21
	Simple Linear Correlation Test	6	1,92
	Pearson Correlation Test	6	1,92
	Meta-analysis	5	1,60
	Multiple linear regression	4	1,28
	Spearman's Rho correlation test	4	1,28
	Structural equation model	3	0,96
	Bidirectional ANOVA	3	0,96
	Kruskal Wallis H test	2	0,64
Sum		**312**	**100,00**

Table 20 presents the distribution of data analysis types used in theses. Among qualitative analysis techniqu

es, content analysis is the most commonly used method with 32.69% (n=102). Descriptive analysis ranked second with 21.79% (n=68), while thematic analysis was used at a rate of 1.92% (n=6). In qualitative analysis, other techniques such as embedded theory, discourse analysis, meta-synthesis and document analysis were also preferred at low rates. Among the quantitative analysis techniques, dependent sample t-test was the most commonly used method with 7.37% (n=23) and independent sample t-test was used at a rate of 6.09% (n=19). ANOVA and Mann Whitney U test were used at equal rates with 4.49% (n=14), while other techniques included Wilcoxon Signed Ranks Test (3.85%, n=12%), ANCOVA (3.21%, n=10) and correlation tests. This distribution shows that both qualitative and quantitative analysis methods are applied in a wide range of research. The fact that content analysis is the most common method in the distribution of qualitative analysis methods at a rate of 32.69% shows that it is at the forefront in parallel with data collection tools. The use of descriptive analyses at a rate of 21.79% indicates that a more general approach has been adopted in data interpretation.

The type of technology used in the mathematical modeling activities in the theses and their distribution according to the thesis types are presented in Figure 23 and Table 21.



	Domestic	International
Master	7	4
PhD	4	12

Figure 18. Distribution of technology uses in mathematical modeling activities in theses according to thesis types

Figure 23 shows the distribution of the use of technology in mathematical modeling activities according to thesis types. The use of technology is 7 in master's theses and 4 in doctoral theses. The use of technology is seen as 4 in master's theses and 12 in doctoral theses abroad. These data show that the use of technology in doctoral dissertations abroad is more common.

Table 21. Distribution of the types of technology used in the theses

Variable	Tools	Number (n)	%
Use of Technology	GeoGebra	4	14,81
	Video-based	4	14,81
	Computer-aided	3	11,11
	Video supported	2	7.41
	Online communication applications	2	7,41
	Microsoft Teams online	2	7,41
	Calculator with function	1	3,70
	Web 2.0 tools	1	3,70
	Robotics	1	3,70
	LoggerPro 3	1	3,70
	Computer algebra systems (CAS)	1	3,70
	C.H.I.C. (Implicative and Cohesive Hierarchical Classification) software	1	3,70
	Scratch	1	3,70
	TI-Nspire	1	3,70
	Desmos	1	3,70
	TinkerPlots	1	3,70
Sum		**27**	**100,00**

According to Table 21; When we look at the technology tools commonly used in theses, GeoGebra and video-based technologies come to the fore with a rate of 14.81%. These tools have been used 4 times in mathematical modeling theses. Computer-aided technologies have been included in three theses, and tools such as video-assisted and online communication applications have been used twice in theses. Other technologies, such as Microsoft Teams, Logger Pro 3, Scratch, TI-Nspire, Desmos, Tinker Plots, Web 2.0 tools, and robotics, were favored at lower rates.

Findings on the use of technology in theses reveal significant differences at the master's and doctoral levels both in Turkey and abroad. It has been observed that the use of technology is more common in master's theses (7%) and limited in doctoral theses (4%) in Turkey. This situation brings to mind the idea that the reason for the greater emphasis on the use of technology at the graduate level is the focus on more applied studies at this level. In doctoral theses, it is possible that the use of technology will be more limited as more focus can be placed on theoretical research. When the researches abroad are examined, it is noteworthy that the use of technology in doctoral theses is more common (12%) than in master's theses. This difference shows that doctoral programs abroad offer incentives to conduct more technology-oriented research and technology-related tools are more frequently integrated into research (Akgün, 2020). Among the most widely used technological tools in theses are GeoGebra and video-based technologies with a rate of 14.81%. GeoGebra is a software used for mathematical modeling and visualization and is especially preferred in mathematics education. The widespread use of this software is due to the need for visual concretization of abstract mathematical concepts in education (Arbain and Shukor, 2015). Video-based technologies, on the other hand, are widely used to support visual learning in educational processes and ensure the effective presentation of learning materials (Ay, Karadağ and Acat, 2015).

Computer-aided technologies have been frequently featured in dissertations and have been used especially in the analysis of research data and the development of teaching materials. The use of computers in such studies offers a great advantage in terms of accelerating data analysis and increasing its accuracy (Bilgin, Tatar and Ay, (2012). As an online communication and collaboration platform, Microsoft Teams supports distance learning in education and increases the interaction between students and teachers. The lower use of this platform can be explained by the fact that there is less space for research on distance learning in theses (Martin and Tapp,

2019). LoggerPro 3, on the other hand, is a software for data collection and analysis and is generally used in science education (Fabric, 2021). Scratch is a tool developed for programming and algorithm teaching, while TI-Nspire is a graphing calculator software used for mathematical calculations and data analysis. Less use of these tools may be due to the limited number of theses focused on programming and science. Desmos is used for visualization in mathematics education as an online graphic drawing tool, while TinkerPlots is a software developed for data analysis and statistics teaching (Ay, Karadağ and Acat, 2015).

Web 2.0 tools are online tools that allow students and teachers to produce and share interactive content. The fact that these tools, which are used in education, especially in collaborative learning processes, are included in the theses at lower rates may be an indication of the commitment to classical education methods. Robotic technologies, on the other hand, are used to support learning processes in engineering and STEM fields (Fabric, 2021; Demirel & Turkmen, (2023). The greater prevalence of the use of technology in doctoral dissertations abroad is associated with the greater promotion of technology integration in education in these countries (Martin and Tapp, 2019). In general, the limited use of technology in theses in our country is an indication that technology-integrated mathematical modeling approaches should be increased.

CONCLUSION and RECOMMENDATIONS

The results obtained from the research are presented in this section.

1. *Number of Theses and Distribution by Years:* Between 2013 and 2023, a total of 197 theses were examined in YÖK Thesis and ProQuest databases. A significant increase was observed in the number of theses in 2019 and 2022, and 32 theses were prepared in both years. In 2020 and 2021, there was a decrease in the number of theses. However, in recent years, there has been an increasing trend in the number of theses in the YÖK Thesis database.
2. *Distribution by Country in terms of Thesis Types: The* majority of theses in Turkey are at the master's level, and a total of 113 master's and 31 doctoral theses have been recorded. When examined by years, a significant increase has been observed in master's theses in Turkey; 21 theses were reached in 2019 and 22 in 2022. However, in 2020, this number decreased by 6 theses. In terms of doctoral theses, there was a more limited increase in Turkey, with the highest number of 6 doctoral theses in 2022. In the USA, on the other hand, doctoral dissertations are predominant; 46 doctoral and 6 master's theses were recorded. Especially in 2019, there was an increase in doctoral theses and this number reached 7. Master's theses, on the other hand, have been less studied in the U.S. and have only increased in certain years, with some increases in this area in 2020 and 2022. Only 1 doctoral dissertation was found from Canada.
3. *Distribution of Thesis Research by Universities: Atatürk* University has the highest number of theses on mathematical modeling in Turkey and produced 14 theses with a rate of 9.72%. It is followed by Erzincan Binali Yıldırım University with 10 theses (6.94%) and Gazi University and METU with 8 theses each (5.56%). Anadolu University and Hacettepe University are among the other prominent universities with 7 theses (4.86%), while Marmara University draws attention with 6 theses (4.17%). Among the prominent academicians in the consultancy processes of theses, Prof. Dr. Alper Çiltaş from Atatürk University ranked first with 7 theses, while Prof. Dr. Mehmet Bekdemir from Erzincan Binali Yıldırım University and Prof. Dr. Ramazan Gürbüz from Adıyaman University made significant contributions to the field with 4 theses.
4. The university with the highest frequency of mathematical modeling dissertations in the U.S. and Canada is Columbia University, with 8 dissertations and a rate of 15.09%. The Ohio State University ranked second with 5 theses, while North Carolina State University, Purdue University, Ohio University and University of Missouri were the other universities that contributed in this field with 2 theses each (3.77%). Among the prominent advisors in the USA and Canada, Dr. Bruce Vogeli from Columbia University

ranked first with 5 theses, followed by Dr. Azita Manouchehri from The Ohio State University with 4 theses. In the analysis of thesis citations, Dr. Bruce Vogeli stood out as the most cited researcher in this field.

5. *Distribution and Change of Subjects by Years:* The most common issue in the distribution of mathematical modeling topics was the development of modeling activities with 45 studies. This is followed by teaching with 34 studies and mathematical modeling with 27 studies. Other important topics include technology-assisted mathematical modeling (21 studies), tutorial training (20 studies), the use of mathematical modeling as a mathematics teaching tool (19 studies), and big data analysis (18 studies), while concept analysis has received less attention and has been addressed in only 8 studies.
6. Looking at the distribution by year, the issue of developing modeling activities has been studied regularly throughout all years and has been addressed in high numbers, especially after 2018. The subject of teaching, on the other hand, has shown increasing interest since 2017 and reached the highest number (6 theses) in 2023. On the other hand, while there were no theses in 2019, it remained between 2-4 theses on average in other years. This field occupies an important place with a total of 20 theses.
7. Technology-supported mathematical modeling stands out with a total of 21 theses. The subject of big data analysis has increased since 2017 and especially in recent years (2021-2023), it has contributed with 3 theses every year and produced a total of 18 theses. Mathematical modeling as a teaching tool in mathematics has gained traction since 2017 and has been the subject of constant interest for the last three years, with 3 theses each year; A total of 19 theses were produced. The use of mathematical modeling attracted high attention, especially between 2019 and 2022, and reached a total of 27 theses. Concept analysis has been less studied compared to other topics and has only been addressed in a few studies in certain years.
8. According to the results; In the distribution of learning areas, it was seen that the subject of "Numbers and Operations" was the most studied area and a total of 58 theses were produced in this field. This is followed by "Algebra" with 34 theses, with other fields receiving less attention. 16 theses in the field of "Geometry and Measurement", 11 theses in the field of "Probability" and 10 theses in the field of "Data Processing" were registered.
9. Between 2013 and 2023, the most studied topic in the learning fields is "Numbers and Operations", which is regularly studied every year, and especially in 2023, 11 theses were carried out in this field. "Algebra" ranks second with 34 theses and reached the high number of theses in 2019 and 2023. 16 theses were produced in the field of "Geometry and Measurement", and this topic was further studied in 2014 and 2022. The field of "Data Processing", on the other hand, was examined less with a total of 10 theses and interest decreased after 2018. The field of "probability" was also limited to 11 theses and attracted more attention, especially in 2016 and 2022.
10. *Distribution and change of research methods over the years*: According to the results of the research, the most common method in theses is qualitative research with 121 theses with a rate of 61.42% and was used in a total of 118 theses. While qualitative research was the most preferred with 19 theses in 2019, this number increased to 21 in 2022. The least used years are 2013 and 2015; During these years, it was applied in only 7 theses. While the mixed method was included in 49 theses with a rate of 24.87%, it reached the highest level with 11 theses in 2019 and decreased in 2020-2021. Quantitative research is the least preferred method with a rate of 13.71%; While it was not used at all in 2015, it has been featured in 5 and 3 theses in 2022 and 2023, respectively.
11. In the distribution of research models, the case study was the most common model with 59.39% and was used in 117 theses. This model reached the highest levels of utilization in 2019 and 2022, with 20 and 21 theses, respectively. The experimental study ranked

second with a rate of 16.24%; Teaching experiment and action research were included in 13 theses with a rate of 6.60%. The survey model is limited to a total of 11 theses, while other models (meta-analysis, document analysis, design-based model) are rarely used.

12. *When the distribution and changes of the sample types by years are examined* , the most common sample type is students with 58.57% and it is included in a total of 123 theses. The sample of pre-service teachers ranked second with a rate of 20.00%, and teachers took part in 30 theses with a rate of 14.29%. Other sample types were used at lower rates; The research sample was preferred by 4.29%, the MMI sample by 1.90% and the parent sample by 0.95%.

13. When the distribution by years is examined, the student sample was used the most with 20 theses in 2019. Teacher candidates started with 5 theses in 2017 and reached 7 theses in 2019. The sample of teachers took part in a total of 30 theses and came to the fore with 7 theses especially in 2019. While the research sample was used in a total of 9 theses, the MME sample was included in only 4 theses, and the parent sample was rarely preferred and was observed in only 2 theses.

14. *When the distribution of theses according to education levels is examined*, the secondary school level has the highest rate with 91 theses with 46.19%. There are 50 theses (25.38%) at the high school level and 21 theses (10.66%) at the university level. While 10 theses (5.07%) were made at the primary school level, 25 (12.69%) theses covering more than one level were recorded.

15. *According to sample sizes* , the most common range is 21-30, with a rate of 24.87%; Most theses have focused on sample sizes up to 30. An increase in the range of 51-60 is observed, while samples of 201 and above are represented at the lowest rate (4.06%).

16. *The results of the research show that the most frequently used data collection tool in these*is the interview form with 37.39%. This is followed by audio and video recordings with 16.72% and observation forms with 16.41%. Among other tools, qualitative data collection tools such as Likert-type scale (7.60%), written documents (5.78%) and academic achievement test (5.47%) were less preferred.

17. Among the standard data collection tools, the Mathematical Modeling Self-Efficacy Scale developed by Koyuncu et al. (2016) is the most widely used. In addition, scales developed by Stohlmann and Yang (2021), Demir et al. (2023), Özgen and Bindak (2018), and Lesh and Doerr (2003) are frequently included.

18. *Among the qualitative analysis methods*, the most common was content analysis (n=102) with 32.69%, while descriptive analysis was the second with 21.79% (n=68). Thematic analysis was used at a rate of 1.92% (n=6). Other qualitative analysis techniques, embedded theory, discourse analysis, meta-synthesis and document analysis were preferred at low rates.

19. *In quantitative analysis methods, the dependent sample t-test* was the most commonly used method with 7.37% (n=23); independent sample t-test followed by 6.09% (n=19). ANOVA and Mann Whitney U test were used equally at a rate of 4.49% (n=14). Other techniques include the Wilcoxon Signed Ranks Test (3.85%, n=12%), ANCOVA (3.21%, n=10), and correlation tests.

20. *Use of Technology in Theses:* According to the results of the research, the use of technology in master's theses and 4 in doctoral theses was determined as 7 in the country. Abroad, the use of technology was observed as 4 in master's theses and 12 in doctoral theses. The results show that the use of technology in doctoral dissertations abroad is more common.

21. Among the most widely used technological tools in theses are GeoGebra and video-based technologies with a rate of 14.81%. While computer-aided technologies were included in

the theses, tools such as Microsoft Teams, LoggerPro 3, Scratch, TI-Nspire, Desmos, TinkerPlots, Web 2.0 tools and robotics were used at lower rates.

According to the results of the research, suggestions were presented to the relevant stakeholders.

Suggestions for Researchers;

1. Since the upward trend of mathematical modeling theses in mathematics education continues, it is recommended to regularly follow the current number of theses in YÖK Thesis and ProQuest databases.
2. In Turkey, more studies on mathematical modeling in mathematics education should be encouraged in doctoral theses along with master's theses.
3. It is recommended that studies should be continued in universities where mathematical modeling theses are made in mathematics education, especially in leading universities such as Atatürk University, Erzincan Binali Yıldırım University, Gazi University and METU, and that doctoral students and researchers benefit from the knowledge in these universities.
4. For young researchers, it may be recommended to benefit from the experiences of academicians who stand out in this field and have consultancy experience.
5. Cooperation opportunities with prominent universities and consultants in the USA can be explored.
6. It may be recommended to conduct more studies on mathematical modeling issues, especially on topics such as developing modeling activities, teaching, technology-supported modeling and big data analysis, which have attracted high attention in recent years.
7. Due to the dominance of qualitative research and case study model in research methods, it may be recommended to increase the use of quantitative and mixed methods.
8. Due to the high concentration of students in the sample types, it may be recommended to focus on studies with teachers and teacher candidates.
9. In addition to the widespread use of interview forms in data collection tools, scale development and increasing the use of standard scales may be recommended.
10. In the use of technology, it may be recommended to encourage the use of more technological tools and software, especially in doctoral dissertations.

Advice for Teachers

1. He should prepare problems in accordance with the principle of reality.
2. It may be suggested that they integrate different modeling techniques and methods into the teaching process.
3. It may be suggested that students divide into small groups and organize discussions and problem-solving activities.
4. They are required to relate mathematical concepts to examples of daily life.
5. They may be advised to enrich their modeling processes by using digital tools and software.
6. It may be suggested that students encourage them to question assumptions and interpret conclusions.
7. They may be offered step-by-step guidance in the problem-solving process.

8. They are required to design activities according to the interests of the students and increase motivation.
9. Interdisciplinary connections can be established by integrating mathematical modeling with other courses in mathematics education.
10. Teachers should encourage students to collect and measure data.
11. They may be advised to tailor the activities to the needs of the students and the subjects they are struggling with.
12. They may be advised to use real-life problems in modeling activities.
13. It may be recommended to organize informative meetings or seminars to increase the awareness of students and parents about the importance and benefits of mathematical modeling in mathematics education.

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Üniversite Öğrencilerinde Yaşam Doyumunun Yordayıcıları Olarak Psikolojik Sağlamlık ve Benlik Saygısı

Psychological Resilience and Self-Esteem as Predictors of Life Satisfaction in University Students

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Aras, E. (2025). Üniversite Öğrencilerinde Yaşam Doyumunun Yordayıcıları Olarak Psikolojik Sağlamlık ve Benlik Saygısı *Disiplinlerarası Eğitim Araştırmaları Dergisi*, 9(20), 177-185, DOI: 10.57135/jier. 1647888

Öz

Bu çalışmada üniversite öğrencilerinin psikolojik sağlamlık ve benlik saygısı düzeylerinin yaşam doyumu ile ilişkisi incelenmiştir. Araştırmanın yöntemi olarak ilişkisel tarama yöntemi kullanılmıştır. Çalışma grubu 285 kız ve 105 erkekten oluşmaktadır. Katılımcılardan 3'ü cinsiyetini belirtmemiştir. Araştırmaya toplamda 393 kişi katılmıştır. Katılımcıların yaşları 18 ile 55 arasında değişmektedir. Veriler çevirim içi yolla ve basit rastgele örnekleme yöntemi ile toplanmıştır. Veriler Kişisel Bilgi Formu, Benlik Saygısı Ölçeği, Yaşam Doyumu Ölçeği ve Psikolojik Sağlamlık Ölçeği kullanılarak toplanmıştır. Veriler Pearson Korelasyon Katsayısı ve Çoklu Regresyon Analizi ile analiz edilmiştir. Bu araştırmada yaşam doyumu ile psikolojik sağlamlık ve yaşam doyumu ile benlik saygısı arasında pozitif yönde ve anlamlı bir ilişki bulunmuştur. Bu araştırmada cinsiyete göre psikolojik sağlamlık düzeylerinin farklılaştığı ortaya çıkmıştır. Elde edilen bulgulara göre psikolojik sağlamlık ve benlik saygısının yaşam doyumunu %28 oranında açıklamaktadır. Araştırma sonuçları psikolojik sağlamlık ve benlik saygısının yaşam doyumunun pozitifi yordayıcıları olduğunu göstermektedir.

Anahtar Kelimeler: Yaşam doyumu, psikolojik sağlamlık, benlik saygısı, üniversite öğrencileri

Abstract

This study, the relationship between psychological resilience and self-esteem levels of university students and life satisfaction was examined. Relational screening method was used as the method of the study. The study group consisted of 285 girls and 105 boys. Three of the participants did not specify their gender. A total of 393 people participated in the study. The ages of the participants ranged from 18 to 55. The data were collected online and by simple random sampling method. Data were collected using Personal Information Form, Self-Esteem Scale, Satisfaction with Life Scale and Psychological Resilience Scale. The data were analysed with Pearson Correlation Coefficient and Multiple Regression Analysis. This study, a positive and significant relationship was found between life satisfaction and psychological resilience and between life satisfaction and self-esteem. In this study, it was revealed that psychological resilience levels differed according to gender. The findings indicate that psychological resilience and self-esteem together explain approximately 28% of life satisfaction. The results of the research show that psychological resilience and self-esteem are positive predictors of life satisfaction.

Keywords: Life satisfaction, psychological resilience, self-esteem, university students

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GİRİŞ

Yaşamın ilk yıllarından itibaren birey mutlu olmak ister. Bu durum mutlu olmayı ve yaşamdan keyif almayı birey için önemli bir ihtiyaç haline getirmiştir. Yaşam doyumu olarak ifade edilen bu durum bireyin yaşamının sadece bir yönü ile değil, yaşamın bütün yönleriyle doyum sağlamayı ifade eder. Chen vd., (2017) yaşam doyumunu bireyin yaşamdan aldığı genel doyumun bilişsel olarak değerlendirilmesi şeklinde tanımlamaktadır. Yaşam doyumu kavramı alanyazına Neugarten, Havighurst ve Tobin (1961) tarafından kazandırılmıştır. Yaşam doyumu bireyin yaşamdan duyduğu memnuniyet şeklinde ifade edilir (Bradley & Corwyn, 2004). Başka bir ifadeyle yaşam doyumu, bireyin kazanımları ile yaşama dair beklentilerinin birbiri ile uyumlu olması olarak tanımlanır. Bireyin elde ettikleri ile yaşamdan beklentilerinin uyuşması halinde yaşamdan çok fazla doyum sağladığı söylenebilir. Yaşam doyumunun bireyin hem ruhsal sağlığına hem de sosyal ilişkilerine olumlu etkisi vardır. Başka bir tanımda ise yaşam doyumu bireyin beklentilerinin karşılanması sonucunda aldığı memnuniyettir (Myers & Diener, 1995). Yaşam doyumu yaşamın birçok yönünü kapsayan bir durumdur. Genel olarak yaşamın tümüne ilişkin doyumu kapsar. Neugarten vd., (1961) yaşam doyumunu mutluluk ve moral durumları gibi bireyin iyilik halinde olması olarak açıklamaktadır. Alan yazındaki tanımlar incelendiğinde yaşam doyumu kavramının bireyin yaşamdan aldığı mutluluk veya memnuniyet olarak değerlendirilebilir.

Alan yazın incelendiğinde yaşam doyumunun birçok değişkenle ilişkili olduğu belirtilmektedir. Bu değişkenlerden bir tanesi psikolojik sağlamlıktır. Nitekim Ülker-Tümlü ve Recepoğlu (2013) psikolojik sağlamlığın artması sonucunda yaşam doyumunun arttığını ortaya koymuştur. Benzer şekilde Uz-Baş ve Yurdabakan (2017) psikolojik sağlamlığın yaşam doyumunu arttırdığını ifade etmektedir. Psikolojik sağlamlık insan yaşamında önemli bir yere sahiptir. Masten'e (2001) göre psikolojik sağlamlık, bireyin yaşamında bir tehlike ile karşılaşması durumunda uyum göstermesi olarak tanımlanmaktadır. Psikolojik sağlamlık düzeyi yüksek olan bireylerin yaşam doyumunun yüksek olduğu ortaya çıkmıştır (Youngblom et al., 2014). Buna göre bireyin karşılaştığı sorunlar ile başa çıkması yaşamından aldığı memnuniyeti artırdığı söylenebilir. Alanyazındaki araştırmalar psikolojik sağlamlık düzeyi ile yaşam doyumu arasında anlamlı ve pozitif bir ilişki olduğunu göstermektedir (Martinez-Marti & Ruch, 2017; Şahin-Baltacı ve Karataş, 2015; Kaya & Odacı, 2024). Psikolojik sağlamlık bireyin yaşadığı sorunlarla baş etmesine yardım eder. Doğan (2015) psikolojik sağlamlığı bireyin zorluklarla baş edebilme çabası olarak ifade etmektedir. Psikolojik sağlamlık bireyin ruhsal sorunlardan, olumsuz yaşantılardan, duygusal problemlerden ya da kaygı verici durumlardan kurtulması, kendini toporlaması ve sorunları ile başa çıkmasıdır (Doğan, 2015). Psikolojik sağlamlık düzeyi yüksek olan bireyin olumsuz durumlarla baş edebilme yeterliğine sahip olduğu söylenebilir. Ülker-Tümlü ve Recepoğlu (2013) bireyin psikolojik sağlamlığı yüksek oduğunda daha az duygusal ve psikopatolojik sorun yaşadığını, kendisi ve çevresiyle uyumlu bir yapıda olduğunu belirtmektedir. Buna göre psikolojik sağlamlık arttıkça bireyin yaşamından duyduğu memnuniyetin arttığı söylenebilir.

Yaşam doyumu ile ilişkili diğer bir değişken benlik saygısıdır. Benlik saygısı bireyin kendisine ilişkin sahip olduğu olumlu veya olumsuz algı olarak tanımlanabilir. Bireyin kendini değerlendirme biçimi yaşam doyumunu artırmaktadır. Yapılan çalışmalar bu durumu desteklemektedir. Nitekim Yıldız ve Baytemir (2016) yaşam doyumu ile benlik saygısı düzeyinin ilişkili olduğunu, benlik saygısı olumlu olduğunda yaşam doyumunun arttığını ortaya koymuştur. Çivitci (2007) benlik saygısının birçok kültürde yaşam doyumunu etkileyen önemli bir kavram olduğunu belirtmektedir. Benlik saygısı bireyin benliğini korumada, toplumsal ilişkilerini belirlemede rol oynamaktadır. Benlik saygısı yüksek olan bireyler kendini seven, çevresinde güvenilir bir kişi olduğunu düşünen ve yeteneklerinin farkında olan bireylerdir. Bu açıdan Waldron vd., (2018) benlik saygısı yüksek olanların daha az ruhsal sorun yaşadığını belirtmektedir. Bu durum benlik saygısının koruyucu bir işlevi olduğunu göstermektedir. Ye vd., (2012) benlik saygısının bireylerin ruh sağlığını koruduğunu ve öznel

iyi oluşu pozitif yönde etkilediğini ortaya koymuştur. Başka bir araştırmada ise benlik saygısının azalması bireyin ruh sağlığını olumsuz etkilediği, davranış problemlerine yol açtığı belirtilmiştir (Marshal et al., 2013). Bu sonuçlar benlik saygısı ile yaşam doyumunun anlamlı bir ilişkiye sahip olduğunu göstermektedir.

Üniversite yaşamı bireyde birçok değişikliğin ortaya çıktığı bir dönemdir. Birey bu dönemde sosyal, psikolojik ve fiziksel değişimler yaşamaktadır. Üniversite öğrencileri yaşadığı bu değişimlere ilişkin uyum sağlamaya çalışmakta ve aynı zamanda üniversite öğrenimine devam etmektedir (Aras ve Alver, 2017). Bu açıdan üniversite öğrencilerinin ruh sağlığına yönelik yapılan çalışmalar önem arz etmektedir (Santrock, 2014). Üniversite öğrencileri bu dönemde önemli sorunlar yaşamaktadır. Aileden ayrılma, farklı bir sosyal çevrede bulunma, akademik çalışmalar, barınma gibi sorunlarla karşı karşıya gelmektedir. Bu durum öğrencilerin yaşam doyumunda bir değişime yol açabilir. Üniversite yaşamının zorlukları ve bu dönemde yaşanan sorunlar dikkate alındığında üniversite öğrencilerinin yaşam doyumu ve psikolojik sağlamlık düzeylerinin incelenmesi önemli görülmektedir. Bu açıdan bakıldığında üniversite öğrencilerinin akademik başarıları, sosyal ilişkileri, üniversiteden beklentileri, fiziksel olarak kendilerini yeterli bulma gibi durumlar yaşam doyumunu artırmada etkilidir (Tanhan, 2019). Yaşam doyumu yüksek olan bireylerin öz-yeterliklerinin arttığı ve başarılarının yüksek olduğu ortaya çıkmıştır (Aydıner, 2011; Çivitci, 2012). Bu durum öğrencilerin yaşam doyumlarını arttırmada etkili olmaktadır. Bu kapsamda yaşam doyumu ile ilişkili olabilecek değişkenlerin belirlenmesi, yaşam doyumunu daha kapsamlı bir şekilde ele almaya ve üniversite öğrencilerinin yaşamını iyileştirici ve önleyici çalışmalara katkı sağlayacağı düşünülmektedir.

Alan yazında yaşam doyumu, psikolojik sağlamlık ve benlik saygısı değişkenlerini birlikte araştıran çalışmaların sınırlı olması göze çarpmaktadır. Bu açıdan mevcut çalışma ile alanyazında yapılan çalışmalara katkı sağlaması ve alan yazına alternatif bir çalışma olması beklenmektedir. Bu çalışma yaşam doyumunun psikolojik sağlamlık ve benlik saygısı ile birlikte incelendiği çalışmalara ihtiyaç olduğunu göstermektedir. Aynı zamanda üniversite yaşamının zorlukları dikkate alıdığında, araştırma sonuçlarının öğrencilerin yaşam doyumlarını artırmada kullanılabileceği öngörülmektedir. Bu çalışmada üniversite öğrencilerinde yaşam doyumunun psikolojik sağlamlık ve benlik saygısı ile ilişkisi incelenmiştir. Üniversite öğrencilerinin yaşam doyumu ile psikolojik sağlamlık ve benlik saygısı düzeylerinin incelenmesi hem önleyici hem de koruyucu ruh sağlığı hizmetlerine katkı sağlayacağı değerlendirilmektedir. Bu kapsamda çalışmanın amacı psikolojik sağlamlık ve benlik saygısı değişkenlerinin yaşam doyumunu yordayıp yordamadığını ortaya koymaktır.

YÖNTEM

Bu araştırmada psikolojik sağlamlık, benlik saygısı ve yaşam doyumu arasındaki ilişki olup olmadığını belirlemek amacıyla ilişkisel tarama yöntemi kullanılmıştır. İlişkisel tarama modeli en az iki ya da ikiden fazla değişkenin birbiri ile ilişkisini ortaya koyan araştırma modelidir (Karasar, 2016). Veriler basit rastgele örnekleme yöntemi ile elde edilmiştir. Basit rastgele yönteminde evren genel bir liste şeklinde belirlenir ve evrende bulunan herbir kişinin örnekleme dâhil olma şansı birbirine eşittir. Bu çalışmada araştırmanın etik onayı alındıktan sonra veriler toplanmıştır. Bu araştırmanın verileri çevrimiçi ortamda Google Form aracılığıyla toplanmıştır. Araştırmaya katılmaya gönüllü olan katılımcılardan onam formu alınmıştır. Öğrencilere verilerin gizli kalacağı ve sadece mevcut araştırma kapsamında kullanılacağı konusunda garanti verilmiştir.

Katılımcılar

Araştırmanın evrenini 2023-2024 eğitim-öğretim yılında Iğdır Üniversitesi'nde eğitimine devam eden yaklaşık 10.000 öğrenci oluşturmaktadır. Araştırmanın çalışma grubu ise 285 kız ve 105 erkekten oluşmaktadır. Katılımcılardan 3'ü cinsiyetini belirtmemiştir. Araştırmaya toplamda 393 kişi katılmıştır. Katılımcıların % 72.5' kadın, % 26.5'i erkektir. Katılımcıların yaşları 18 ile 55 arasında değişmektedir. Katılımcıların % 25.5'ini 1.sınıf (100 kişi), % 22.9'unu

2.sınıf (90 kişi), % 23.7'sini 3.sınıf (93 kişi) ve % 28'sini 4.sınıf (110 kişi) öğrencileri oluşturmaktadır.

Veri Toplama Araçları

Kişisel bilgi formu: Katılımcıların cinsiyet, yaş, sınıf düzeyi vb.demografik özellikleri ile ilgili bilgi toplamak için araştırmacı tarafından oluşturulmuştur.

Yaşam doyumu ölçeği: Ölçek Diener vd., (1985) tarafından geliştirilmiş ve Dağlı ve Baysal (2016) tarafından Türkçe uyarlaması yapılmıştır. Ölçek beş maddeden oluşan 5'li Likert tipindedir. Cronbach Alpha katsayısı 88; test-tekrar test güvenirlik katsayısı .97 olarak hesaplanmıştır. Ölçekte ters puanlanan madde bulunmamaktadır. Bu araştırmada ise Cronbach Alpha katsayısı .87 olarak bulunmuştur.

Kısa psikolojik sağlamlık ölçeği: Psikolojik Sağlamlık Ölçeği 6 maddeden oluşmaktadır. Ölçekte 2, 4. ve 6. maddeler ters puanlanmaktadır. Ölçek Smith vd., (2008) tarafından geliştirilmiştir. Türkçe'ye Doğan (2015) tarafından çevrilmiştir. Ölçeğin Cronbach Alpha katsayısı .83 olarak bulunmuştur. Bu araştırmada Cronbach Alpha katsayısı .72 olarak hesaplanmıştır. Ölçekten alınan yüksek puan psikolojik sağlamlık düzeyinin yüksek olduğunu göstermektedir.

Benlik saygısı ölçeği: Benlik Saygısı Ölçeği 16 maddeden oluşan 5'li likert tipi bir ölçektir. Tafarodi ve Swan (2001) tarafından geliştirilen ölçek, Doğan (2011) tarafından Türkçe'ye uyarlaması yapılmıştır. Ölçek kendini sevme ve özyeterlik alt boyutlarından oluşmaktadır. Ölçekte 1, 6, 7, 8, 10, 13, 15, 16 maddeleleri olumsuz ifadeler içerdiği için ters puanlanır. En düşük 16, en yükse 80 puan alınan ölçekte puan arttıkça benlik saygısını yükseldiğine işaret etmektedir. Ölçeğin tamamı ve altboyutları için Cronbach Alpha katsayısı sırasıyla .88, .86 ve .79 olarak tespit edilmiştir. Bu araştırmada ise Cronbach Alpha katsayısı ölçeğin tamamı için .85, kendini sevme altboyutu için .82 ve özyeterlik altboyutu için .67 olarak hesaplanmıştır.

Verilerin Analizi

Bu araştırmada öncelikle verilerin çoklu doğrusal regresyon analizine uygunluğu incelenmiştir. Bu kapsamda veri setinin normalliği ile doğrusallığı hesaplanmıştır. Skewness ve kurtosis katsayı değerleri incelenmiş ve -1.5 ve +1.5 aralığında olduğu bulunmuştur. Bu değerlerin normal aralıkta olduğu söylenebilir (Tabachnick & Fidell, 2019). Ayrıca örneklem büyüklüğünün regresyon analizi için yeterli büyüklükte olduğu söylenebilir. Regresyon analizinin yapılabilmesi için değişkenler arasında yüksek düzeyde ilişki bulunmaması gerekir. Çoklu bağıntının olması, regresyon modelini olumsuz etkilemektedir (Montgomery, Peck &Vining, 2013). Değişkenler arasındaki korelasyon katsayıları incelendiğinde .80 üzerinde korelasyon olmaması, VIF değerinin 10'da büyük olmaması (VIF≤ 10) ve tolerans değerinin .10 üzerinde olması çoklu bağıntı (multicollinearity) probleminin olmadığını gösterir (Çokluk vd, 2012). Bunun dışında oto korelasyon (hata terimleri arasında ilişki) değerleri incelenmiş ve Durbin-Watson değerinin 1 ile 3 arasında olduğu ortaya çıkmıştır (Field, 2018). Verilerin dağılımı mahalanobis uzaklık değerleri hesaplanarak incelenmiş ve normallik ile doğrusallık değerlerine aykırı bir değer bulunmamıştır. Bu sonuçlara göre veri setinin çoklu doğrusal regresyon analizi yapabilmek için yeterli olduğu görülmektedir. Araştırma verileri çoklu doğrusal regresyon yöntemi ile analiz edilmiştir (Büyüköztürk, 2011).

BULGULAR

Araştırmanın bu bölümünde bulgulara yer verilmiştir. Tablo 1'de değişkenlere ilişkin puan ortalamaları, standart sapmaları, çarpıklık ve basıklık değeleri ile ilgili bilgiler verilmiştir.

Tablo 1. Değişkenlere ilişkin puan ortalamaları, standart sapmaları, çarpıklık ve basıklık değerleri

Değişkenler	X	sd	Skewness	Kurtosis
Psikolojik Sağlamlık	19.05	4.94	.95	.167
Yaşam Doyumu	13.48	4.84	.160	-.548
Benlik Saygısı	56.29	10.31	-.018	-.195

Tablo 1. incelendiğinde katılımcıların psikolojik sağlamlık puan ortalamaları 19.05, standart sapması 4.94; yaşam doyumu puan ortalamaları 13.48, standart sapması 4.84; benlik saygısı puan ortalamaları 56.29, standart sapması 10.31 olarak hesaplanmıştır. Verilere ilişkin çarpıklık ve basıklık değerlerinin normal aralıkta olduğu görülmektedir. Bu araştırmada normal dağılıma ilişkin çarpıklık ve basıklık değerleri -1.5 ile +1.5 aralığı ölçüt alınmıştır (Tabachnick & Fidell, 2019). Bu sonuçlar verilerin çoklu regresyon analizine uygun olduğu şeklinde yorumlanabilir. Tablo 2'de yaşam doyumu, psikolojik sağlamlık ve benlik saygısına ilişkin korelasyon katsayıları verilmiştir.

Tablo 2. Yaşam Doyumu, Psikolojik Sağlamlık ve Benlik Saygısına ilişkin korelasyon katsayıları

	1	2	3
Psikolojik Sağlamlık	1	.455**	.365**
Benlik Saygısı		1	.504**
Yaşam Doyumu			1

**p< .001

Tablo 2. incelendiğinde psikolojik sağlamlık, yaşam doyumu ve benlik saygısının birbiri ile anlamlı ve pozitif ilişkili olduğu bulunmuştur. Benlik saygısı ile yaşam doyumu arasındaki ilişki anlamlı ve pozitif olduğu gözlenmiştir. Çalışmanın bu bölümünde verilere ilişkin çoklu regresyon analizi sonuçları yer almaktadır. Çoklu doğrusal regresyon analizi sonuçları Tablo 3'te verilmiştir.

Tablo 3. Yaşam Doyumunun Yordanmasına İlişkin Çoklu Doğrusal Regresyon Analizi Sonuçları

Değişken	**B**	**Standart Hata**	**Beta**	**t**	**p**
Sabit	.807	1.186			
Psikolojik sağlamlık	.160	.048	.163	3.332	.000**
Benlik saygısı	195	.0123	.415	8.505	

*$R=.53, R^2 = .28, F_{(2,390)} = 74.873$, **p< .001 Bağımlı Değişken: Yaşam Doyumu*

Tablo 3. incelendiğinde psikolojik sağlamlık ve benlik saygısı değişkenlerinin yaşam doyumunun anlamlı bir yordayıcısı olduğu söylenebilir (p<.001). Bu sonuçlara göre psikolojik sağlamlık ve benlik saygısı değişkenlerinin yaşam doyumunun %28'ini açıkladığı görülmektedir. Başka bir deyişle psikolojik sağlamlık ve benlik saygısı yaşam doyumunun pozitif yordayıcıları olduğu saptanmıştır.

TARTIŞMA, SONUÇ ve ÖNERİLER

Bu çalışmada psikolojik sağlamlık ile benlik saygısının yaşam doyumu ile ilişkisi incelenmiştir. Araştırma sonuçları psikolojik sağlamlık ile benlik saygısının yaşam doyumunu etkileyen iki önemli değişken olduğunu ortaya koymuştur. Sonuçlar yaşam doyumunu ilk sırada psikolojik sağlamlık, daha sonra benlik saygısı değişkeninin yordadığını göstermektedir. Bu araştırmada yaşam doyumunun psikolojik sağlamlık ile pozitif bir ilişkisi olduğu bulunmuştur. Buna göre üniversite öğrencilerinde psikolojik sağlamlık arttıkça yaşam doyumu artmaktadır. Alan yazında bu sonucu destekleyen çalışmalara rastlanmaktadır (Abolghasemi & Varaniyab, 2010; Yang et al., 2016; Reyes et al., 2019). Nitekim Altuntaş ve Genç (2020) psikolojik sağlamlık düzeyi yüksek olanların yaşamdan duyduğu memnuniyetin arttığını belirtmiştir. Benzer şekilde Labrague'e (2021) göre psikolojik sağlamlık olumsuz yaşam koşullarında bireyin yaşam doyumunu artırıcı bir etkiye sahiptir. Bununla birlikte psikolojik sağlamlığın bireyin dayanıklılığını arttırdığı ifade edilmektedir (Duman vd., 2024). Üniversite dönemi öğrencilerin kendini geliştirebildiği, karşılaştığı güçlüklerle başa çıkmaya çalıştığı bir dönemdir. Bu dönemde öğrencilerin psikolojik sağlamlık düzeylerinin yeterli düzeyde olması beklenir. Bu açıdan üniversite öğrencilerinin psikolojik sağlamlıklarının yüksek olması çok önemlidir. Psikolojik sağlamlık düzeyi yüksek olan bireylerin aynı zamanda stresle baş edebilen, duygularını kontrol eden ve öz saygısı yüksek olan birey olmaları beklenmektedir. Bu açıdan yaşam doyumlarının da yüksek olması beklenen bir durumdur. Bu sonuçlara göre psikolojik sağlamlığın yaşam doyumunu yordayan önemli bir faktör olduğu söylenebilir. Alan yazında psikolojik sağlamlığın yaşam doyumunu yordadığını ortaya koyan başka çalışmalar da bulunmaktadır (Durak, 2021). Alibekiroğlu vd., (2018) üniversite öğrencileri üzerinde yaptığı çalışmada psikolojik sağlamlığın yaşam doyumunu yordadığını ifade eder. Bu sonuçların mevcut araştırma bulguları ile benzerlik gösterdiği görülmektedir. Bu çalışmada erkeklerin psikolojik sağlamlık düzeylerinin yüksek olduğu ortaya çıkmıştır. Alanyazında bu sonucu destekleyen çalışmalar bulunmaktadır (Eser vd., 2023). Psikolojik sağlamlık düzeyinin erkeklerde fazla olması toplumda erkeklerin güçlü olması gerektiği düşüncesinden kaynaklandığı söyenebilir. Bunun yanısıra alanyazında farklı sonuçlar ortaya koyan çalışmalar da vardır. Bu araştırma sonuçları psikolojik sağlamlık düzeyinin cinsiyete göre değişmediğini göstermektedir. Örneğin; Işık ve Çelik (2020) yaptığı çalışmada cinsiyete göre psikolojik sağlamlık düzeylerinin farklılılık göstermediğini belirtmiştir. Bu bulguyu destekleyen başka çalışmalar da yapılmıştır (Bolat, 2013; Aydın ve Egemberdiyeva, 2018). Alanyazında farklı sonuçlar ortaya koyan çalışmaların olduğu görülmektedir. Buna göre, cinsiyet faktörü farklı araştırma gruplarıyla ve farklı kültürlerde yer alan örneklem üzerinde tekrar incelenebilir.

Bu araştırmada benlik saygısının yaşam doyumu ile pozitif ilişkisi bulunmuştur. Benlik saygısı yükseldikçe bireylerin yaşam doyumlarında artış meydana gelmektedir (Dilmaç ve Ekşi, 2008). Benlik saygısı yüksek olan bireyler kendisiyle ilgili olumlu değerlendirmeleri yaptığı dikkate alındığında, kendine ilişkin olumlu düşüncelere sahip olmaları yaşamdan duyduğu memnuniyeti artırdığı söylenebilir. Alan yazında incelendiğinde benlik saygısı ile yaşam doyumunun ilişkili olduğunu ortaya koyan çalışmalar bulunmaktadır. Bu çalışmadaki sonuçlar da alanyazındaki çalışma sonuçları ile örtüşmektedir. Nitekim Çeçen (2008) ile Diener vd., (2009) benlik saygısının yaşam doyumu ile ilişkisini ortaya koymuştur. Bu çalışmalarda benlik saygısı ile psikolojik sağlamlık arasında bir ilişki olduğu görülmektedir. Alan yazındaki çalışmalar incelendiğinde mevcut bulgunun desteklendiği görülmektedir. Yörük-Topuz ve Cihangir-Çankaya (2022) benlik saygısı arttıkça psikolojik sağlamlık düzeyininin arttığını ortaya koymuştur. Benzer şekilde benlik saygısı psikolojik sağlamlığı yordayan önemli bir değişken olarak belirtilmiştir (Balgiu, 2017). Mevcut araştırma sonuçlarına göre üniversite öğrencilerinde benlik saygısının yüksek olması psikolojik sağlamlık düzeylerini pozitif yönde etkilemektedir. Buna göre benlik saygısının yüksek olması bireyin karşılaştığı güçlüklerle baş edebilmesini sağlayabilir. Öğrencilerin kişisel gelişimlerinin desteklenmesi benlik saygısını yükseltebilir. Bu durumun öğrencilerin psikolojik sağlamlık düzeylerini artırabileceği

düşünülmektedir. Yapılan bir araştırmada benlik saygısı yüksek olan bireylerin olumsuz bir durum karşısında diğer bireylere göre daha dayanıklı olduğu, zorlu durumlarla daha kolay baş edebildiği görülmektedir (Smith & Dust, 2006). Bu araştırma bulgularının alanyazına önemli katkılar sağlayacağı söylenebilir. Ancak araştırmanın bazı sınırlılıkları da bulunmaktadır. Bu araştırmanın sadece bir devlet üniversitesinde yapılması bir sınırlılık olarak kabul edilebilir. Araştırma daha büyük örneklem grupları üzerinde tekrarlanabilir. Ölçme araçlarının öz-bildirime dayalı olması çalışmanın bir diğer sınırlılığı olarak kabul edilebilir. Sonuç olarak üniversite öğrencilerinin psikolojik sağlamlıkları ile yaşam doyumlarının yüksek olması dikkat çekicidir.

Bu çalışmada psikolojik sağlamlık ve benlik saygısı üniversite öğrencilerinin yaşam doyumunu yordadığı ortaya çıkmıştır. Erkeklerin psikolojik sağlamlık düzeylerinin kızlara göre daha yüksek olduğu bulunmuştur. Bununla birlikte benlik saygısı ile yaşam doyumu arasında pozitif bir ilişki tespit edilmiştir. Benzer şekilde benlik saygısının psikolojik sağlamlığı yordadığı ortaya çıkmıştır. Bu sonuçlar ışığında üniversitelerde öğrencilerin yaşam doyumunu artıracak çalışmalar yapılabilir. Benzer şekilde öğrencilerin psikolojik sağlamlık düzeyleri ile benlik saygılarını artıracak çalışmaların yapılması önerilebilir. Benlik saygısı ve psikolojik sağlamlık düzeyinin yüksek olması yaşam doyumunu artırabilir. Bu kapsamda kişisel ve sosyal rehberlik çalışmaları yaygınlaştırılabilir. Araştırma sonuçları genel olarak değerlendirildiğinde, üniversite öğrencilerinin yaşam doyumlarının artmasında psikolojik sağlamlığın etkili olduğu söylenebilir. Böylece öğrencilerin üniversite yaşamında karşılaşacakları zorlukların üstesinden gelmeleri yaşamdan memnuniyet duymalarını sağlayabilir. Bununla birlikte benlik saygısının yüksek olması yaşam doyumunu artırmada etkilidir. Buna göre kendine ilişkin olumlu değerlendirmelerde bulunan bireylerin yaşam doyumlarının yüksek olduğu ifade edilebilir.

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Araştırmacıların Katkı Oranı Beyanı

Bu çalışmanın planlanması, yürütülmesi ve yazılı hale getirilmesinde sadece tek bir araştırmacı yer almıştır.

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Psychological Resilience and Self-Esteem as Predictors of Life Satisfaction in University Students

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Abstract
This study, the relationship between psychological resilience and self-esteem levels of university students and life satisfaction was examined. Relational screening method was used as the method of the study. The study group consisted of 285 girls and 105 boys. Three of the participants did not specify their gender. A total of 393 people participated in the study. The ages of the participants ranged from 18 to 55. The data were collected online and by simple random sampling method. Data were collected using Personal Information Form, Self-Esteem Scale, Satisfaction with Life Scale and Psychological Resilience Scale. The data were analysed with Pearson Correlation Coefficient and Multiple Regression Analysis. This study, a positive and significant relationship was found between life satisfaction and psychological resilience and between life satisfaction and self-esteem. In this study, it was revealed that psychological resilience levels differed according to gender. The findings indicate that psychological resilience and self-esteem together explain approximately 28% of life satisfaction. The results of the research show that psychological resilience and self-esteem are positive predictors of life satisfaction.

Keywords: Life satisfaction, psychological resilience, self-esteem, university students

INTRODUCTION

From the first years of life, the individual wants to be happy. This situation has made being happy and enjoying life an important need for the individual. This situation, which is expressed as life satisfaction, refers to being satisfied with all aspects of life, not justone aspect of an individual's life. Chen et al.,(2017) define life satisfaction as a cognitive evaluation of the general satisfaction that an individual receives from life. The concept of life satisfaction was introduced to the literature by Neugarten, Havighurst and Tobin (1961). Life satisfaction is expressed as an individual's satisfaction with life (Bradley & Corwyn, 2004). In other words, life satisfaction is defined as the compatibility of an individual's achievements and expectations about life. It can be said that if the individual's achievements and his/her expectations from life are compatible, it can be said that he/she is very satisfied with life. Life satisfaction has a positive effect on both the mental health and social relations of the individual. In another definition, life satisfaction is the satisfaction that an individual receives as a result of meeting his/her expectations (Myers & Diener, 1995). Life satisfaction is a situation that covers many aspects of life. In general, it covers satisfaction with the whole of life. Neugarten et al. (1961) explains life satisfaction as the state of well-being of the individual such as happiness and morale. When the definitions in the literature are examined, the concept of life satisfaction can be considered as the happiness or satisfaction that an individual receives from life.

When the literature is examined, it is stated that life satisfaction is related to many variables. One of these variables is psychological resilience. As a matter of fact, Ülker-Tümlü and Recepoğlu (2013) revealed that life satisfaction increased as a result of increased psychological resilience. Similarly, Uz-Baş and Yurdabakan (2017) stated that psychological resilience increases life satisfaction. Psychological resilience has an important place in human life. According to Masten

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Research Article

(2001), psychological resilience is defined as an individual's adaptation in case of a danger in life. It has been found that individuals with high levels of psychological resilience have high life satisfaction (Youngblom et al., 2014). Accordingly, it can be said that coping with the problems faced by the individual increases the satisfaction with life. Studies in the literature show that there is a significant and positive relationship between psychological resilience level and life satisfaction (Martinez-Marti & Ruch, 2017; Şahin-Baltacı & Karataş, 2015; Kaya & Odacı, 2024). Psychological resilience helps the individual to cope with the problems experienced. Doğan (2015) expresses psychological resilience as an individual's effort to cope with difficulties. Psychological resilience is the individual's recovery from mental problems, negative experiences, emotional problems or anxiety-inducing situations, self-recovery and coping with problems (Doğan, 2015). It can be said that an individual with a high level of psychological resilience has the ability to cope with negative situations. Ülker-Tümlü and Recepoğlu (2013) state that when an individual has high psychological resilience, he/she has fewer emotional and psychopathological problems and is in harmony with himself/herself and his/her environment. Accordingly, it can be said that as psychological resilience increases, the individual's satisfaction with his/her life increases. Another variable related to life satisfaction is self-esteem. Self-esteem can be defined as the positive or negative perception that an individual has about himself/herself. Self-evaluation of the individual increases life satisfaction. Studies support this situation. As a matter of fact, Yıldız and Baytemir (2016) revealed that life satisfaction and self-esteem level are related and life satisfaction increases when self-esteem is positive. Çivitci (2007) states that self-esteem is an important concept that affects life satisfaction in many cultures. Self-esteem plays a role in protecting the individual's self and determining social relations. Individuals with high self-esteem are individuals who love themselves, think that they are a reliable person around them and are aware of their abilities. In this respect, Waldron et al. (2018) state that those with high self-esteem have fewer mental problems. This shows that self-esteem has a protective function. Ye et al. (2012) revealed that self-esteem protects individuals' mental health and positively affects subjective well-being. In another study, it was stated that decreased self-esteem negatively affects the mental health of the individual and leads to behavioural problems (Marshal et al., 2013). These results show that self-esteem and life satisfaction have a significant relationship.

University life is a period in which many changes occur in the individual. The individual experiences social, psychological and physical changes in this period. University students try to adapt to these changes and at the same time continue their university education (Aras & Alver, 2017). In this respect, studies on the mental health of university students are important (Santrock, 2014). University students experience significant problems in this period. They face problems such as separation from family, being in a different social environment, academic studies, and accommodation. This situation may lead to a change in students' life satisfaction. Considering the difficulties of university life and the problems experienced during this period, it is important to examine the life satisfaction and psychological resilience levels of university students. From this point of view, university students' academic achievements, social relationships, expectations from the university, and finding themselves physically sufficient are effective in increasing life satisfaction (Tanhan, 2019). It has been revealed that individuals with high life satisfaction have increased self-efficacy and high achievement (Aydıner, 2011; Çivitci, 2012). This situation is effective in increasing students' life satisfaction. In this context, determining the variables that may be related to life satisfaction will help to address life satisfaction more comprehensively and to improve and prevent the life of university students.

It is noteworthy that the studies investigating life satisfaction, psychological resilience and self-esteem variables together are limited in the literature. In this respect, the present study is expected to contribute to the studies in the literature and to be an alternative study to the literature. This study shows that there is a need for studies in which life satisfaction is examined together with psychological resilience and self-esteem. At the same time, considering the difficulties of university life, it is predicted that the results of the study can be used to increase the life satisfaction of students. In this study, the relationship between life satisfaction and psychological resilience and self-esteem in university students was examined. It is considered that

examining life satisfaction, psychological resilience and self-esteem levels of university students will contribute to both preventive and protective mental health services. In this context, the aim of the study is to reveal whether psychological resilience and self-esteem variables predict life satisfaction.

METHOD

In this study, relational screening method was used to determine whether there is a relationship between psychological resilience, self-esteem and life satisfaction. Relational survey model is a research model that reveals the relationship between at least two or more than two variables (Karasar, 2016). The data were obtained by simple random sampling method. In the simple random method, the universe is determined as a general list and each person in the universe has an equal chance of being included in the sample. In this study, data were collected after ethical approval was obtained. The data of this study were collected online via Google Form. A consent form was obtained from the participants who volunteered to participate in the study. The students were assured that the data would remain confidential and would only be used within the scope of the current research.

Participants

The population of the study consists of approximately 10,000 students continuing their education at Igdir University in the 2023-2024 academic year. The study group of the research consists of 285 girls and 105 boys. Three of the participants did not specify their gender. A total of 393 people participated in the study. 72.5 % of the participants were female and 26.5 % were male. The ages of the participants ranged between 18 and 55. 25.5% of the participants were 1st year (100 people), 22.9% were 2nd year (90 people), 23.7% were 3rd year (93 people) and 28% were 4th year (110 people) students.

Data Collection Tools

Personal information form: It was created by the researcher to collect information about the demographic characteristics of the participants such as gender, age, class level, etc.

Life satisfaction scale: The scale was developed by Diener et al. (1985) and adapted into Turkish by Dağlı and Baysal (2016). The scale is a 5-point Likert type consisting of five items. Cronbach Alpha coefficient was calculated as .88 and test-retest reliability coefficient was calculated as .97. There are no reverse scored items in the scale. In this study, Cronbach Alpha coefficient was found as .87.

Short psychological resilience scale: Psychological Resilience Scale consists of 6 items. Items 2, 4 and 6 are reverse scored. The scale was developed by Smith et al. (2008). It was translated into Turkish by Doğan (2015). The Cronbach Alpha coefficient of the scale was found to be .83. In this study, Cronbach Alpha coefficient was calculated as .72. The high score obtained from the scale indicates a high level of psychological resilience.

Self-esteem scale: The Self-Esteem Scale is a 5-point Likert-type scale consisting of 16 items. The scale developed by Tafarodi and Swan (2001) was adapted into Turkish by Doğan (2011). The scale consists of self-love and self-efficacy sub-dimensions. Items 1, 6, 7, 8, 10, 13, 15, 16 are reverse scored because they contain negative expressions. The lowest score of 16 and the highest score of 80 points in the scale indicates that the higher the score, the higher the self-esteem. Cronbach Alpha coefficient for the whole scale and its sub-dimensions were found to be .88, .86 and .79 respectively. In this study, Cronbach Alpha coefficient was calculated as .85 for the whole scale, .82 for the self-love subdimension and .67 for the self-efficacy subdimension.

Data Analysis

In this study, firstly, the suitability of the data for multiple linear regression analysis was examined. In this context, normality and linearity of the data set were calculated. Skewness and kurtosis coefficient values were examined and found to be in the range of -1.5 and +1.5. It can be

said that these values are in the normal range (Tabachnick & Fidell, 2019). It can also be said that the sample size is large enough for regression analysis. In order for regression analysis to be performed, there should not be a high level of correlation between the variables. The presence of multiple correlations negatively affects the regression model (Montgomery, Peck & Vining, 2013). When the correlation coefficients between the variables are analysed, the fact that there is no correlation above .80, the VIF value is not greater than 10 (VIF≤ 10) and the tolerance value is above .10 indicates that there is no multicollinearity problem (Çokluk et al., 2012). In addition, autocorrelation (the relationship between error terms) values were examined and it was found that the Durbin-Watson value was between 1 and 3 (Field, 2018). The distribution of the data was examined by calculating the Mahalanobis distance values and no value contrary to normality and linearity values was found. According to these results, it is seen that the data set is sufficient for multiple linear regression analysis. The research data were analysed by multiple linear regression method (Büyüköztürk, 2011).

FINDINGS

In this part of the study, the findings are presented. Table 1 gives information about the mean scores, standard deviations, skewness and kurtosis values of the variables.

Table 1. Mean scores, standard deviations, skewness and kurtosis values of the variables

Variables	X	sd	Skewness	Kurtosis
Psychological Resilience	19.05	4.94	.95	.167
Life Satisfaction	13.48	4.84	.160	-.548
Self-Esteem	56.29	10.31	-.018	-.195

When Table 1 is analysed, the mean psychological resilience score of the participants was 19.05 with a standard deviation of 4.94; mean life satisfaction score was 13.48 with a standard deviation of 4.84; mean self-esteem score was 56.29 with a standard deviation of 10.31. It is seen that the skewness and kurtosis values of the data are within the normal range. In this study, the skewness and kurtosis values for normal distribution were taken as a criterion between -1.5 and +1.5 (Tabachnick & Fidell, 2019). These results can be interpreted as that the data are suitable for multiple regression analysis. Table 2 shows the correlation coefficients of life satisfaction, psychological resilience and self-esteem.

Table 2. Correlation coefficients for Satisfaction with Life, Psychological Resilience and Self-Esteem

Variables	1	2	3
Psychological Resilience	1	.455**	.365**
Self-Esteem		1	.504**
Life Satisfaction			1

**p< .001

When Table 2 was analysed, it was found that psychological resilience, life satisfaction and self-esteem were significantly and positively related to each other. It was observed that the relationship between self-esteem and life satisfaction was significant and positive. In this section of the study, the results of multiple regression analyses related to the data are presented. The results of multiple linear regression analysis are given in Table 3.

Table 3. Multiple Linear Regression Analysis Results for the Prediction of Life Satisfaction

Variable	B	Standard Error	Beta	t	p
Constant	.807	1.186			
Psychological resilience	.160	.048	.163	3.332	.000**
Self-esteem	.195	.0123	.415	8.505	

R=.53, R^2 = .28, $F_{(2,390)}$ = 74.873, **p< .001 Dependent Variable: Life Satisfaction

When Table 3 is analysed, it can be said that psychological resilience and self-esteem variables are significant predictors of life satisfaction (p<.001). According to these results, it is seen that psychological resilience and self-esteem variables explain 28% of life satisfaction. In other words, psychological resilience and self-esteem were found to be positive predictors of life satisfaction.

DİSCUSSİON, CONCLUSİON, and RECOMMENDATİONS

In this study, the relationship between psychological resilience and self-esteem and life satisfaction was analysed. The results of the study revealed that psychological resilience and self-esteem are two important variables affecting life satisfaction. The results show that psychological resilience predicts life satisfaction firstly and then self-esteem variable predicts life satisfaction. In this study, life satisfaction was found to have a positive relationship with psychological resilience. Accordingly, as psychological resilience increases in university students, life satisfaction increases. There are studies supporting this result in the literature (Abolghasemi & Varaniyab, 2010; Yang et al., 2016; Reyes et al., 2019). As a matter of fact, Altuntaş and Genç (2020) stated that those with high levels of psychological resilience have increased satisfaction with life. Similarly, according to Labrague (2021), psychological resilience has an increasing effect on an individual's life satisfaction under adverse life conditions. In addition, it is stated that psychological resilience increases the resilience of the individual (Duman et al., 2024). The university period is a period in which students can develop themselves and try to cope with the difficulties they face. In this period, students are expected to have adequate levels of psychological resilience. In this respect, it is very important that university students have high levels of psychological resilience. Individuals with high levels of psychological resilience are also expected to be individuals who can cope with stress, control their emotions and have high self-esteem. In this respect, it is expected that their life satisfaction will also be high. According to these results, it can be said that psychological resilience is an important factor predicting life satisfaction. There are other studies in the literature that reveal that psychological resilience predicts life satisfaction (Durak, 2021). Alibekiroğlu et al. (2018) stated that psychological resilience predicts life satisfaction in their study on university students. These results are similar to the findings of the current study. In this study, it was revealed that men had higher levels of psychological resilience. There are studies supporting this result in the literature (Eser et al., 2023). It can be said that the high level of psychological resilience in men is due to the idea that men should be strong in society. In addition, there are studies in the literature that reveal different results. These research results show that the level of psychological resilience does not vary according to gender. For example, Işık and Çelik (2020) stated in their study that psychological resilience levels did not differ according to gender. There are other studies that support this finding (Bolat, 2013; Aydın & Egemberdiyeva, 2018). It is seen that there are studies that reveal different results in the literature. Accordingly, the gender factor can be re-examined with different research groups and samples from different cultures.

In this study, a positive relationship between self-esteem and life satisfaction was found. As self-esteem increases, individuals' life satisfaction increases (Dilmaç & Ekşi, 2008). Considering that individuals with high self-esteem make positive evaluations about themselves, it can be said that having positive thoughts about themselves increases their satisfaction with life. When examined in the literature, there are studies that reveal that self-esteem and life satisfaction are related. The results of this study also coincide with the results of the studies in the literature. As a matter of

fact, Çeçen (2008) and Diener et al. (2009) revealed the relationship between self-esteem and life satisfaction. In these studies, it is seen that there is a relationship between self-esteem and psychological resilience. When the studies in the literature are examined, it is seen that the current finding is supported. Yörük-Topuz and Cihangir-Çankaya (2022) revealed that the level of psychological resilience increased as self-esteem increased. Similarly, self-esteem was stated as an important variable predicting psychological resilience (Balgiu, 2017). According to the results of the current research, high self-esteem in university students positively affects their psychological resilience levels. Accordingly, high self-esteem can enable the individual to cope with the difficulties encountered. Supporting students' personal development can increase self-esteem. It is thought that this situation may increase the psychological resilience levels of students. In a study, it is seen that individuals with high self-esteem are more resilient than other individuals in the face of a negative situation and can cope with difficult situations more easily (Smith & Dust, 2006). It can be said that the findings of this research will make important contributions to the literature. However, the study also has some limitations. The fact that this research was conducted only in a state university can be accepted as a limitation. The research can be repeated on larger sample groups. The fact that the measurement tools are based on self-report can be considered as another limitation of the study. As a result, university As a result, it is noteworthy that psychological resilience and life satisfaction of university students are high.

In this study, it was found that psychological resilience and self-esteem predicted life satisfaction of university students. Males were found to have higher levels of psychological resilience than females. However, a positive relationship was found between self-esteem and life satisfaction. Similarly, it was found that self-esteem predicted psychological resilience. In the light of these results, studies can be conducted in universities to increase students' life satisfaction. Similarly, it may be recommended to conduct studies to increase students' psychological resilience levels and self-esteem. High levels of self-esteem and psychological resilience can increase life satisfaction. In this context, personal and social counselling activities can be expanded. When the results of the research are evaluated in general, it can be said that psychological resilience is effective in increasing the life satisfaction of university students. Thus, overcoming the difficulties that students will face in university life can make them feel satisfied with life. In addition, high self-esteem is effective in increasing life satisfaction. Accordingly, it can be stated that individuals who have positive evaluations about themselves have high life satisfaction.

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Author Contributions Statement

This study was planned, conducted, and written by a single researcher.

Conflict of Interest Statement

The researcher has no personal or financial conflicts of interest with any individuals or institutions related to this study.

Ethics Committee Approval

This research was conducted with the approval of the Iğdır University Scientific Research and Publication Ethics Committee, dated 06/03/2024 and numbered 2024/9.

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Meta-Thematic Analysis Of Research On Forest School-Based Practices: A Comprehensive Review

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Abstract
Originally developed in Scandinavia, forest schooling encourages children to study by removing them from the confines of their homes and schools and allowing them to engage in outdoor endeavors. The aim of this study is to analyze the results of qualitative research on forest school-based practices in early childhood education with the meta-thematic analysis method and to see the effects of forest school-based practices on child development as a whole by combining the results. For this purpose, meta-thematic analysis of qualitative studies was conducted by subjecting them to content analysis with the document analysis pattern. The meta-thematic study identified children's cognitive, social, and emotional development as the primary foundations. A total of 725 research studies were initially identified, and their selection process was illustrated using a flow diagram. Out of these, 12 studies—sourced from national and international databases—were selected for detailed analysis. The results of the analysis showed that forest school-based practices have positive effects on children's cognitive, social-emotional, motor and language development areas. Nonetheless, these applications exhibit some adverse characteristics such as cold weather, insufficient planning, lack of knowledge etc. yet, alternatives exist to mitigate these drawbacks.

Keywords: Early childhood education, Forest School, social-emotional development, outdoor education

INTRODUCTION

The Forest School is a student-centered educational model that supports learners in taking risks, emphasizes learning through play and exploration, and thereby contributes to the development of children's overall growth, especially in social-emotional development. It is implemented by practitioners trained in forest school education over an extended period of time (FSA, 2021). The Forest School views children not as passive recipients of knowledge but as creators of knowledge, allowing them to explore their surroundings in unstructured environments (Barrable & Arvanitis, 2019). It is a student-centered approach that takes educational activities beyond school boundaries, periodically conducted in natural environments such as wooded areas, at least twice a week and for extended periods (Harris, 2018). The Forest School aims to connect children with nature and develop environmentally protective behaviors. It was developed in the 1950s by Scandinavians who were aware of nature's contribution to child development, to help children understand the world they live in. Initially inspired by early childhood education institutions in Scandinavian countries that offered outdoor learning, the Forest School has become an educational approach that focuses on open-air learning and attracts significant interest (Harris, 2023). Since 1995, it has also been adopted in European countries (Murrey & O'Brien, 2005).

The education approach in forest schools is child-centered and supports learning opportunities for students. The roles of teachers and students change in these schools. Students exhibit greater engagement than in a conventional classroom and assume responsibility for their own learning. The teacher is more in the background, facilitating the learner to take responsibility for their

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learning and become aware of their own limits (Garden & Downes, 2023). Regular and short intervals of sessions in the forest over an extended period help each child learn in a way that aligns with their learning style and individual characteristics (Murray & O'Brien, 2005).

Since each child attending forest school has different learning and development needs and comes from various environments, their achievements in the forest school are also different (Harris, 2023, p.8; Murray & O'Brien, 2005, p.10). Consequently, it can be asserted that each child derives distinct advantages in accordance with their demands and particular traits. Forest schools provide a learning environment that is suitable for the personal characteristics of children (Pamuk & Ahi, 2019), allowing each child to learn at their own pace in a way that suits their learning style (Harris, 2018). This individualized learning approach facilitates the transition to the next stage of education and supports adaptation to it (Turtle et al., 2015; Murray & O'Brien, 2005).

2. Forest School

Forest school practices carried out in natural settings give a large portion, if not the whole time, to free play, allowing children to actively construct their own learning experiences (Mart & Waite, 2023). Since forest schools provide more space and freedom of movement compared to classroom settings, they allow students to interact more with each other and play cooperative games in harmony with the group (Ahi et al., 2023; Barrable & Arvanitis, 2019). Thus, it becomes easier for children to socialize, and their emotional development is supported (Harris, 2023). In forest school, children's abilities to act autonomously and find themselves adequate develop, and their feelings towards themselves, their environment, and nature change and improve positively (Barrable & Arvanitis, 2019; O'Brien & Murray, 2006).

Forest school education supports the development of children's social relationship building, teamwork skills, and their ability to cope with risky situations (Dabaja, 2022; Cudworth & Lumber, 2021). Observations indicate that children exhibit happiness when engaging in free play within natural environments, contributing to the development of positive self-confidence and self-esteem. (Pamuk & Ahi, 2019; Dabaja, 2022; Cudworth & Lumber, 2021). Children who exhibit shyness in expressing themselves within the classroom setting demonstrate greater success in self-expression and improved communication skills in natural environments. Additionally, students who struggle with traditional classroom activities adapt more effectively to the activities conducted in forest school settings. Furthermore, regularly engaging children in outdoor activities beyond the classroom plays a significant role in enhancing their attachment to school. (Cumming & Nash, 2015). It has been noted that even children who do not like being at school eagerly anticipate going to forest school (Harris, 2023; O'Brien & Murray, 2006). In forest school, children can control their own actions (Barrable & Arvanitis, 2019). The calming and relaxing effect of education offered in the open air has been observed to allow children with special needs to participate more effectively in education (Harris, 2023). In forest schools, each child constructs their own learning (Pamuk & Ahi, 2019). Forest school contributes to the practical development of children's learning skills (Harris, 2023; Murray & O'Brien, 2005; Dabaja, 2022; Cudworth & Lumber, 2021). They actively use scientific processes such as observing, hypothesizing, grouping, and conveying what they have learned (Pamuk & Ahi, 2109). Children who participate in forest school education develop creative thinking skills and mental processes (Sella et al., 2023). Research by Cumming and Nash (2015) also shows that students who spend time in the forest have higher imagination potential and creativity levels compared to those who spend time in the classroom (Turtle et al., 2015). Forest leaders (educators or teachers who provide forest school education and manage this process) have noted that children feel freer in the forest, decide themselves whether to move as a group or individually, and the noise levels decrease, leading to more permanent learning and more comfortable movement (Harris, 2018). While forest school practices support the development of positive emotions in children, they also provide opportunities for them to engage with challenges that foster resilience and problem-solving skills.

Children receiving forest school education experience risky play and encounter problem situations they need to overcome. They try to find new solutions to solve these situations, developing their perspectives on risks (Pamuk & Ahi, 2019). In environments without significant risks, children can more easily take responsibility for their own actions. As they succeed in overcoming challenges, their self-confidence and self-esteem develop (O'Brien & Murray, 2006). The amount of time spent in natural environments where forest school education is implemented affects children's interaction with themselves, their peers, teachers, and the natural environment (Mart & Waite, 2023). The more time children spend in a natural environment, the more they feel a sense of belonging to it (Garden & Downes, 2023; Sella et al.,, 2023). This bond with nature does not form in a short time; it is a long process that helps children understand their surroundings better by activating all their senses together (Cudworth & Lumber, 2021). Children participating in forest school practices become aware of their surroundings, their curiosity is stimulated, and they begin to understand the life cycles occurring in nature (Mart & Waite, 2023). The bond they establish with nature helps them feel a sense of belonging to their environment (Dabaja, 2022; Cudworth & Lumber, 2021). Children who receive forest school education are more sensitive to the environment than those who do not (Turtle et al., 2015). Additionally, it has been observed that children involved in organizing school environments, tree planting, and creating natural spaces take pride in these activities and feel a sense of ownership (Cumming & Nash, 2015). Children who regularly visit and spend time in nature at an early age continue to enjoy spending time in these natural environments as they grow up. Regular time spent in nature also influences children's future career choices, steering them towards nature-related professions (Turtle et al., 2015).

2.1. Characteristics of the Forest School

The Forest School has its own unique ethical principles. These principles, adopted by the UK Forest School Association (FSA) in 2011, are as follows: Forest School is based on the principle of repeated short-interval sessions in a forest area with physical and operational boundaries, where children and the Forest School leader work interactively and harmoniously over an extended period. Forest School education is conducted in the forest because it provides numerous opportunities for children to act in ways that align with their innate characteristics. The forest helps children move freely and become aware of their personal competencies (Barrable & Arvanitis, 2019). Forest School education is shaped over time, prioritizing the interests and developmental needs of children. Although activities are planned according to predetermined themes, they can evolve into completely different subjects based on children's interests (Mart & Waite, 2023).

Careful preparation and planning are required for Forest School practices (Dillon et al., 2006). Forest School has carefully determined safety measures. The area is chosen from forested areas with low risk levels and defined boundaries. The forest is an ideal environment for experiencing and supporting autonomy and competence; it always has a solid yet flexible structure through consistent use of routines and rules. It is conducive to carrying out learning activities that align with the goals of the general education program (Barrable & Arvanitis, 2019). Meaningful and permanent learning is achieved by using all senses simultaneously (Murray & O'Brien, 2005; Turtle et al., 2015). Forest School education is delivered by teachers known as Forest School leaders who have received Forest School training. Forest School leaders are trained in child pedagogy and developmental characteristics, shaping wooden materials, making fires, and using tools (knives, saws, etc.) (Barrable & Arvanitis, 2019). It is important for the process to be continued and completed with the same leader (O'Brien & Murray, 2006). In forest education, when the child is accepted with love and respect by the Forest School leader and the group, they more easily adopt the group's values and develop a stronger relationship with nature. Therefore, the forest education leader has an attitude that listens to each child's ideas and makes the child feel valued (Barrable & Arvanitis, 2019).

Forest School not only offers unique interaction opportunities with nature and peers but also provides a valuable opportunity for child-teacher interaction (Sella et al., 2023). Forest School

strives to instill respect for nature, environmental protection, and awareness of sustainable living (Barrable & Arvanitis, 2019). Children's curiosity is prioritized. One of the most distinctive features of Forest School is being in nature regardless of weather conditions in every season. This allows the child to observe, understand, and learn about natural changes from a primary source. Forest groups are formed by considering the ratio of children to adults. There are routines in forest education sessions that facilitate children's adaptation (O'Brien & Murray, 2006).

2.2. Forest school effect

The accelerated advancement of science and technology has shifted the focus of concern from nature's potential to harm humans toward the increasing awareness of how human activities threaten natural ecosystems. In parallel with this shift, contemporary societies have developed a heightened perception of risk regarding outdoor environments, particularly for children. Influenced by media coverage and societal anxieties, many parents perceive indoor settings as safer and more controllable, leading them to limit their children's engagement with nature (Gill, 2007; Savery et al., 2017). Consequently, formal educational institutions are often preferred under the assumption that they provide secure and structured environments. However, despite these prevailing concerns, a significant number of families continue to choose forest school programs. This suggests a growing recognition of the unique developmental benefits offered by nature-based education, which appear to outweigh perceived risks for many parents.

Purpose of the Research

A comprehensive review of the literature indicates that the effects of forest school practices have been examined from various disciplinary and thematic perspectives. While existing studies provide valuable insights into the cognitive, social, and emotional outcomes associated with forest school experiences, there remains a notable gap in the literature regarding an integrated and holistic analysis of these effects. In particular, few studies have systematically synthesized qualitative findings across different dimensions of child development within the context of forest school education. Addressing this gap, the present study aims to re-analyze and consolidate qualitative data from existing research to construct a comprehensive framework that captures the multifaceted impacts of forest school practices during early childhood.

In this study, the following research questions were posed to gather data on the impacts of early childhood forest school practices:

1. What impact do forest school practices have on the cognitive development of preschool-aged children?
2. What impact do forest school practices have on the social development of preschool-aged children?
3. What impact do forest school practices have on the emotional development of preschool-aged children?
4. What are the potential adverse effects or challenges associated with forest school practices?

METHOD

3.1. Research model

This study employed a meta-thematic analysis approach grounded in qualitative research methods. Meta-thematic analysis involves an analytical process wherein raw data from primary sources within scientific research documents are systematically coded and themed. These newly developed codes and themes are then utilized to generate novel insights and meanings from the analyzed studies (Batdı, 2019). The meta-thematic analysis process is document review-focused (Talan et al., 2020). In this context, meta-thematic analysis can be described as the process of

developing new codes and themes from the raw data of documents pertaining to the research topic and synthesizing these codes and themes to derive new insights and meanings relevant to the subject.

Meta-thematic analysis, introduced by Batdı (2017), is a form of analysis that combines qualitative data from studies on the researched topic to present and explain the subject in a broad framework. In the current study, qualitative research documents containing forest school practices were examined through meta-thematic analysis to determine the effects of these practices on the cognitive, social, emotional, and motor development areas of preschool children and to identify the limitations of these practices. The qualitative data of the studies included in the current study were analyzed based on document analysis, and the findings were obtained by coding the qualitative data of the reviewed documents.

3.2. Data Collection and Analysis

In this study, studies conducted on the effects of forest school applications were examined within the scope of meta-thematic analysis. Seven databases were used in the study: “Science Direct-SD”, “Taylor and Francis-TF”, “Higher Education Council Thesis Center (YokTez-YT),” “Dergipark”, “ProQuest-PQ”, “ERIC-E” and “Web of Science-WOS”. The sources that were subjected to meta-thematic analysis in this research are given in the Table 1 below.

Table 1. Articles analyzed in this research

NAME OF THE ARTICLE	DATABASE	AUTHOR	YEAR	SOURCE
Forest school based prosocial support program for 4-6 year olds children's prosocial behavior.	YOKTEZ	Elif Sureyya Kanyilmaz Live	2022	Canlı, E., S., K., (2022). Forest school based prosocial support program for 4-6 year olds children's prosocial behavior. Unpublished doctoral thesis. Gazi University, Institute of Educational Sciences, Ankara.
Evaluation of a forest school application.	Google Scholar	Elif Sureyya Kanyilmaz Live	2022	Canlı, E., S., K., Temel, Z., F., (2022). Evaluation of a forest school application. Mehmet Akif Ersoy University Journal of Education Faculty, 62, 431-454. DOI: 10.21764/maeuefd.1040654
Forest school practices on children's development Evaluation of the contribution of the subject	YOKTEZ	Omer Dilek	2019	Dilek, Ö., (2019). Forest school practices on children's development Evaluation of the contribution of the subject . Unpublished master's thesis. Kastamonu University, Institute of Social Sciences, Kastamonu.
Preschools implementing the forest school approach in Türkiye perceptions and experiences of risk in the implementation process of adults in institutions examination	YOKTEZ	Mehri Erol	2023	Eroğlu, M. (2023). Preschools implementing the forest school approach in Türkiye perceptions and experiences of risk in the implementation process of adults in institutions examination . Unpublished master's thesis. Fatih Sultan Mehmet Foundation University, Institute of Graduate Education, Istanbul.
An Evaluation of the Forest School Program in a State Preschool in Istanbul .	YOKTEZ	Sumeyra Busra Eroglu	2018	Eroğlu, S., B., (2018). An Evaluation of the Forest School Program in a State Preschool in Istanbul . Unpublished master's thesis. Boğaziçi University. Social Sciences Institute of Graduate Studies, Istanbul.
The Impact of Forest school within secondary school education : an exploratory case of key stage three pupils ' views	Google Scholar	Julia Alexander Hopkins	2022	Hopkins, J., A., (2022). The Impact of Forest school within secondary school education : an exploratory case of key stage three pupils ' views .Master Thesis . York St. John University , England . http://ray.yorksj.ac.uk/id/eprint/7236/
Forest school applications on preschool children on education, science and research	Google Scholar	Tugce Kanat, Serdar Arcagok	2022	Kanat,T . , Ar cagök , S., (2022). Forest school applications on preschool children on education, science and research. Journal of Education, Science and Research, 3(1), 167-195.

Forest school practices for preschool children on .	YOKTEZ	Tugce Kanat	2019	Kanat, T. (2019). Forest school applications for preschool children on . Unpublished master's thesis. Istanbul University. Cerrahpasa Graduate Education Institute, Istanbul.
Alternative approach in preschool education: Forest school's teachers, parents and administrators.	YOKTEZ	Merve Koyuncu	2019	Koyuncu, M., (2019). Alternative approach in preschool education: Forest schools teachers , parents and administrators. Unpublished master's thesis. Ankara Yildirim Beyazit University, Institute of Health Sciences, Ankara.
Forest School and its Impacts on young people children : Case studies in Britain.	Science Direct	Liz O'Brien Richard Murray	2007	O'brien , L., Murray , R., (2007). Forest School and its impacts on young children : Case studies in Britain. Urban Forestry & amp ; Urban Greening 6, 249–265. DOI: 10.1016/j.ufug.2007.03.006.
An evaluation of physical activity at forest school .	Google Scholar	Rebecca Lovell	2009	Lovell , R., (2009). An evaluation of physical activity at forest school . Unpublished Doctoral Thesis. The University of Edinburgh .
Re-establishing the relationship between the natural environment, the city and children, ''Nature-based education in Scandinavia and the Swedish forest school example''	YOKTEZ	Ayse Merve Rusli	2019	Paslı, A., M., (2019). Re-establishing the relationship between natural environment, city and child, ''Nature-based education in Scandinavia and the Swedish forest school example. Unpublished Master 's thesis. Istanbul Şehir University. Institute of Social Sciences, Istanbul.

The criteria for including the documents obtained on forest school applications in the meta-thematic analysis were determined as follows.

- It should be at the level of pre-school education (0-6 years old),
- It should aim to measure the effects and limitations of forest school practices on the cognitive,emotional and social context of children,
- It should be scientifically qualified and sufficient,
- It should include direct participant opinions,
- It should be a thesis or article.

Qualitative research studies related to forest school methodologies were identified through the application of document analysis techniques. The studies were selected through a systematic process involving preliminary readings, reviews, initial screenings, and full-text readings. Following this stage, both the short and long summaries of the selected studies were reviewed, and the findings sections were analyzed to determine their suitability for inclusion in the analysis process.

As seen in the PRISMA diagram in Figure 1, the selection process of the studies consisted of four steps. In this context, out of 725 studies that investigated the effectiveness of forest school practices between 2005 and 2023, 15 were excluded due to duplication, 235 due to irrelevant topics, and 255 because their summaries determined they did not have suitable content. Of the remaining 220 studies, 208 were excluded from the meta-thematic analysis because they did not

meet the inclusion criteria of being qualitative in nature, including participants' views, containing data on the effectiveness of forest school practices, or having sufficient scientific characteristics. As a result of these procedures, 12 studies were included in the analysis process.

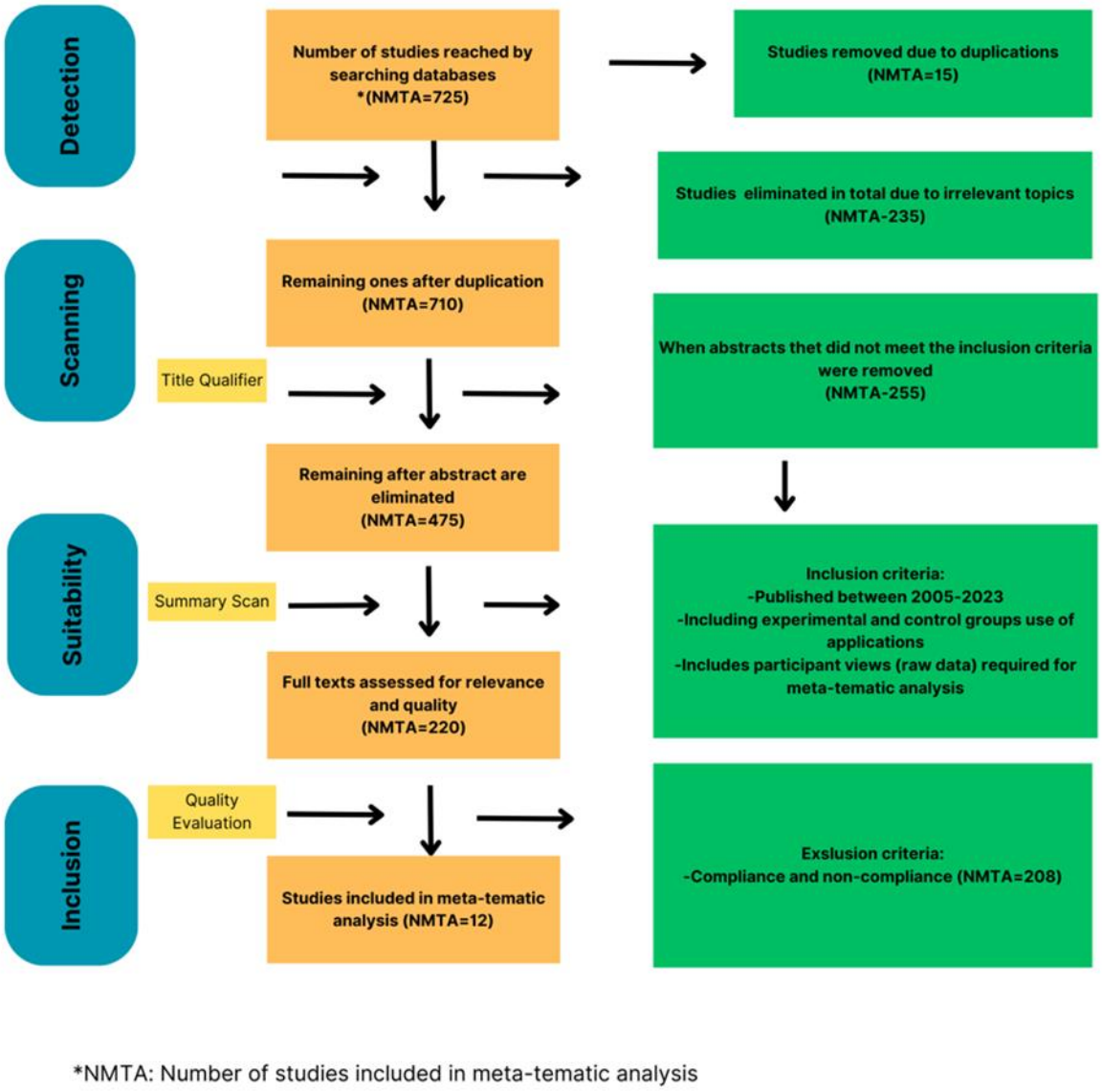


Figure 1. Prisma Diagram for the Selection of Studies Included in the Meta-Thematic Analysis

In the present study, data from the studies included in the meta-thematic analysis were gathered using the document review method. Document review is a scientific technique that involves the content analysis of both printed and online electronic documents, encompassing the processes of selecting, interpreting, evaluating, and deriving meaning from the data within the documents (Bowen, 2009). Content analysis is a technique that involves systematically and impartially deriving meaning and reinterpreting data from the content of texts using an inductive approach (Koçak & Arun, 2006; Krippendorf, 2004). In this study, the primary source data from the studies included in the analysis were reexamined to generate new themes and codes, which were subsequently interpreted.

3.3. Coding Process

In documents, data value is held not just by the specified content but also by all of the variables that contribute to the description. According to Glaser, whom pioneered the grounded theory, anything has the potential to be considered data. The grounded theory is distinguished by objective data collection and interpretation that excludes the researcher's own ideas (Glaser,

2007). In qualitative research, ensuring credibility is crucial due to the involvement of subjectivity and interpretation (Glasser & Holton, 2007). Qualitative research is a process involving logical questioning, a continuous search for answers, effective observations, and accurately recording the right data. Therefore, in qualitative research, the grounded theory method is used, which involves combining data, uncovering what is not explicitly stated, distinguishing important data from unimportant, logically synthesizing seemingly unrelated concepts and situations, and relating the obtained data to evidence (Glaser & Holton, 2007).

During the coding process, an important stage of the meta-thematic analysis process, participants' views from the included studies were re-examined and coded. Similar codes were categorized to create themes. In the coding process, the researcher labels the relevant data with the code derived from the raw data, documenting the data to which the code belongs. These small groups of information are then classified under themes based on their similar characteristics (Creswell, 2013). Through a systematic analysis of the data, five core themes were identified, each reflecting a distinct aspect of the impact and implementation of forest school practices.

The coding was performed independently by two coders: one being the researcher and the other an academic expert in the field. They independently examined the documents included in the analysis process and created different codes and themes. After this stage, they compared the created themes and codes, recording similar ones and discussing the compatibility and consistency of differing ones during meetings. Eventually, a certain level of agreement was achieved. The reliability between coders was calculated using Cohen's Kappa coefficient (Cohen, 1960), and the agreement value was found to be between .829 and .901, indicating good to very good levels of agreement.

3.4. Reliability in the Meta-Thematic Analysis Process

The meta-thematic analysis procedure employed in this study ensured reliability by following methodologies commonly used in qualitative research. In this process, the researcher and the research advisor worked independently, unaware of each other’s efforts, to generate codes and themes. Similar codes and themes were then integrated, and any discrepancies were discussed and resolved through mutual agreement. According to Creswell (2013), reliability in qualitative research refers to the consistency of responses provided by multiple coders regarding the data they generate. In this context, the methodology employed in this study supported the reliability of the analysis process by ensuring consistency among multiple coders.

Additionally, Denzin's (1978) method of investigator triangulation, one of the ways to ensure reliability in qualitative research, was employed. Investigator triangulation involves multiple researchers participating in the process of data collection, analysis, code and theme creation, and interpretation of the obtained data (Başkale, 2016). Raw data related to the codes and themes were presented with quotations from the relevant studies. These quotations were numbered according to the studies from which the related codes and themes were derived, and the page numbers of the quotations were also coded and presented in the section containing direct quotations. In the current study, "M" represents articles-in Turkish “Makale=Article” ; "GS" represents Google Scholar, and for codes sourced from the National Thesis Center of the Council of Higher Education, the thesis number was indicated to form abbreviation codes.

RESULTS

4.1. Findings Related to the Meta-Thematic Analysis Process

The analysis of qualitative research data on forest school practices included in the meta-thematic analysis revealed various themes related to developmental areas. These themes include the impact of the practices on children's emotional, social, and cognitive development,

the negative aspects of these practices, and suggested improvements. To ensure the findings are robust and clearly linked to the data, more detailed coding procedures are provided. This includes sample codes, references from the data sources, and tables/graphs illustrating the relationships between the codes and themes. The emerging themes and their related codes are presented through diagrams for clarity. Additionally, direct quotations from the data referencing the formed codes are included in the commentary to enhance transparency. For example, Figure 2 presents a diagram created with codes related to the theme "impact of forest school practices on children's emotional development," with each code interpreted and supported by reference sentences from the data.

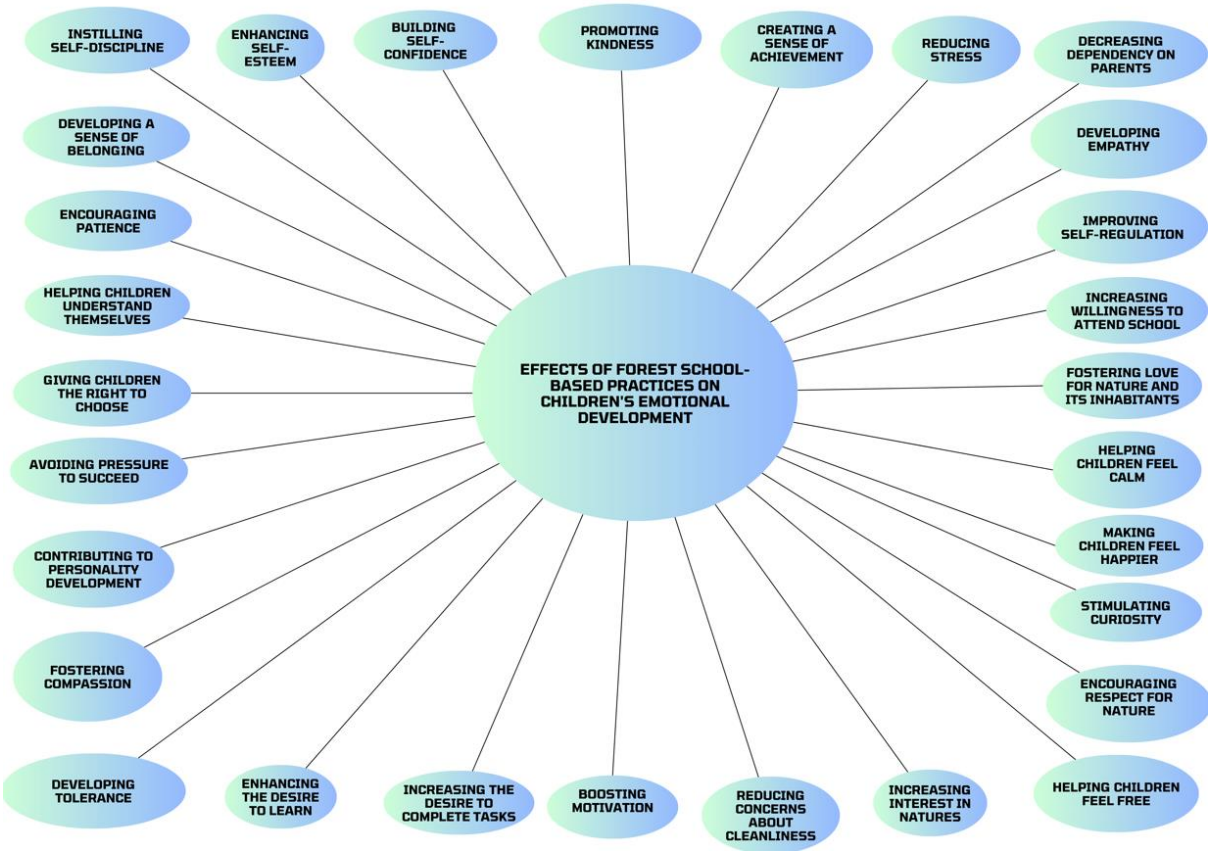


Figure 2. Effects of Forest School-Based Practices on Children's Emotional Development

The mentioned practices have several key benefits, including enhancing self-confidence, helping children feel calm and free, teaching respect for nature, and developing empathy skills. Here are some references to the data supporting these codes: “For example, when we say things like ‘you’ll fall, don’t hold on there, don’t go like that,’ they say, ‘No, I won’t fall, I don’t fall anymore, I can go myself. I can do it myself now.’” (737407-p.153) “He used to get angry very quickly at school. But I noticed he feels calmer on Forest School days.” (532747-p.72) “I love coming here because I can play as I want.” (536936-p.70) “They realize that plants, flowers, and animals have their own life cycles in nature and learn to respect them.” (616799-p.56) “I can give an example of a child empathizing with the creatures in the stream by saying, ‘Teacher, would you like to live with this trash?’” (745541-p.38)

Additionally, codes indicating the development of values such as patience, compassion, and tolerance were also identified. These findings suggest that forest school practices provide children with the opportunity to achieve tasks they previously thought they couldn’t accomplish, creating a sense of achievement and fostering positive attitudes towards school. Thus, the data show that forest school practices positively impact children's emotional development.

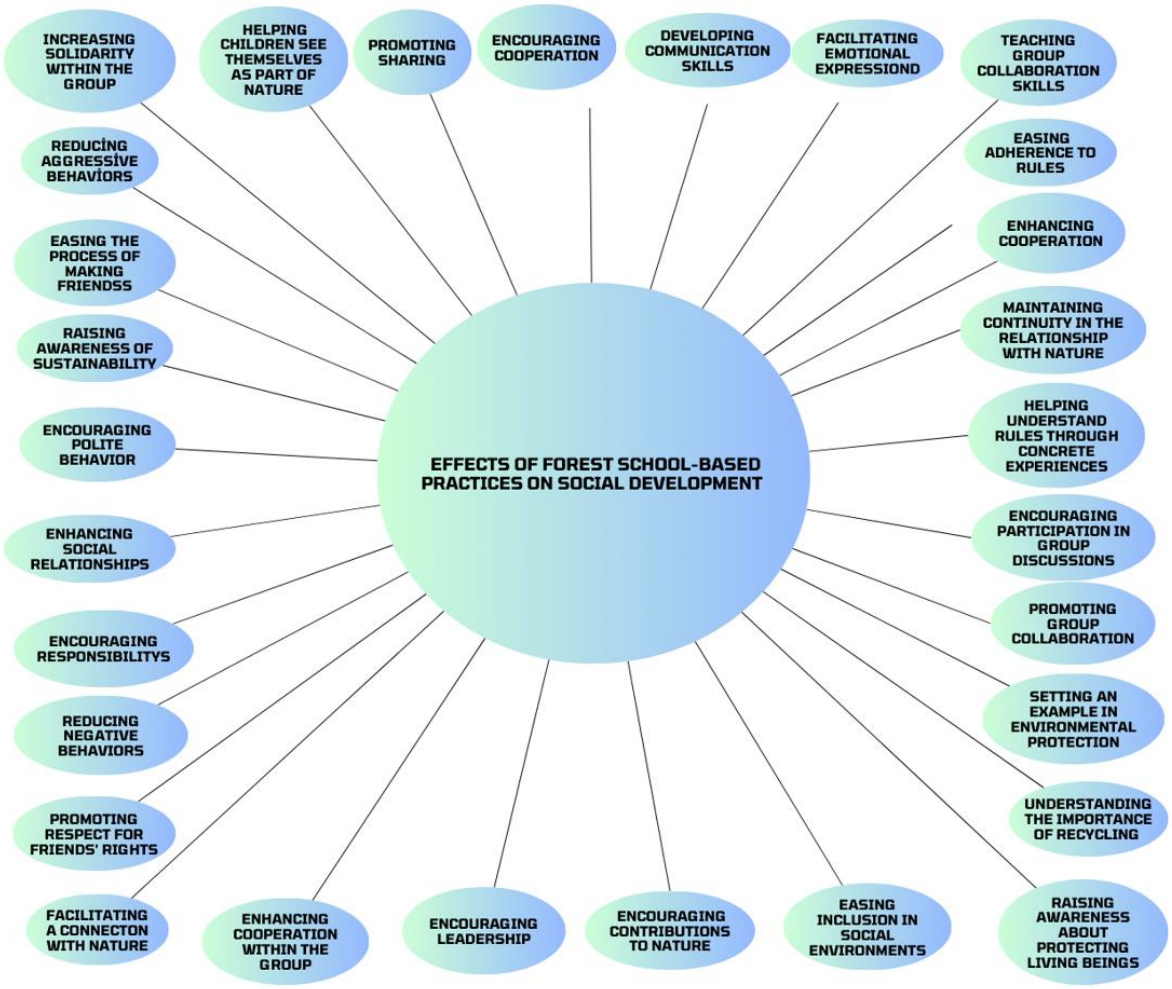


Figure 3. Effects of Forest School-Based Practices on Social Development

Figure 3 contains codes related to the theme of the effects of forest school-based practices on social development. These practices help children develop group collaboration skills, enhance cooperation, maintain continuity in their relationship with nature, ease the process of making friends, and establish a strong connection with nature. For instance, it has been observed that children's abilities to move as a group, use their imagination to create things, discover through play, research, and identify different sounds have improved (616799-p.50). They have also engaged in various activities cooperatively, such as building an ant nest through task distribution and collaborative efforts (737407-p.162). Even after the Forest School sessions ended, children continued bringing bugs and worms home, collecting seeds, planting them, and feeding the worms to chickens (532747-p.73). One child mentioned that Forest School helps new students make more friends if they want to (OO-M9 Hopkins, A., J., (2022) -p.49). Another child showed empathy by expressing concern for a wilting flower and offering to water it (536936-p.70). Additionally, forest school practices have a significant impact on preventing children from becoming indifferent to their environment. These practices not only develop crucial social skills such as cooperation, solidarity, and responsibility but also encourage self-expression, promote polite behavior, and ease adherence to rules. Overall, these findings indicate that forest school practices positively impact children's social development.

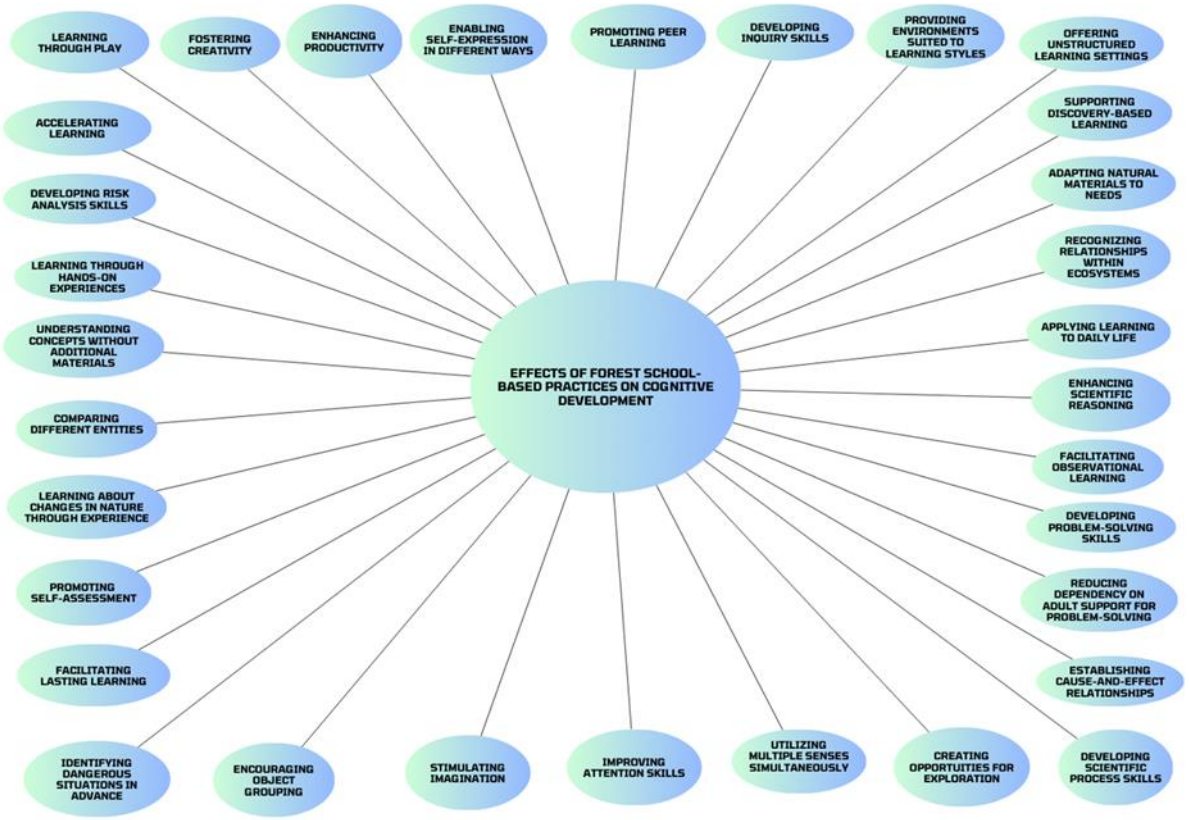


Figure 4. Effects of Forest School-Based Practices on Children's Cognitive Development

Figure 4 contains codes related to the effects of forest school-based practices on children's cognitive development. Some of these codes include enhancing problem-solving skills, developing scientific process skills, reducing the need for adult support in solving problems, establishing cause-and-effect relationships, and recognizing relationships within ecosystems. For example, "children can solve their own problems outside, in the garden, or at home, at least recognizing the situations as problems that need solving" (616799-p.64); "in the forest, children spent a long time breaking stones and made many observations about the hardness of different stones, classifying them based on these observations, and concluding that each type of stone has a different hardness and breaks differently depending on its material" (745541-p.32); "children are more attentive and calm in the forest. This means they try to solve problems together rather than shouting or asking the teacher for help when they don't want to. Everyone proposes an idea, and they try the most logical one. Through collaboration, they can solve all problems without help" (616799-p.48); "the wood is wet because of the rain, we can't burn it" (536936-p.59); "animals need trees to drink water," "people need trees to set up a dining table" (532747-p.73). These sentences can be referenced for these codes. Additionally, other codes indicate that forest school-based practices support creativity and productivity by encouraging the use of natural materials in unstructured environments to produce unique products, thereby enhancing imagination.

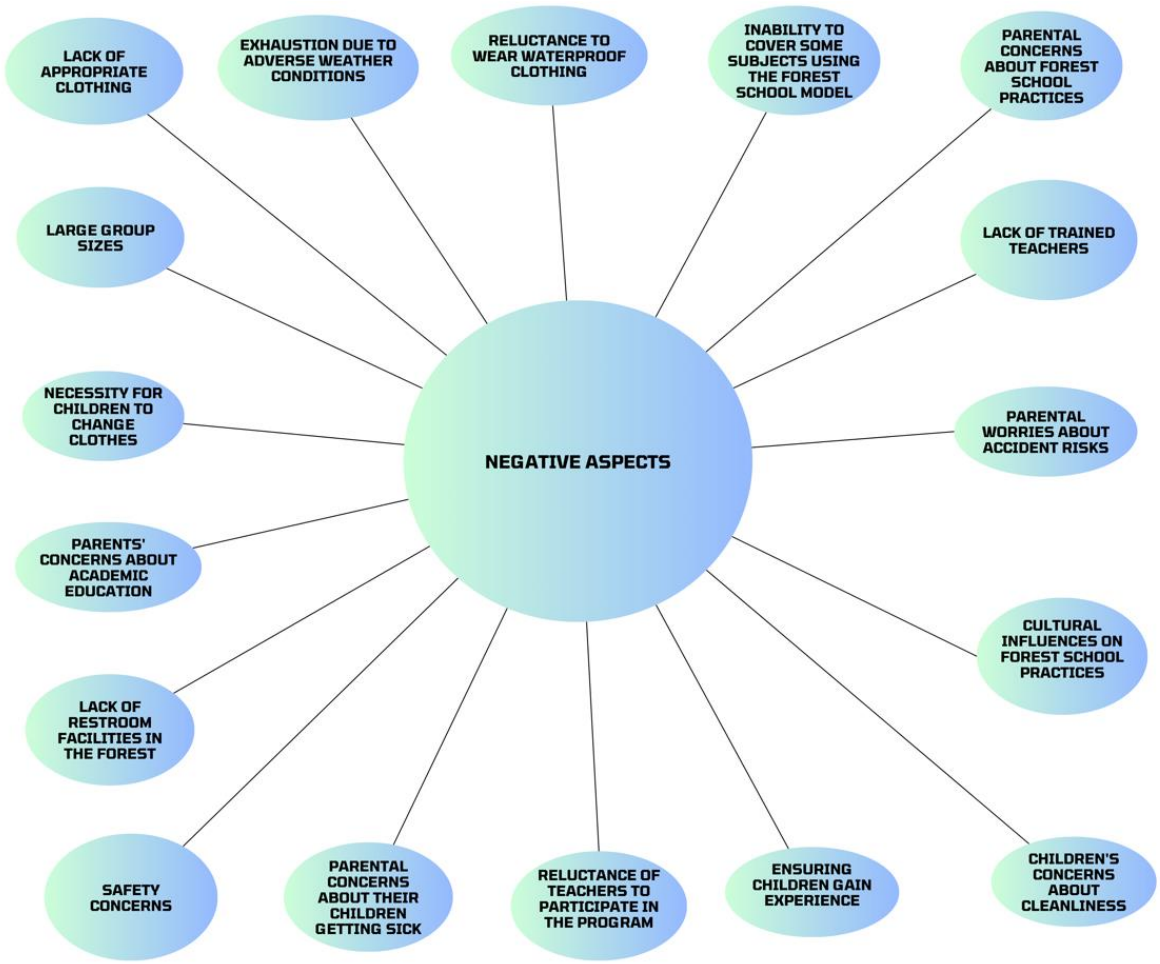


Figure 5. Issues Encountered in Forest School Practices

Figure 5 reveals codes related to issues encountered in forest school-based practices. Some of these issues include the lack of trained teachers in forest school practices, children's concerns about cleanliness, worries about risky situations in the natural environment, lack of restroom facilities in the forest, and safety concerns. For instance, "finding trained staff is very difficult. The biggest problem is not having teachers who have worked in this field" (543840-p.83); "she didn't hold natural materials, didn't touch the soil or mud, and started crying when there was sand in her boots" (532747-p.79); "there could be falling branches, poisonous mushrooms or plants, or a snake, scorpion, or bug that could suddenly appear" (786939-p.69); "I don't like going to the toilet because there is none" (Lowell, R., 2009, OO-M1 -p.238); "due to the lack of security, dogs in the forest come too close to the children, which worries us" (543840-p.112). These sentences can be referenced for these codes. Additionally, codes indicate that forest school practices are influenced by the cultural characteristics of the country. It appears that cultural characteristics have led to a negative perception of forest school practices among parents in our country.

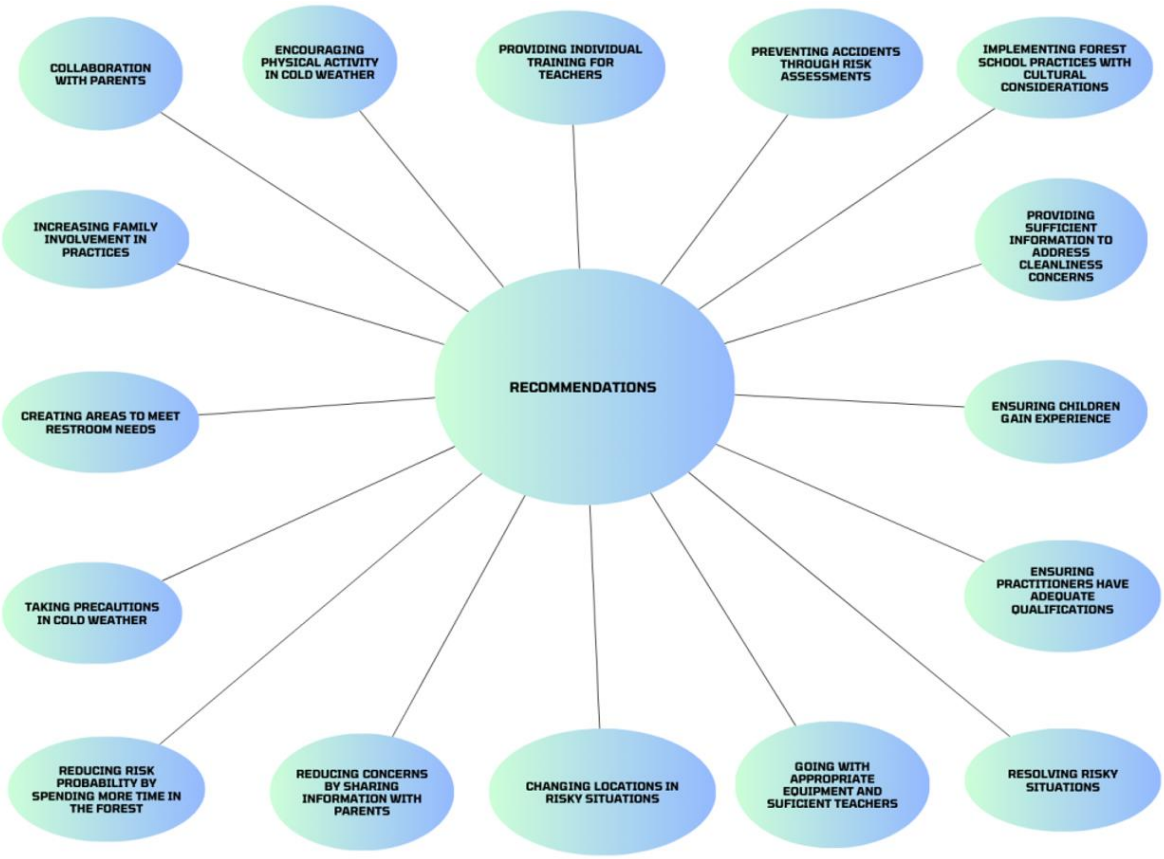


Figure 6. Recommendations for Addressing Issues in Forest School Practices

As seen in Figure 6, codes related to recommendations for addressing the negative aspects of forest school practices have also been identified. Some codes proposing solutions to certain negative situations include individual training for teachers, providing sufficient information to address cleanliness concerns, creating areas to meet restroom needs, preventing accidents through risk assessments, and resolving risky situations. The recommendation codes can be referenced as follows: "... I received education on Forest Pedagogy from Finland, Sweden, and finally Germany, and I tried to adapt it to our culture." (543840-p.124); "Even if our clothes get dirty, our teacher will wash them. Let's roll down here." (636936-p.65); "... with risk analyses carried out, a planned program, an ideal number of children and adults, and educated leaders (teachers), I don't think forest school is riskier than classroom education." (543840-p.86); Emily: "It should be like this, you know those small cubicles?" Reporter: "Yes, I mean, this would be better, right?" Emily: "Yes, one for boys and one for girls." (Lowell, R., 2009, OO-M1-p.238); "I called the municipality, informing them that I was educating in that area and had an issue with the dogs there. The next time we went, the dogs were gone." (786939-p.76).

The meta-thematic analysis carried out in this study indicates that, while there are many positive aspects of these practices, there are also some negative aspects. However, there are also solutions available to address these negative aspects.

CONCLUSION and DISCUSSION

To gain insights into the current condition of forest school-based practices, the researcher conducted a meta-thematic analysis of existing research studies in the literature. This analysis revealed that forest school activities positively impact children's emotional, social, cognitive, psychomotor, and linguistic development. The findings related to emotional development are consistent with O'Brien's (2009) research, particularly in promoting self-confidence and increasing motivation. The codes derived from the data indicate that children feel more comfortable expressing themselves in the forest school environment, where they feel freer,

calmer, and happier (Harris, 2018). Additionally, forest school practices contribute to a range of emotional benefits, such as enhanced self-esteem, reduced stress, decreased dependency on parents, improved empathy skills, and the development of respect for nature and all living and non-living entities within it. These practices also foster curiosity, enable children to make independent decisions, and facilitate self-regulation. In particular, recent findings highlight the psychological benefits of forest school methods in alleviating stress and promoting happiness (Harris, 2023; Pamuk & Ahi, 2019), which in turn increase children's motivation and desire to attend school. Therefore, it can be concluded that forest school practices play a crucial role in providing emotional support to children, contributing to their overall well-being. However, while the literature provides valuable insights, further analysis is required to directly address specific research questions regarding the impact of forest school practices in preschool settings. The current findings primarily reflect literature-based conclusions, but the discussion would benefit from a deeper exploration of how these practices specifically manifest in preschool environments. More empirical evidence from preschool settings would help expand the understanding of how forest school practices can be effectively implemented and assessed for their impact on young children's development.

The theme of the effectiveness of forest school practices on social development reveals that these practices help children develop social skills such as cooperation, sharing, collaboration, and solidarity within social groups, as well as the ability to move in unison with the group (Ahi et al., 2023; Barrable and Arvanitis, 2019). It was found that they also develop leadership skills, enable positive relationships with their surroundings, instill a sense of responsibility, encourage polite behavior, and make it easier to make friends. In this context, it can be concluded that forest school practices enhance social skills and facilitate inclusion in social groups. Developing positive relationships with friends and teachers in forest school classes helps children more easily adopt the group's values and establish a stronger connection with nature (Barrable and Arvanitis, 2019). Research on the effects of forest school shows that regular and continuous forest school activities in forests or natural environments help children see themselves as part of nature, bond with nature, and explore the cycle of nature through experience (Dabaja, 2022, p. 746; Cudworth and Lumber, 2021, p. 2). At this point, it can be said that the findings of the current study are consistent with the results of these studies. This bond with nature does not form in a short period; it is a long process. The amount of time spent in natural environments where forest school education is implemented also affects children's interactions with themselves, their friends, teachers, and the natural environment (Mart and Waite, 2023). The more time children spend in the natural environment, the more they feel they belong to it (Garden and Downes, 2023; Sella et al., 2023). Therefore, conducting forest school activities regularly and at frequent intervals can positively affect the effectiveness of these practices.

One of the themes that emerged from the current study is the impact of forest school practices on cognitive development. It can be concluded that forest school practices positively affect student-teacher relationships and provide a flexible learning environment that allows for discovery-based learning (Harris, 2018), thus helping children to practice their learning skills (Dabaja, 2022). Additionally, providing opportunities for using all senses simultaneously during the learning process makes learning easier by aligning with each child's learning style and individual characteristics (Murray and O'Brien, 2005; Turtle et al., 2015). The development of scientific process skills such as observation, comparison, and data recording by forest school practices is consistent with the findings of Pamuk and Ahi's (2019) research. Besides, the findings of the current study indicate that forest school practices improve children's imagination, concentration, and attention skills, enable them to transfer and reuse what they learned in daily life, enhance problem-solving skills, and contribute to logical thinking and scientific reasoning by fostering cause-and-effect relationships. Additionally, codes related to the positive impact of forest school-based practices on children's motor and language development were found in the current study. Codes such as improving motor skills (T2, p. 60), providing ample space for active games (T3, p. 86), enhancing endurance (T7, p. 158), and developing body

coordination (T9, p. 77) indicate that forest school-based practices positively impact children's motor development.

Alongside the positive aspects of forest school practices, some negative situations also draw attention. It was observed that parents were concerned about their children getting sick when going to the forest in cold weather and the forest environment being open to certain risks and dangers. These concerns are also among the findings of Dillon et al. (2006). Dillon and colleagues (2006) recommended that the forest school implementation process be carefully planned and applied, and these activities be evaluated and necessary adjustments made in schools to eliminate these concerns. Furthermore, sufficient information should be provided to parents and children, and as much as possible, family participation activities should be included.

Teachers and administrators who participated in the research studies analyzed in the meta-thematic analysis found solutions to these concerns and potential risks by encouraging children to be active in cold weather, ensuring they wear weather-appropriate clothing and shoes, conducting risk analyses before activities to minimize risks, and changing locations when encountering risky situations. Another negative aspect related to forest school practices is the lack of sufficient awareness about these practices. Parents focusing on their children's academic success may find forest school practices unnecessary. Forest school pedagogy, which is student-centered, aims to enable students to build their own learning through hands-on experience and observation, unlike the subject-focused and academic success-oriented programs applied in schools (Harris, 2018). Scientists state that if a healthy connection is established between forest school practices and school practices (Dillon et al., 2006), it will support school learning and increase students' academic success (Harris, 2018). Some studies analyzed in the meta-thematic analysis mentioned that the low number of teachers trained in forest school pedagogy makes it challenging to effectively implement these practices. This deficiency has been addressed by supporting teachers' professional development through in-service training provided by institutions or by teachers themselves seeking education in this field.

This study found that forest school methods had numerous benefits for children's emotional, social, and cognitive development. In this context, it is believed that incorporating forest school principles into existing educational programs can benefit children's academic progress. Furthermore, giving pre-service and in-service training to teachers in forest school pedagogy can help to increase the effectiveness of these practices and extend them throughout our country's educational system.

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The author(s) declare no competing interests.

Data availability

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Ethical approval statement

Ethics approval was not required

Informed Consent

This study does not involve human participants or their data

Author contributions

These authors contributed equally to this work

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The Effect of Teachers' Person-Organization Fit on Work-Family Conflict and Life Satisfaction

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Abstract
The aim of the research is determining the effect of teachers' person-organization fit on work- family conflict and life satisfaction. The research sample consists of teachers working in schools affiliated with the Ministry of Education in Istanbul Sultanbeyli, Sancaktepe, Kartal, Pendik, Maltepe, and Tuzla. In the study, data were collected from 461 teachers with a questionnaire technique. The research was carried out with quantitative techniques. Frequency values, reliability and factor analysis, difference tests, correlation, and regression analysis were used in the analysis. According to the research findings; It has been determined that person-organization fit has a negative effect on teachers' work-family conflict. It was concluded that the person-organization fit does not have a significant effect on teachers' family-work conflict. Also, it was determined that the person-organization fit of teachers has a positive effect on teachers' life satisfaction. It was determined that the levels of work-family conflict and family-work conflict negatively affect teachers' life satisfaction. As a result of the different tests; It has been determined that there are significant differences in perceptions of person-organization fit, life satisfaction, and work-family conflict in terms of teachers' gender, marital status, age, total experience duration, and school-level they work.

Keywords: Person-Organization Fit, Work-Family Conflict, Family-Work Conflict, Life Satisfaction

INTRODUCTION

Due to the changes in the structure of the field of work and family, work-family conflict has become a rapidly developing issue (Rabenu et al., 2014: 1143). Because it is observed that the number of women and couples working in business life is increasing rapidly. In addition, the work and responsibilities expected from employees in competitive environments increase over time, and employees are not only asked to fulfill their responsibilities, but also to be foresighted, take initiative and dedicate themselves to their work when necessary. Therefore, employer expectations are increasing, working time is increasing, and employees are frequently asked to go on business trips. Therefore, differentiating and increasing expectations in the workplace cause employees to not always fulfill some of their responsibilities in their families as expected. Such a situation causes employees to experience conflict between their jobs and family responsibilities (Balcı, 2018: 5).

Life satisfaction, which is known as an important psychological factor affecting the social relations and mental health of individuals in daily life, was first revealed by Neugarten et al. (1961) (Şener, 2009: 5). Although this concept, which aims to increase the happiness level of individuals, has developed within the framework of the psychology paradigm, it has become widespread in a short period of time and has managed to take place in many different fields such as behavioral sciences, management, communication, management, sociology and management (Şimşek and Aktaş, 2015: 149). The concept of life satisfaction, which has recently been directly associated with the life that is being pursued, focuses on how satisfying the ongoing life of the individual is for him (Dikmen, 1995: 119). Life satisfaction refers to a description of a person's responsibilities in his daily life, his activities, his achievement of his goals, and the meaning of his

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life (Sunk, 2003: 1094). In this context, in the study, the relationship between the person-organization adaptation of teachers working in public schools affiliated to the Ministry of National Education (MEB), teachers' work-family conflict and life satisfaction was examined.

Person-Organization Fit

The interaction of the individual with the internal and external environment in a way that does not disturb his peace is known as "Fit". An individual's mental health is the result of two types of adaptation. The fit of the individual with himself is the first type of fit. This fit indicates that the individual's impulses, maxims and values are in balance. The second type of fit is the fit of the individual with his environment. This fit means that the needs of the individual and the principles and values of his environment are in balance. The fit of the individual's environment with values such as social, cultural and economic is also a source of external peace of mind. Emotional, cognitive and behavioral forces are of great importance in the adaptation of the individual to the organization (Başaran, 2004: 356). The differences of the individual are important in terms of organization, environment and interpersonal relations. Interpersonal, organizational and environmental fit are the factors affecting the success of employees (Tatlı, 2014: 121). In this context, it is seen that the definition of the concept of person-organization fit is important.

In general, there are many definitions of the concept of person-organization fit in the literature that are similar to each other. Chatman (1989) defined the concept of person-organization fit as the fit between the cultural characteristics of the organization and the personality traits and values of individuals. Cable (1995: 9-10) stated the concept of person-organization fit as the compatibility between the values of individuals and organizations based on various researches on this subject. Kristof (1996: 152), on the other hand, looks at the issue from a broader perspective and defines person-organization fit; It is defined as the fit between the value judgments, attributes and goals of the person and the organization, and the similarity between the characteristics of the person and the organizational culture. Yahyagil (2005: 12), on the other hand, expressed individual-organization fit within the scope of organizational behavior science. According to this form of expression, person-organization fit is the relationship between the individual value judgments of the employees of the institution and the value system within the institutions they work for.

The concept of person-organization fit has been a subject of debate since the 1950s (Xiaojun and Shizong, 2010: 120). In the late 1980s and early 1990s, different dimensions of person-organization fit, including value alignment, person-organization alignment, demand-ability and need-presentation alignment, began to be defined and became the subject of research. The concept of person-organization alignment is often conceptualized as "goal alignment" and "value alignment". Value alignment means that both the organization and the employee have similar values. Values are known to be an important element of both organizations and individuals that can be directly compared (Cable and Judge, 1997: 547).

A person whose values are compatible with the organization he is in begins to exhibit more positive attitudes towards the organization and tends to stay in the organization. Goal alignment, on the other hand, shows the fit of the similarity between the goals of the individuals and the goals of the organization when they are compared. If the goals of the organization are in fit with the goals of the person, the similarity of the goals attracts individuals to the institution. In the vast majority of empirical researches, value compatibility has been mostly emphasized (Verquer, et al., 2003: 474). The study of the fit between organizational and individual qualities that can influence attitudes and behaviors has been the focus of attention of many researchers (Finegan, 2000: 149).

Research on the concept of person-organization fit deals with the antecedents and consequences of fit between people and their organizations (Kristof, 1996: 1). The main construct of the Attraction-Selection-Attrition (ASA) theory put forward by Schneider (1987: 43) shows goal alignment as an important dimension of person-organization fit. According to this theory, people

are attracted to institutions that may be more effective in achieving their individual goals than other institutions. For this reason, goal alignment includes the similarity between the goals of individuals and the goals of the institution, and goal alignment is of great importance in achieving individual goals such as employees' job performance and individual attitudes such as commitment to the institution. In this context, the ability of institutions to sustain their own existence and gain sustainable competitive advantage in the market in business life requires a multilateral, heavy and complex working process. Achieving sustainability in this process will be the result of good management of many variables in business life. Employees are seen as one of the important variables in ensuring, increasing and maintaining the success of the organization. Studies carried out on the needs of the industrial revolution and its aftermath; It has focused on increasing the performance of employees and meeting the common expectations of employees and institutions within the framework of developing and changing conditions. As a result of these studies, the importance of ensuring fit between the employees and the organization has emerged. This two-sided requirement is seen as an important criterion and even a prerequisite for meeting the needs of employees and organizations. In this context, the concept of person-organization fit is among the leading concepts in terms of institutions. Person-organization fit is the fit that occurs when mutual needs and expectations are met and the relevant parties have similar characteristics. This concept is also expressed as the expression of the attitudes and behaviors of the employees towards work. Creating a balance between the expectations of the employee and the organization and ensuring fit between the parties reveals the fit of the person and the organization (Başaran, 2004: 187).

In addition, the concept of person-organization fit is also seen as individuals loving their organizations and feeling in connection with organizational ethics. Individuals who have achieved person-organization fit develop a social class in the organizational structure and see themselves as a part and element of this organizational structure (Steele, 2016: 16). In general, while person-organization fit can be defined as compatibility between individuals and organizations, some conceptual confusions arise due to the fact that the concept can be defined in different ways. For example; In organizational studies, two different adaptations are mentioned: integrative and complementary fit (Cable and Edwards, 2004: 822).

Integrative cohesion occurs when the employee and the organization have the same or similar basic characteristics. For example; When both the organization and the employee have the same values and support the same values, such as creativity and autonomy, this type of alignment is higher. In other words, if an individual has the same or similar characteristics as other individuals in the workplace, then integrative fit is referred to (Muchinsky and Monahan, 1987: 269-271).

Piasentin and Chapman (2007: 245) developed the complementary fit approach and put forward two basic criteria that distinguish this fit from other types of adaptation. The first criterion is defined as the perception that people are not similar to organizational qualities in terms of some basic criteria (such as knowledge, abilities, characteristics, personality) that they attach importance to. The second criterion is that people think that this difference makes them unique in the organization and therefore adds value to the organization. In other words, this type of Fit occurs when an employee perceives that his unique qualities are different from the qualities of others, but valuable. The complementary type of cohesion occurs when the individual or organization has the characteristics that each other needs and wants. Complementary Fit can be said to be high if the individual possesses the characteristics and abilities that the organization deems necessary for a particular job, or when the organization provides the wages and rewards that the employee needs or wants (Cable and Edwards, 2004: 822; Kristof, 1996: 3).

The Concept and Definition of Work-Family Conflict

In recent years, work-family conflict has become a rapidly developing issue due to changes in the structure of the work field and family field (Rabenu, et al., 2014: 1143). Because it is observed

that the number of women and couples working in business life is increasing rapidly. In addition, the work and responsibilities expected from employees in competitive environments increase over time, and employees are not only required to fulfill their responsibilities, but also to be foresighted, take initiative and dedicate themselves to their work when necessary. For this reason, employer expectations are increasing, working hours are increasing, and women are frequently asked to go on business trips. Therefore, differentiating and increasing expectations in the workplace cause employees to not always fulfill some of their responsibilities in their families as expected. Such a situation causes employees to experience conflict between their jobs and family responsibilities (Arslan, 2012: 99).

In the field of organizational behavior, this issue, which is called "Work-Family Conflict" (IAS), is becoming more and more important because it negatively affects the performance of individuals in terms of their positions in organizations, and studies are carried out to understand the nature of this process and to find out the factors that cause it and the negative consequences of this situation (Arslan, 2012: 100). This conflict arises as a result of the incompatibility of some sides of the role demands arising from the fields of work and family (Greenhaus and Beutell, 1985: 295). According to Greenhaus and Beutell (1985: 295), work-family conflict is "a form of intermediate role conflict in which role pressures from the spheres of work and family domains are mutually incompatible in some respects". In other words, work-family conflict is a state of tension that arises as a result of the pressure that occurs on the person who has two or more roles while trying to fulfill the requirements of these roles (Greenhaus and Beutell, 1985: 296). Accordingly, in role conflict, it is possible for the individual to be caught between two different roles due to the fact that he assumes one role while at the same time assumes another role (Arslan, 2012: 101).

Work-family conflict is seen as a result of the formation of a mismatch between the role adopted as a result of the necessity of being a member of an organization and the role adopted as a result of being a member of a family. It is formed as a result of a process in which an employee's behavior in one place is affected by positive or negative reactions in another place (Kaya, 2008: 256). Wayne (2004), on the other hand, defined the concept of work-family conflict as the negative interference of a person's job role with his or her family role. Kahn (2015) expressed the concept as the conflict between the demands from work roles and the demands from family roles.

Another important point regarding the possible incompatibilities that may occur between the work life and family life of individuals is that these two factors affect each other in two ways. The concept of work-family conflict, which is as important as work-family conflict and moves in the opposite direction compared to work-family conflict, is called "Family-Work Conflict". Based on Greenhaus and Beutell's findings on the concept of "work-family conflict", Carlson, Kacmar and Williams (2000) stated that there are "Work-Family Conflict" and "Family-Work Conflict" as the two main dimensions of this relationship.

Family-work conflict, which is expressed as the family roles of individuals preventing them from fulfilling their job requirements, shows the negative situation that occurs as a result of the responsibilities of individuals in the family affecting their work performance and productivity (Arslan, 2012: 103). Different situations such as the parent's having a sick child at home prevents or negatively affects the attendance of work (Çetinkaya, 2011: 28), life changes such as moving, problems with the individual's family, and elderly individuals in need of care at home are among the examples of family-work conflict.

The Concept of Life Satisfaction and Its Importance

According to the definition made by Neugarten et al. (1961), life satisfaction refers to the situation that occurs as a result of comparing what an individual wants from his life with what he gets (Softa, et al., 2015: 13). According to Veenhoven (1996), the individual's assessment of the quality of life as a whole is life satisfaction. In other words, it is the level at which the individual is satisfied with his life. Shin and Johnson saw life satisfaction as a general assessment

of a person's quality of life according to some criteria (Diener, et al., 1985: 71). An increase in the rate of achieving individual goals and objectives will cause life satisfaction to increase in the same way. In this context, life satisfaction can be defined as the level of achievement of people's goals and objectives (Aysan and Bozkurt, 2004: 2). Life satisfaction refers to a description of a person's responsibilities in his daily life, his activities, his achievement of his goals, and the meaning of his life (Sunk, 2003: 1094).

Life satisfaction, which expresses the psychological state in which individuals' perspectives on life, their expectations from life and the degree to which it is met are effective, also affects organizational life (Yılmaz and Altınok, 2009: 456). From an organizational point of view, the concept of satisfaction is defined as the satisfaction that occurs as a result of whether the material and moral demands expected from the organization of a new or existing member are met. As some of the factors that provide satisfaction in the organizational sense; material factors such as wages, salaries, bonuses, etc., the nature of the job, the appreciation of the work seen, and the promotion within the organization can be said (Göksu, 2007: 191). In addition, the high level of organizational commitment of employees also has a positive effect on the level of life satisfaction (Özdevecioğlu and Aktaş, 2007: 3-4).

The concept of need has a very important place in life satisfaction. When the needs of the individual are met, pleasure and happiness arise, but when they are not met, emotions that cause sadness and pain arise (Yılmaz and Sünbül, 2009: 474). In daily life, people have some basic needs such as food and drink, success or monetary rewards. These basic needs cause people who are in search of satisfaction to exhibit certain behaviors (Şimşek and Çelik, 2014: 103). In his study, Dikmen (1995) divided life into work and non-work. Business life is the environment in which the individual spends a certain part of the day and is asked to do the desired work for a certain fee or salary. Life outside of work; It is more beneficial to divide it into leisure time and other non-work time. Leisure time includes the time that a person devotes only to himself and to doing things that he enjoys. In general, people can't spend all of their non-work time as free time. His wife, children, relatives, friends have to do different things in the future, perform the necessary responsibilities at home, etc. For this reason, other non-work time is also expressed as time reserved for marriage or social fit. Life satisfaction, on the other hand, is seen as the emotional reaction or attitude of a person towards his whole life, which is defined as work, leisure time and other non-work time (Dikmen, 1995: 117-118).

Life satisfaction, which covers the whole of life, is known as an important indicator of what kind of mood the individual is in in an emotional dimension. Any conflicts, obstacles, difficulties and sudden negative changes that may occur in the life of the individual may cause a decrease in the degree of life satisfaction (Demirel and Canat, 2004: 6). In people with low levels of life satisfaction, this situation has negative consequences. For example, depression may occur. Individuals in the depression period are in negative emotional states such as tired, sad, helpless, hopeless and reluctant. Therefore, individuals experience emotionally diverse moods. As a matter of fact, different moods are not only related to the emotional dimension, but also have physical dimensions. In other words, it can be seen in negative situations such as anorexia and sleep disorders in a depressed person (Demirel and Canat, 2004: 7).

The level of life satisfaction also has a very important place in our work and non-work lives. If we do not spare enough time for our sleep patterns, eating and drinking, resting and vacationing that will keep us energetic in our daily lives, our work performance decreases and the balance between work and life is observed. However, when we achieve a work-life balance, we are more confident in ourselves, we feel more energetic and motivated (Erdoğan, 2016: 43). In addition, if employees create a healthy balance in their work and non-work life; Working efficiency and high productivity are ensured, employees work longer in organizations, organizations experience lower levels of illness and absenteeism, organizations can add better quality personnel to themselves, and there is an increase in the morale level of the personnel and their commitment to the organization. By creating a work-life balance, individuals can be clearer, sharper and more creative towards events and situations, as well as being more motivated (Morgenstern, 2004:

28). In this sense, it is not possible to consider the concept of life satisfaction separately from business life (Keser, 2003: 80). Therefore, the importance given to people in both institutions and social relations is increasing day by day (Yılmaz and Sünbül, 2009: 173). In this context, individuals' satisfaction in business life significantly affects their general life satisfaction and productivity in general. It is very important in terms of organizational goals to achieve more satisfaction and less exhaustion by revealing the factors that have both positive and negative effects on the life satisfaction of individuals in organizations (Ünal, et al., 2001: 114).

Research on individuals' life satisfaction has examined the impact of various variables such as age, occupational satisfaction, social support, economic income, and education level. Diener and Suh (1997) stated that positive emotions decrease with age, but this does not directly reduce life satisfaction. Braun (2000) also found a low level of significant relationship between age and life satisfaction, while Blanchflower and Oswald (2004) identified a "U" shaped relationship between age and happiness. Factors such as parental relationships, self-esteem, interpersonal relationships, and academic achievement have also been associated with high life satisfaction (Gilman & Huebner, 2006; Proctor, Linley & Maltby, 2009). Studies on income level indicate that economic status contributes positively to life satisfaction (Boes & Winkelmann, 2010). While Yetim (1991) stated that higher education may lower satisfaction due to rising expectations, it was also found that education increases women's life satisfaction by enhancing independence and self-actualization. In studies conducted with teachers, factors such as professional burnout, work-family conflict, and job satisfaction were found to affect life satisfaction. Burnout levels varied based on school type and length of service but not by gender (Çelik & Üstüner, 2018). Work-family conflict negatively affects teachers' life satisfaction, and female teachers report higher satisfaction levels compared to males (Fırat & Cula, 2016). Furthermore, job satisfaction mediates the relationship between work-family conflict and life satisfaction, and person-job fit positively contributes to life satisfaction (Türker & Çelik, 2019; Çırpan et al., 2018).

The professional life of teachers directly affects not only their individual performance, but also the overall efficiency and student achievement within the education system (Fırat & Cula, 2016). In this context, teachers' processes of maintaining a balance between their work and private lives are of critical importance. Although current research has revealed the impact of work-family conflict on teachers, there are limited studies on how this conflict is shaped in the context of person-organization Fit. Therefore, this research aims to fill an important gap in the literature by analyzing how teachers' person-organization alignments affect work-family conflict and life satisfaction. The findings may have important implications for both education policies and school administrations. Developing institutional policies that will support teachers' person-organization fit can reduce work-family conflict and thus increase teachers' overall life satisfaction. Determining strategies that will help teachers better adapt to the work environment, especially for education administrators, will make positive contributions to the quality of education as well as increasing professional satisfaction.

The aim of this study is to examine the relationship between the person-organization adaptation of teachers' work-family conflict and life satisfaction

For this purpose, answers to the following questions will be sought in the research:

1. Personal-organization fit levels, work-family conflict levels and life satisfaction levels of teachers working in schools; Is there a significant difference according to gender, marital status, age, total period of experience, duration of employment at the current school, whether or not there is an administrative duty and the education level of the school?
2. How does the person-organization fit of teachers affect their work-family/family-work conflict and life satisfaction levels?
3. How do the work-family/family-work conflict levels of teachers affect their life satisfaction levels?

METHOD

Model of the Research

In this study, which aims to examine the impact of person-organization fit on job and family conflict and life satisfaction, a quantitative research approach was adopted. Specifically, the correlational model employed. Survey models are designed to reach conclusions about a population composed of numerous elements by examining the entire population or a representative sample. The correlational survey model, as a subtype of this approach, seeks to identify the existence and/or degree of relationships or mutual variations between two or more variables (Karasar, 2016: 111-114).

The model used in the research is presented in Figure 1 below.

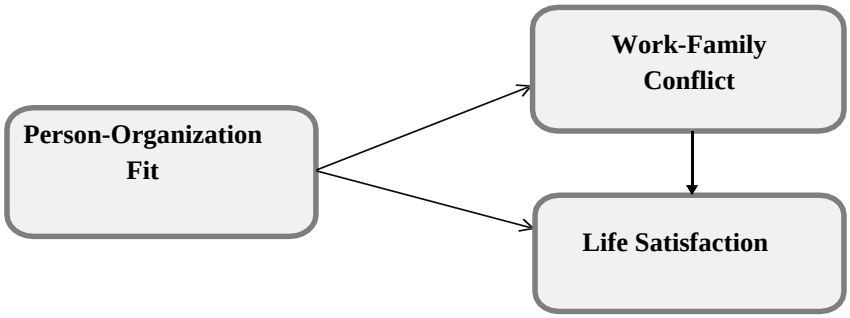


Figure 1. Model of the Research

Sample

The population of the study consists of teachers at different school types and levels in public schools in Istanbul. The sample of the study consists of 461 teachers working in schools in Sultanbeyli, Pendik, Tuzla, Kartal, Sancaktepe and Çekmeköy districts of Istanbul in the 2019-2020 academic year. While determining the sample of the research due to problems such as financial constraints and time, the selection of random sample, which has a very important place in the sampling theory, and the simple random sampling method were used.

Demographic characteristics of participant are given in Table 1 below.

Table 1. Demographics and Participant Opinions

Variable	Group	Number (f)	Percentage (%)
Gender	Woman	258	56,0
	Male	203	44,0
Marital Status	Married	345	74,8
	Single	116	25,2
Age	29 years and younger	77	16,7
	30-39 years old	315	68,3
	40 years and older	69	15,0
Total experience Your duration	10 years and below	200	43,4
	11-20 years	178	38,6
	21 years and older	83	18,0
Your current period of study at the school	5 years and under	252	54,7
	6 years and older	209	45,3
Do you have an administrative role?	Yes	40	8,7
	No	421	91,3
School level	Primary school	205	44,5

Secondary school	155	33,6
High school	101	21,9

As can be seen in Table 1, 44.0% of the teachers participating in the study were female and 56.0% were male. In addition, in terms of marital status, the majority of the participants are married teachers. While 74.8% of the individuals participating in the study were married, 25.2% were single. In terms of age, people between the ages of 29 and under have a rate of 16.7%, people between the ages of 30-39 have a rate of 68.3%, and people between the ages of 40 and over have a rate of 15.0%. According to the statistics of the teachers participating in the research in terms of total experience periods; Teachers with a total experience of 10 years or less constitute the majority of the participants (43.4%). The percentage of teachers with a total experience period of 11-20 years was 38.6%. Teachers with a total experience of 21 years or more constituted the minority (18.0%). In addition, according to 4.10; Teachers with 5 years or less of experience in the current school have a percentage of 54.7%, while teachers with a total experience of 6 years or more have a percentage of 45.3%.

In terms of the administrative duties of teachers; With a percentage of 91.3%, the vast majority do not have administrative duties, while 8.7% have administrative duties. According to the descriptive statistics of the teachers participating in the research; Teachers working in high school have 21.9%, teachers working in secondary school have 33.6%, and teachers working in primary school have 44.5%.

Data Collection Tools

Personal Information Form, Person-Organization Fit Scale, Work-Family Conflict Scale, Life Satisfaction Scale were used in the research. The permissions of the scales have been obtained in advance. In the application of the scales, the data obtained on a completely voluntary basis were kept confidential.

Personal Information Form

In the study, a "Personal Information Form" was prepared by the researcher in order to determine the personal information of the participating teachers. In this form, a total of 7 questions were prepared to determine the variables of "age, gender, marital status, total period of experience, duration of employment in the school where he is currently working, school level, whether he has an administrative position or not".

Person-Organization Fit Scale

On this scale, there are questions about person-organization fit. The person-organization Fit scale developed by Netemeyer et al. (1997) consists of 4 items in total. The translation of the scale into Turkish was carried out by Turunç and Çelik (2012) and the reliability coefficient was found to be 0.81. In addition, the person-organization fit scale is a one-dimensional scale. The 5-point Likert scale was used to answer the items in the scales and they were scored as "1-strongly disagree / 5-strongly agree". Cronbach's Alpha value of the person-organization Fit scale was found to be very high as 0.938. Since this value exceeds the value of 0.600 accepted by Hair et al., (2015), there is no problem in using the scale in the research and all expressions in the scale provide a high level of reliability as a result of the analysis.

In the study, the limit values specified by Hair et al., (2014) and Kurtuluş (2010) were taken into consideration for factor analysis. The KMO sample suitability value of the person-organization fit scale is 0.794 and the result of Bartlett's Sphericity Test is 0.000 is statistically significant. According to the correlation values between items, all items of the person-organization fit scale are above the critical value of 0.40. For this reason, it is possible to state that it is appropriate to use the items of the person-organization fit scale in the analysis. In addition, the total variance of the person-organization Fit scale was found to be 84.51%. All items representing the scale are combined in a single factor. It is possible to state that the person-organization fit scale is a suitable scale for use in the research, since the limit value that Hair et al. (2015) considers

appropriate for the total variance explained is above 60% and the limit value for the KMO value is above 0.60

Work-Family Conflict Scale

The work-family life conflict scale developed by Netemeyer et al. (1996) was used to measure the work-family life conflict levels of employees. The scale consists of two sub-dimensions that aim to measure the levels of work-family conflict arising from employees' work life and family-work conflict arising from family life. There are five items related to both dimensions in the scale. The answers were taken with a 5-point Likert scale (1 = Strongly disagree, 5 = Strongly agree). As a result of the reliability analysis conducted by Netemeyer et al. (1996), the Cronbachalpha reliability coefficients of the work-family conflict and family-work conflict dimensions were found to be .88 and .89, respectively. The scale was translated into Turkish by Efeoğlu (2006) and applied in the pharmaceutical industry. As a result of the reliability analysis, it was determined that the Cronbach alpha reliability coefficients of the items were between .83 and .88. Confirmatory factor analysis was performed to test the construct validity of the scale. As a result of the factor analysis, it was determined that the data adapted to the two-factor structure of the scale and the factor burdens were between .67 - .88 for the work-family conflict dimension and between .69 and .80 for the family-work conflict dimension. As a result of the reliability analysis, the total Cronbach alpha reliability coefficient of the scale was found to be .86, the work-family conflict dimension was .90 and the family-work conflict dimension was found to be .86. Cronbach's Alpha value of the scale was found to be very high as 0.943. Since this value exceeds the value of 0.600, which is accepted as a value by Hair et al. (2015), it was seen that there was no problem in using the scale in the research and all expressions on the scale provided a high level of reliability as a result of the analysis.

In the construct validity analyses for the work-family conflict scale, the KMO sample suitability value was 0.838 and the Bartlett's Sphericity Test result was statistically significant at 0.000. According to the correlation values between items, all items of the work-family conflict scale are above the critical value of 0.40. For this reason, it is possible to state that it is appropriate to use the items of the work-family conflict scale in the analysis. In addition, the total variance of the work-family conflict scale was found to be 81.58%. All items representing the scale are combined in a single factor. The results obtained are that Hair et al., (2015) found that the limit value for the total variance explained was above 60% and the limit value for the KMO value was above 0.60, so it is a suitable scale for the use of the work-family conflict scale in the research.

Life Satisfaction Scale

The life satisfaction scale was created by Diener et al. (1985) and consists of 5 items. In addition, the scale consists of a single dimension. The scale was adapted to Turkish by Yetim (1991) and the reliability coefficient of the scale was found to be 0.78. A 5-point Likert scale was used to answer the items in the scale and they were scored as "1-strongly disagree / 5-strongly agree". Cronbach's Alpha value of the scale was found to be high as 0.883. Since this value exceeds the value of 0.600 accepted by Hair et al., (2015), it was seen that there was no problem in using the scale in the research and all expressions on the scale provided a high level of reliability as a result of the analysis. According to the results of the factor analysis made to determine the construct validity of the scale; The KMO sample suitability value was 0.822 and the Bartlett's Sphericity Test result was statistically significant at the level of 0.000. According to the correlation values between items, all items of the life satisfaction scale are above the critical value of 0.40. For this reason, it is possible to state that it is appropriate to use the items of the life satisfaction scale in the analysis. In addition, the total variance of the life satisfaction scale was found to be 68.28%. All items representing the scale are combined in a single factor. It is possible to state that the life satisfaction scale is a suitable scale for use in the research, since the limit value that Hair et al. (2015) considers appropriate for the total variance explained is above 60% and the limit value for the KMO value is above 0.60.

Analysis of Data

The research was carried out with quantitative techniques. In the study, the survey method was used to collect data and a total of 469 people were surveyed, but some of these questionnaires were excluded from the analysis due to incorrect or incomplete filling, and as a result, only 461 questionnaires were analyzed through the SPSS 21.00 package program. In the study, firstly, the reliability and validity of the collected data were tested, and for this purpose, Cronbach's Alpha reliability value and Factor analysis results were evaluated. Descriptive statistics and difference tests (t-test and ANOVA) were carried out by taking into account the demographic characteristics of the individuals who participated in the study and the opinions of the participants. Correlation and regression analyses were performed to determine the relationships and effects between the relevant variables of the research. Frequency values, reliability and factor analysis, difference tests, correlation and regression analyses were used in the analysis of the data.

RESULTS

Person-Organization Fit by Gender of Teachers, Work-Family/Family-Work Conflict, Life Satisfaction Competencies

A t-test was performed to determine whether the opinions of the teachers participating in the study differed significantly in terms of their gender. Table 2 contains the results of the t-test. According to the findings, a statistically significant difference was found in teachers' views on person-organization fit, work-family conflict and family-work conflict ($p \leq 0.05$). On the other hand, there was no statistically significant difference in teachers' opinions about life satisfaction ($p > 0.05$). When the findings on person-organization fit were examined, the person-organization Fit of male teachers ($\bar{x} = 4.05$) was higher than the person-organization Fit of female teachers ($\bar{x} = 3.76$). In other words, male teachers experience more person-organization fit than female teachers. When the findings on work-family conflict were examined; Work-family conflict of male teachers ($\bar{x} = 2.35$) is lower than work-family conflict of female teachers ($\bar{x} = 3.17$). The level of work-family conflict is less common in male teachers than in female teachers. In addition, the family-work conflict of male teachers ($\bar{x} = 2.03$) is lower than the family-work conflict of female teachers ($\bar{x} = 2.19$). In other words, the level of family-work conflict is less common in male teachers than in female teachers.

Table 2. Person-Organization fit, Work-Family/Family-Work Conflict, Life Satisfaction Competencies by Gender of Teachers t-Test Results

			Leneve Test		T-test		Group statistics	
		N	F	p	t	p	Avg.	Std. S.
Person-Organization Fit	Woman	258	,687	,408	-5,644	,000	3,7616	,47900
	Male	203					4,0591	,65217
Work-Family Conflict	Woman	258	24,840	,000	9,568	,000	3,1721	,97206
	Male	203					2,3547	,82577
Family-work Conflict	Woman	258	21,217	,000	2,393	,017	2,1953	,78625
	Male	203					2,0305	,66187
Life Satisfaction	Woman	258	2,794	,095	-,650	,516	3,1612	,87493
	Male	203					3,2128	,80668

Person-Organization Fit According to Marital Status of Teachers, Work-Family/Family-Work Conflict, Life Satisfaction Competencies

A t-test was performed to determine whether the responses of the teachers participating in the study differed significantly in terms of their marital status. Table 3 shows the t-test results. According to Table 3; A statistically significant difference was found in teachers' opinions about life satisfaction, work-family conflict and family-work conflict ($p \leq 0.05$). On the other hand, there was no statistically significant difference in teachers' opinions about person-organization fit ($p > 0.05$). When the findings about life satisfaction are examined; Life satisfaction of married

teachers (x =3.31) is higher than life satisfaction of single teachers (x =2.79). In other words, married teachers have a higher level of life satisfaction than single teachers.

When the findings on work-family conflict were examined; Work-family conflict of married teachers (x = 2.99) is higher than work-family conflict of single teachers (x = 2.28). The level of work-family conflict is higher in married teachers than in single teachers. In addition, the family-work conflict of married teachers (x =2.17) is higher than the family-work conflict of single teachers (x =1.96). In other words, the level of family-work conflict is less common in single teachers than in married teachers.

Table 3. Person-Organization Fit, Work-Family/Family-Work Conflict, Life Satisfaction Competencies According to Marital Status of Teachers t-Test Results

		Leneve Test		T-test		Group statistics	
		N	F	p.	t	p	Avg.	Std. S.
Person-Organization Fit	Married	345	28,811	,000	1,769	,078	3,9203	,49542
	Single	116					3,8103	,77713
Work-Family Conflict	Married	345	24,695	,000	6,948	,000	2,9901	,99231
	Single	116					2,2828	,80393
Family-work Conflict	Married	345	,848	,358	2,641	,009	2,1751	,72366
	Single	116					1,9672	,76075
Life Satisfaction	Married	345	,834	,362	6,000	,000	3,3159	,82307
	Single	116					2,7914	,78879

Person-Organization Fit, Work-Family/Family-Work Conflict, Life Satisfaction Competencies by Age of Teachers

Anova test was performed to determine whether the responses of the teachers participating in the study differed significantly in terms of their age. The findings related to the results of the Anova test are given in Table 4. According to Table 4; A statistically significant difference was found in teachers' views on person-organization fit, work-family conflict, family-work conflict and life satisfaction (p≤ 0.05).

Table 4. Person-Organization Fit, Work-Family/Family-Work Conflict, Life Satisfaction Competencies by Age of Teachers Anova Results

						Anova	
		N	Avg.	Std. S.	Std. Error	F	p
Person-Organization Fit	29 years and younger	77	3,7922	,41240	,04700	8,832	,000
	30-39 years old	315	3,8603	,62963	,03548		
	40 years and older	69	4,1522	,41617	,05010		
	Sum	461	3,8926	,58036	,02703		
Work-Family Conflict	29 years and younger	77	2,7169	,65562	,07472	29,235	,000
	30-39 years old	315	2,6610	,94773	,05340		
	40 years and older	69	3,6087	1,15118	,13859		
	Sum	461	2,8121	,99618	,04640		
Family-work Conflict	29 years and younger	77	2,2779	,49858	,05682	3,802	,023
	30-39 years old	315	2,0590	,73368	,04134		
	40 years and older	69	2,2406	,92710	,11161		
	Sum	461	2,1228	,73787	,03437		
Life Satisfaction	29 years and younger	77	3,1221	,66976	,07633	7,617	,001
	30-39 years old	315	3,1200	,86264	,04860		
	40 years and older	69	3,5449	,85878	,10339		
	Sum	461	3,1839	,84504	,03936		

In order to determine exactly in which groups these differences occurred, the Tukey test, which is one of the Post-Hoc tests, was performed. Table 5 presents the findings of the Tukey test.

When the findings on person-organization fit in Table 5 are examined; The person-organization Fit of teachers with an age range of 29 and less was lower than the person-organization Fit of teachers with an age range of 40 and more (Mean difference= (-0.359); p= 0.000). Teachers with an age range of 29 and less experience less person-organization fit than teachers with an age range of 40 and more. The person-organization Fit of teachers between the ages of 30-39 was lower than the person-organization Fit of teachers with an age range of 40 and more (Mean difference= (-0.292); p= 0.000). In other words, teachers between the ages of 30-39 experience less person-organization fit than teachers with an age range of 40 and more.

When the findings about work-family conflict are examined; Work-family conflict of teachers with an age range of 29 and less was lower than that of teachers with an age range of 40 and more (Mean difference= (-0.891); p= 0.000). Teachers with an age range of 29 and less experience less work-family conflict than teachers with an age range of 40 and more. Work-family conflict of teachers between the ages of 30-39 was lower than that of teachers aged 40 and more (mean difference= (-0.947); p= 0.000). In other words, teachers between the ages of 30-39 experience less work-family conflicts than teachers with an age range of 40 and more.

In addition, when the findings about life satisfaction are examined; The life satisfaction of teachers with an age range of 29 and less was lower than the life satisfaction of teachers with an age range of 40 and more (mean difference= (-0.422); p= 0.007). Teachers with an age range of 29 and less have a lower level of life satisfaction than teachers with an age range of 40 and more. The life satisfaction of teachers aged 30-39 was lower than that of teachers aged 40 and more (mean difference= (-0.947); p= 0.000). In other words, teachers between the ages of 30-39 have less level of life satisfaction than teachers with an age range of 40 and more.

Table 5. Person-Organization Fit, Work-Family/Family-Work Conflict, Life Satisfaction Competencies by Age of Teachers Tukey Test Results

Dependent variable	(I) Age	(J) Age	Avg. difference (I-J)	Std. Error	Meaningfulness.
Person-Organization Fit	29 years and younger	30-39 years old	-,06811	,07255	,616
	29 years and younger	40 years and older	-.35997*	,09461	,000
	30-39 years old	40 years and older	-.29186*	,07586	,000
Work-Family Conflict	29 years and younger	30-39 years old	,05593	,11952	,886
	29 years and younger	40 years and older	-.89181*	,15585	,000
	30-39 years old	40 years and older	-.94774*	,12496	,000
Family-work Conflict	29 years and younger	30-39 years old	,21887	,09324	,050
	29 years and younger	40 years and older	,03734	,12158	,949
	30-39 years old	40 years and older	-,18153	,09749	,151
Life Satisfaction	29 years and younger	30-39 years old	,02208	,11592	,988
	29 years and younger	40 years and older	-.42285*	,13811	,007
	30-39 years old	40 years and older	-.42493*	,11074	,000

Person-Organization Fit, Work-Family/Family-Work Conflict, Life Satisfaction Competencies According to the Total Experience Period of Teachers

Anova test was performed to determine whether the responses of the teachers participating in the study differed significantly in terms of total experience duration. The findings related to the results of the Anova test are given in Table 6. According to Table 6; A statistically significant difference was found in teachers' opinions about person-organization fit, work-family conflict

and life satisfaction (p≤ 0.05). On the other hand, there was no statistically significant difference in teachers' views on family-work conflict (p> 0.05).

Table 6. Person-Organization Fit, Work-Family/Family-Work Conflict, Life Satisfaction Competencies According to the Total Experience Period of Teachers Anova Results

		N	Avg.	Std. S	Std. Error	Anova	
						F	p
Person-Organization Fit	10 years and below	200	3,9425	,51162	,03618	3,045	,049
	11-20 years	178	3,8090	,54724	,04102		
	21 years and older	83	3,9518	,76355	,08381		
	Sum	461	3,8926	,58036	,02703		
Work-Family Conflict	10 years and below	200	2,7140	,90215	,06379	3,334	,037
	11-20 years	178	2,8124	1,08844	,08158		
	21 years and older	83	3,0482	,97710	,10725		
	Sum	461	2,8121	,99618	,04640		
Family-work Conflict	10 years and below	200	2,1400	,54173	,03831	1,216	,297
	11-20 years	178	2,0629	,77800	,05831		
	21 years and older	83	2,2096	1,00966	,11082		
	Sum	461	2,1228	,73787	,03437		
Life Satisfaction	10 years and below	200	3,1020	,82547	,05837	6,733	,001
	11-20 years	178	3,1348	,80550	,06038		
	21 years and older	83	3,4867	,91502	,10044		
	Sum	461	3,1839	,84504	,03936		

In order to determine exactly in which groups these differences occurred, the Tukey test, which is one of the Post-Hoc tests, was performed. Table 4.6 presents the findings of the Tukey test. When the findings about work-family conflict in Table 7 are examined; Work-family conflict of teachers with a total experience of 10 years or less was lower than that of teachers with a total experience of 21 years or more (Mean difference= (-0.334); p= 0.027). In other words, teachers with a total experience of 10 years or less experience experience less work-family conflicts than teachers with a total experience of 21 years or more.

In addition, when the findings about life satisfaction are examined; The life satisfaction of teachers with a total experience of 10 years or less is lower than the life satisfaction of teachers with a total experience of 21 years or more (mean difference= (-0.384); p= 0.001). Teachers with a total experience of 10 years or less have a lower level of life satisfaction than teachers with a total experience of 21 years or more. The life satisfaction of teachers with a total experience of 10 years or less was lower than the life satisfaction of teachers with a total experience of 21 years or more (Mean difference= (-0.351); p= 0.005). In other words, teachers with a total experience of 10 years or less have a lower level of life satisfaction than teachers with a total experience of 21 years or more.

Table 7. Person-Organization Fit, Work-Family/Family-Work Conflict, Life Satisfaction Competencies According to the Total Experience Period of Teachers Tukey Test Results

Dependent variable	(i) Total Experience	(J) Total Experience	Avg. difference (I-J)	Std. Error	Meaningfulness.
Person-Organization Fit	10 years and below	11-20 years	,13351	,05954	,065
	10 years and below	21 years and older	-,00931	,07544	,992
	11-20 years	21 years and older	-,14282	,07680	,152
Work-Family Conflict	10 years and below	11-20 years	-,09836	,10213	,601
	10 years and below	21 years and older	-.33419*	,12941	,027
	11-20 years	21 years and older	-,23583	,13174	,174
Life Satisfaction	10 years and below	11-20 years	-,03283	,08601	,923
	10 years and below	21 years and older	-.38475*	,10899	,001
	11-20 years	21 years and older	-.35192*	,11094	,005

Person-Organization Fit, Work-Family/Family-Work Conflict, Life Satisfaction Competencies According to the Working Time of Teachers in the School where they are currently working

In order to determine whether the responses of the teachers participating in the study differ significantly in terms of the duration of experience in the current school, a t-test was performed and the results of the t-test are found in Table 8. According to Table 8; A statistically significant difference was found in teachers' opinions about work-family conflict ($p \leq 0.05$). On the other hand, there was no statistically significant difference in teachers' views on person-organization, family-work conflict and life satisfaction Fit ($p > 0.05$).

When the findings on work-family conflict were examined, the work-family conflict of teachers with 6 years or more of experience in the current school ($x = 2.96$) was higher than the work-family conflict of teachers with 5 years or less of experience in the current school ($x = 2.68$). Teachers with 6 years or more of experience in the current school have more work-family conflicts compared to teachers with 5 years or less of experience in the current school.

Table 8. Person-Organization Fit, Work-Family/Family-Work Conflict, Life Satisfaction Competencies t-Test Results According to the Working Time of the Teachers in the School where they are currently working

			Leneve Test		T-test		Group statistics	
		N	F	Meaningfulness.	t	Meaningfulness. (2-tail)	Avg.	Std. S.
Person-Organization Fit	5 years and under	252	1,034	,310	,009	,992	3,8929	,58528
	6 years and older	209					3,8923	,57576
Work-Family Conflict	5 years and under	252	26,932	,000	-2,980	,003	2,6873	,88511
	6 years and older	209					2,9627	1,09893
Family-work Conflict	5 years and under	252	,546	,460	-,499	,618	2,1071	,73552
	6 years and older	209					2,1416	,74203

Life Satisfaction	5 years and under	252	19,312	,000	-,969	,333	3,1492	,91432
	6 years and older	209					3,2258	,75314

Person-Organization Fit, Work-Family/Family-Work Conflict, Life Satisfaction Competencies According to Whether Teachers Have Administrative Duties or Not

A t-test was performed to determine whether the responses of the teachers participating in the study differed significantly in terms of administrative task. According to Table 9; A statistically significant difference was found in teachers' views on person-organization, work-family conflict and life satisfaction (p≤ 0.05).

When the findings on person-organization fit were examined, the person-organization fit of teachers who had administrative duties at school (x =4.15) was higher than the person-organization fit of teachers who did not have administrative duties at school (x =3.86). The level of person-organization fit is higher in teachers who have administrative duties in the school compared to teachers who do not have administrative duties in the school.

When the findings about work-family conflict are examined; Work-family conflict of teachers who have administrative duties at school (x = 3.20) is higher than work-family conflict of teachers who do not have administrative duties at school (x = 2.77). The level of work-family conflict is higher in teachers who have administrative duties in the current school than in teachers who do not have administrative duties in the school.

When the findings about life satisfaction are examined, the life satisfaction of teachers who have administrative duties in school (x = 3.68) is higher than the life satisfaction of teachers who do not have administrative duties in school (x = 3.13). Teachers who have administrative duties in the current school have a higher level of life satisfaction compared to teachers who do not have administrative duties in the school.

Table 9. Person-Organization Fit, Work-Family/Family-Work Conflict, Life Satisfaction Competencies t-Test Results According to Whether Teachers Have Administrative Duties or Not

			Leneve Test		T-test		Group statistics	
		N	F	Meaningfulness.	t	p	Avg.	Std. S.
Person-Organization Fit	Yes	40	12,982	,000	2,960	,003	4,1500	,20255
	No	421					3,8682	,59848
Work-Family Conflict	Yes	40	,437	,509	2,593	,010	3,2000	,84002
	No	421					2,7753	1,00283
Family-work Conflict	Yes	40	,116	,733	-1,823	,069	1,9200	,68508
	No	421					2,1420	,74057
Life Satisfaction	Yes	40	17,590	,000	3,946	,000	3,6800	1,07637
	No	421					3,1368	,80552

Person-Organization Fit, Work-Family/Family-Work Conflict, Life Satisfaction Competencies of Teachers According to School Level

Anova test was performed to determine whether the responses of the teachers participating in the study differed significantly in terms of school level. Findings related to the results of the Anova test are given in Table 10. According to Table 10; A statistically significant difference was found in teachers' opinions about person-organization fit, work-family conflict and life satisfaction (p≤ 0.05). On the other hand, there was no statistically significant difference in teachers' views on family-work conflict (p> 0.05).

Table 10. Person-Organization Fit, Work-Family/Family-Work Conflict, Life Satisfaction Competencies of Teachers According to School Level Anova Results

						Anova	
		N	Avg.	Std. S.	Std. Error	F	p
Person-Organization Fit	Primary school	205	3,8728	,60974	,03030	3,502	,031
	Secondary school	155	4,2500	,25820	,06455		
	High school	101	3,9500	,18947	,02996		
	Sum	461	3,8926	,58036	,02703		
Work-Family Conflict	Primary school	205	2,8454	1,03718	,05154	5,104	,006
	Secondary school	155	3,1000	,72296	,18074		
	High school	101	2,3600	,32408	,05124		
	Sum	461	2,8121	,99618	,04640		
Family-work Conflict	Primary school	205	2,1437	,77549	,03853	2,880	,057
	Secondary school	155	1,7000	,51640	,12910		
	High school	101	2,0800	,09923	,01569		
	Sum	461	2,1228	,73787	,03437		
Life Satisfaction	Primary school	205	3,1146	,81113	,04031	14,763	,000
	Secondary school	155	4,1000	,92952	,23238		
	High school	101	3,5200	,87448	,13827		
	Sum	461	3,1839	,84504	,03936		

In order to determine exactly in which groups these differences occurred, the Tukey test, which is one of the Post-Hoc tests, was performed. When the findings on person-organization fit in Table 10 are examined; The person-organization Fit of teachers whose place of work is primary school is lower than the person-organization fit of teachers whose place of work is secondary school (Mean difference= (-0.377); p= 0.029). Teachers who teach in primary school have less individual-organization adaptation than teachers who teach in secondary school.

When the findings about work-family conflict are examined; Work-family conflict of teachers whose place of work is primary school is higher than work-family conflict of teachers whose place of work is high school (Mean difference= 0.485; p= 0.009). Teachers who teach in primary school have more person-organization fit than teachers who teach in high school. Work-family conflict of teachers whose place of work is secondary school is higher than work-family conflict of teachers whose place of work is high school (Mean difference= 0.740; p= 0.031). In other words, teachers who teach in middle school experience a higher level of work-family conflict than teachers who teach in high school.

In addition, when the findings about life satisfaction are examined; The life satisfaction of teachers whose place of work is primary school is lower than the life satisfaction of teachers whose place of work is secondary school (Mean difference= (-0.985); p= 0.000). Teachers in primary school had lower levels of life satisfaction than teachers in secondary school. In addition, the life satisfaction of teachers whose place of work is primary school is lower than the life satisfaction of teachers whose place of work is high school (Mean difference= (- 0.405); p= 0.009). Teachers teaching in primary school had less level of life satisfaction than teachers teaching in high school.

Table 11. Person-Organization Fit, Work-Family/Family-Work Conflict, Life Satisfaction Competencies of Teachers According to School Level Tukey Test Results

Dependent variable	(I) School level	(J) School level	Avg. difference (I-J)	Std. Error	Meaningfulness.
Person-Organization Fit	Primary school	Secondary school	-.37716*	,14713	,029
	Primary school	High school	-,07716	,09567	,699
	Secondary school	High school	,30000	,17075	,185
Work-Family Conflict	Primary school	Secondary school	-,25457	,25168	,570
	Primary school	High school	.48543*	,16365	,009
	Secondary school	High school	.74000*	,29208	,031
Life Satisfaction	Primary school	Secondary school	-.98543*	,20922	,000
	Primary school	High school	-.40543*	,13604	,009
	Secondary school	High school	.58000*	,24281	,045

Correlation Analysis Between Teachers' Person-Organization Fit, Work-Family/Family-Work Conflict, Life Satisfaction Levels

Information on the correlation analysis results between the variables of person-organization fit, work-family conflict, family-work conflict and life satisfaction is given in Table 12. According to the correlation analysis results in Table 12; There is a low level of negative relationship between the person-organization Fit variable and the work-family conflict variable, and this relationship is statistically significant (R=(-0.256); p=0.000). There was no significant relationship between the variable of person-organization Fit and the variable of family-work conflict (p> 0.05). In addition, there is a low positive relationship between the person-organization Fit variable and the life satisfaction variable, and this relationship is statistically significant (R=0.244; p=0.000). There is a weak negative relationship between the work-family conflict variable and the life satisfaction variable, and this relationship is statistically significant (R=(- 0.256); p=0.000). Similarly, there is a weak negative relationship between the family-work conflict variable and the life satisfaction variable, and this relationship is statistically significant (R=(-0.178); p=0.000). In addition, there is a moderate positive relationship between the family-work conflict variable and the work-family conflict variable, and this relationship is statistically significant (R=0.515; p=0.000).

Table 12. Correlation Test Between Teachers' Person-Organization Fit, Work-Family/Family-Work Conflict, Life Satisfaction Levels

		A	B	C	D
Person-Organization Alignment (A)	Pearson Correlation	1	-,256**	-,082	,244**
	Meaningfulness. (2-tail)		,000	,077	,000
	N	461	461	461	461
Work-Family Conflict (B)	Pearson Correlation	-,256**	1	,515**	-,128**
	Meaningfulness. (2-tail)	,000		,000	,006
	N	461	461	461	461
Family-Work Conflict (C)	Pearson Correlation	-,082	,515**	1	-,178**
	Meaningfulness. (2-tail)	,077	,000		,000
	N	461	461	461	461
Life Satisfaction (D)	Pearson Correlation	,244**	-,128**	-,178**	1
	Meaningfulness. (2-tail)	,000	,006	,000	
	N	461	461	461	461

**. Significant at the 05 level (2-tail).

Teachers' Person-Organization Fit Levels Work-Family Regression on the Predictive Level of Conflict Levels

Regression analysis was performed to determine the effect of person-organization Fit on work-family conflict, and in this context, the regression model summary findings are given in Table 13.

According to the results of the model summary; R2 =0.065 (Adjusted R2 = 0.063). In other words, the independent variable of person-organization fit explains 6.3% of the variance of the dependent variable of work-family conflict. The change in work-family conflict

6.3% of them are caused by the effect of the person-organization fit variable.

Table 13. Regression Model Summary on the Predictive Level of Teachers' Person-Organization

Model summary				
Model	R	R2	Edited R²	Standard of forecasts Error
1	,256a	,065	,063	,96411
a. Predictors: (Fixed), Person-Organization Fit				

Fit Levels and Work-Family Conflict Levels

Teachers' Person-Organization Fit Levels Work-Family Regression Analysis of Predictive Level of Conflict Levels

Table 14 contains information about the results of the regression analysis Anova test. There is a statistically significant relationship between the independent variable and the dependent variable (F=32.107; p=0.000), which is possible to state that the model of the study is statistically significant.

Table 14. Regression Analysis of Teachers' Person-Organization Fit Levels and Work-Family Conflict Levels Predictive Level Anova Test Results

	Model	Sum of Squares	Sd	Average Square	F	Meaningfulness.
1	Regression	29,844	1	29,844	32,107	,000
	Residue	426,648	459	,930		
	Sum	456,492	460			

Teachers Person-Organization Fit Levels Work-Family Regression Model Coefficient Analysis of Predictive Level of Conflict Levels

According to Table 15; The relationship between the independent variable of person-organization Fit and the dependent variable of work-family conflict was statistically significant (p=0.000) and the β value was found to be -0.256. In other words, a one-unit increase in person-organization fit constitutes a decrease of 0.256 units in the level of work-family conflict. In other words, the increase in the level of person-organization fit in teachers' business life reduces their experience of work-family conflict.

Table 15. Regression Model Coefficient Analysis Results Table Regarding the Predictive Level of Teachers' Person-Organization Adaptation Levels and Work-Family Conflict Levels

	Model	Non-standardized coefficients		Standardized Coefficients	t	Meaningfulness.
		B	Std. Error	Beta		
1	(Fixed)	4,521	,305		14,830	,000
	Person-Organization Fit	-,439	,077	-,256	-5,666	,000
a. Dependent Variable: Work-Family Conflict						

Person-Organization Adaptation of Teachers Levels Family-Business Regression Analysis of Predictive Level of Conflict Levels

Regression analysis was performed to determine the effect of person-organization fit on family-work conflict and the results of the regression analysis Anova test are given in Table 16. There is no statistically significant relationship between the independent variable and the dependent variable (p=0.077), which is possible that the model of the study is not statistically significant.

Table 16. Regression Analysis of Teachers' Person-Organization Fit Levels and Family-Work Conflict Levels Predictive Level Anova Test Results

	Model	Sum of Squares	Sd	Average Square	F	Meaningfulness.
1	Regression	1,699	1	1,699	3,134	,077
	Residue	248,752	459	,542		
	Sum	250,451	460			

Regression Analysis of Teachers' Person-Organization Fit Levels on Life Satisfaction Level

Regression analysis was performed to determine the effect of person-organization Fit on life satisfaction, and in this context, the regression model summary findings are given in Table 17. According to the results of the model summary; R2 =0.060 (Adjusted R2 =0.058). In other words, the independent variable of person-organization Fit explains 5.8% of the variance of the dependent variable of life satisfaction. In other words, 5.8% of the change in life satisfaction occurs with the effect of the person-organization fit variable.

Table 17. Regression Model Summary of Teachers' Person-Organization Fit Levels and Life Satisfaction Level

Model summary				
Model	R	R2	Edited R^2	Standard of forecasts Error
1	,244a	,060	,058	,82033
a. Predictors: (Fixed), Person-Organization Fit				

Regression Analysis of Teachers' Person-Organization Fit Levels and Life Satisfaction Levels

Table 18 contains information about the results of the regression analysis Anova test. There is a statistically significant relationship between the independent variable and the dependent variable (F=29.125; p=0.000), and in this sense, it is possible to state that the model of the study is statistically significant.

Table 18. Regression Analysis of Teachers' Person-Organization Fit Levels and Life Satisfaction Levels Predictive Level Anova Test Results

	Model	Sum of Squares	Sd	Average Square	F	Meaningfulness.
1	Regression	19,599	1	19,599	29,125	,000
	Residue	308,882	459	,673		
	Sum	328,481	460			

Regression Analysis of Teachers' Person-Organization Fit Levels on the Predictive Level of Life Satisfaction

According to Table 19; The relationship between the independent variable of person-organization Fit and the dependent variable of life satisfaction was statistically significant (p=0.000) and the β value was found to be 0.244. In other words, a one-unit increase in person-organization fit will create an increase of 0.244 units in the level of life satisfaction. In other words, the increase in the level of person-organization fit in teachers' business life positively affects their level of life satisfaction, that is, it increases it.

Table 19. Regression Model Coefficient Analysis Results Regarding the Predictive Level of Teachers' Person-Organization Fit Levels and Life Satisfaction Levels

	Model	Non-standardized coefficients		Standardized Coefficients	t	Meaningfulness.
		B	Std. Error	Beta		
1	(Fixed)	1,799	,259		6,938	,000
	Person-Organization Fit	,356	,066	,244	5,397	,000

a. Dependent Variable: Life Satisfaction

Regression Analysis of Teachers' Work-Family Conflict Levels and Life Satisfaction Levels

Regression analysis was performed to determine the effect of work-family conflict on life satisfaction, and in this context, the regression model summary findings are given in Table 20. According to the results of the model summary; R2 =0.016 (Adjusted R2 =0.014). In other words, the independent variable of work-family conflict explains 1.4% of the variance of the dependent variable of life satisfaction. In other words, 1.4% of the change in life satisfaction occurs with the effect of the work-family conflict variable.

Table 20. Regression Model Summary on the Predictive Level of Teachers' Work-Family Conflict Levels and Life Satisfaction Levels

Model summary				
Model	R	R2	Edited R^2	Standard of forecasts Error
1	,128a	,016	,014	,83897

a. Predictors: (Fixed), Work-Family Conflict

Table 21 contains information about the results of the regression analysis Anova test. There is a statistically significant relationship between the independent variable and the dependent variable (F=7.678; p=0.006), which means that the model of the study is statistically significant.

Table 21. Regression Analysis of Teachers' Work-Family Conflict Levels and Life Satisfaction Levels Predictive Level Anova Test Results

	Model	Sum of Squares	Sd	Average Square	F	Meaningfulness.
1	Regression	5,405	1	5,405	7,678	,006
	Residue	323,077	459	,704		
	Sum	328,481	460			

Regression Model Coefficient Analysis Results of Teachers' Work-Family Conflict Levels and Life Satisfaction Levels

According to Table 22; The relationship between the independent variable of work-family conflict and the dependent variable of life satisfaction was found to be statistically significant (p=0.006) and the β value was found to be (-0.128). In other words, a one-unit increase in work-family conflict will cause a decrease of 0.128 units in the level of life satisfaction. In other words, as a result of teachers' work-family conflict, the level of life satisfaction is negatively affected, that is, life satisfaction decreases.

Table 22. Regression Model Coefficient Analysis Results of Teachers' Work-Family Conflict Levels and Life Satisfaction Levels

	Model	Non-standardized coefficients		Standardized Coefficients	t	Meaningfulness.
		B	Std. Error	Beta		
1	(Fixed)	3,490	,117		29,794	,000
	Work-Family Conflict	-,109	,039	-,128	-2,771	,006

a. Dependent Variable: Life Satisfaction

Regression Analysis of Teachers' Family-Work Conflict Levels and Life Satisfaction Levels

Regression analysis was performed to determine the effect of family-work conflict on life satisfaction, and in this context, the regression model summary findings are given in Table 23. According to the results of the model summary; R2 = 0.032 (Adjusted R2 = 0.029). In other words, the family-work conflict independent variable explains 2.9% of the variance of the life

satisfaction dependent variable. In other words, 2.9% of the change in life satisfaction occurs with the effect of the family-work conflict variable.

Table 23. Regression Model Summary on the Predictive Level of Teachers' Family-Work Conflict Levels and Life Satisfaction Levels

Model summary				
Model	R	R2	Edited R^2	Standard of forecasts Error
1	,178a	,032	,029	,83249
a. Predictors: (Fixed), Family-Work Conflict				

Table 24 contains information about the results of the regression analysis Anova test. There is a statistically significant relationship between the independent variable and the dependent variable (F=14.968; p=0.000), which is possible to state that the model of the study is statistically significant

Table 24. Regression Analysis of Teachers' Family-Work Conflict Levels and Predictive Level of Life Satisfaction Levels Anova Test Results

	Model	Sum of Squares	Sd	Average Square	F	Meaningfulness.
1	Regression	10,374	1	10,374	14,968	,000
	Residue	318,108	459	,693		
	Sum	328,481	460			

Regression Model Coefficient Analysis Results of Teachers' Family-Work Conflict Levels and Life Satisfaction Levels

According to Table 25; The relationship between the independent variable of family-work conflict and the dependent variable of life satisfaction was statistically significant (p=0.000) and the β value was found to be (-0.178). In other words, a one-unit increase in family-work conflict decreases by 0.178 units in the level of life satisfaction. In other words, as a result of teachers' family-work conflict, the level of life satisfaction is negatively affected, that is, it decreases.

Table 25. Regression Model Coefficient Analysis Results of Teachers' Family-Work Conflict Levels and Life Satisfaction Levels

	Model	Non-standardized coefficients		Standardized Coefficients	t	Meaningfulness.
		B	Std. Error	Beta		
1	(Fixed)	3,616	,118		30,590	,000
	Family-Work Conflict	-,204	,053	-,178	-3,869	,000
a. Dependent Variable: Life Satisfaction						

CONCLUSION and DISCUSSION

As a result of the research, it was determined that there was a statistically significant difference in the teachers' thoughts about person-organization fit in terms of gender variable. According to these results, it was determined that male teachers experienced more person-organization fit levels compared to female teachers. Similarly, in the studies conducted by Erkutlu, Özdemir and Elden (2018) and Akkaya (2019) on academics, it was concluded that the gender variable was effective on person-organization fit and it was seen that the person-organization fit level of male academics was higher than the person-organization fit level of female academics. On the other hand, in the studies conducted by Sezgin (2006), Demirkasimoğlu (2012), Doğan et al., (2019), it was found that the level of person-organization fit among teachers teaching in schools did not show a significant difference in terms of gender variable. It was determined that the responses of the teachers participating in the study regarding the level of person-organization fit did not differ significantly in terms of their marital status. According to these results, it was seen that

whether the teachers were married or single did not have a significant effect on their perceptions of the level of individual-organization fit.

It was determined that the opinions of the teachers participating in the study about the level of person-organization fit differed significantly in terms of their age. It was observed that the person-organization fit of teachers with an age range of 29 and less and teachers with an age range of 30-39 was lower than the person-organization fit of teachers with an age range of 40 and more. In this sense, it has been determined that as the age of the teachers increases, the level of person-organization fit also increases.

It was determined that teachers' thoughts about person-organization fit did not differ significantly in terms of total experience duration. In other words, the variable of total duration of experience plays an effective role on teachers' person-organization Fit levels. In the studies conducted by Demirkasimoglu (2012), Erkutlu, Özdemir and Elden (2018), results that are parallel to the findings of the research were reached. In parallel, Çetinkaya (2016), Taşdan (2010), Doğan et al., (2019) found that there was no significant difference in teachers' perceptions of person-organization fit according to the total duration of experience.

According to another finding of the study, teachers' perceptions about the level of person-organization fit did not show a significant difference in terms of their experience in the current school. In other words, the total duration of teachers' experience in the current school is not an effective variable on their level of person-organization fit. Similarly, in the study conducted by Sezgin (2006), it was concluded that the perception levels of teachers regarding person-organization fit did not differ significantly according to the duration of their experience in the current school. In addition, Finegan (2000) and Balcı (2003) concluded that the length of service in the current school was not effective in teachers' perceptions of the person-organization fit level.

It was concluded that teachers' perceptions of person-organization fit showed a significant difference in terms of school level. In other words, the school level variable is effective on the person-organization fit levels of teachers. As a result of the study, it was determined that the work-family conflict levels of the teachers differed statistically significantly in terms of gender variable. According to these results, it was determined that female teachers experienced more work-family conflicts compared to male teachers. Similarly, in the studies conducted by Ay (2006), Aydın (2018), Gözde (2019), it was concluded that the gender variable was effective on work-family conflict. On the other hand, in the studies conducted by Özkul (2014) and Yiğit (2018), it was concluded that the gender variable was not effective on the level of work-family conflict.

It was determined that the responses of the teachers participating in the study regarding the level of work-family conflict differed significantly in terms of their marital status. According to these results, it was seen that whether the teachers were married or single had a significant effect on their perceptions about the level of work-family conflict, and in this context, the level of work-family conflict was higher in married teachers compared to single teachers. In the studies conducted by Özkul (2014) and Akgemci (2018), it was concluded that the marital status of teachers was effective on work-family conflict. This finding is similar to the results of the research. On the other hand, according to the results of the research of Ay (2010), it was determined that marital status was not effective on work-family conflict.

It was determined that the thoughts of the teachers participating in the study about work-family conflict differed significantly in terms of their age. Similar to the results of the research, Ay (2010), Özkul (2014); In the study conducted by Zincirkıran (2013), it was observed that the work-family conflict levels of individuals differed significantly in terms of their age. In addition, in the studies conducted by Akgemci (2018) and Aktay (2019), it was found that the age variable was not effective on work-family conflict.

It was determined that the level of work-family conflict of teachers differed significantly in terms of total experience duration, and the level of family-work conflict did not differ significantly in

terms of total experience periods. In other words, while the total experience duration variable plays an effective role on teachers' work-family conflict levels, it does not play an effective role on teachers' family-work conflict levels. In the studies conducted by Ay (2010) and Zincirkıran (2013), it was revealed that the total duration of experience was an effective variable on the level of work-family conflict. On the contrary, Ay (2006) and Aydın (2018) found in their research that there was no significant differentiation in individuals' perceptions of work-family conflict according to the total duration of work.

According to another finding of the study, the level of work-family conflict of teachers differs significantly in terms of total experience in the current school, while the level of family-work conflict does not differ significantly in terms of total experience periods in the current school. While the variable of total experience duration in the current school plays an effective role on teachers' work-family conflict levels, it does not play an effective role on teachers' family-work conflict levels. As a result of their research, Özkul (2014) and Yiğit (2018) found that the duration of experience in the current workplace was effective on the work-family conflict of the teachers participating in the research, while Ay (2006) found that the duration of experience in the current workplace was not effective on the work-family conflict of the teachers participating in the research.

The level of work-family conflict of teachers differs significantly in terms of school level, and the level of family-work conflict does not differ significantly in terms of school level. In other words, while the school level variable is effective on the work-family conflict levels of teachers, it is not effective on the family-work conflict levels of teachers. As a result of the study, it was determined that the life satisfaction levels of the teachers did not differ statistically significantly in terms of gender variable. Similarly, in the studies conducted by Telef (2011), Recepoğlu and Ülker-Tümlü (2015), Korkmaz (2017) and Şekeroğlu (2019), it was concluded that there was no significant difference in the life satisfaction levels of the participants in terms of gender variable. On the other hand, in the studies conducted by Taş (2011), Yılmaz and Aslan (2013), Güner (2019), it was concluded that the gender variable was not effective on the life satisfaction level of individuals.

It was determined that the responses of the teachers who participated in the study about the level of life satisfaction differed significantly in terms of their marital status. According to these results, it was seen that whether the teachers were married or single had an effect on their life satisfaction levels, and in this context, the level of life satisfaction was higher in married teachers compared to single teachers. In the studies conducted by Recepoğlu and Ülker-Tümlü (2015), Şahin (2008), Dağlı and Baysal (2017), it was concluded that the marital status of teachers was effective on life satisfaction, and these results are similar to the results of the research. On the other hand, according to the results of the research of Güner (2019) and Şekeroğlu (2019), it was determined that marital status was not effective on life satisfaction.

It was determined that the thoughts of the teachers participating in the study about life satisfaction differed significantly in terms of their age. Similar to the results of the research, in the study conducted by Şekeroğlu (2019), Yılmaz and Altınok (2009), it was observed that the work-family conflict levels of individuals differed significantly in terms of their age. In addition, in the studies conducted by Ülker-Tümlü and Recepoğlu (2013), Recepoğlu and Ülker-Tümlü (2015), it was found that the age variable was not effective on life satisfaction.

It was determined that the life satisfaction level of the teachers differed significantly in terms of the total duration of experience. In other words, the variable of total experience duration plays an effective role on teachers' work-family conflict levels. In the studies conducted by Başoğlu, Şekeroğlu and Altun (2016), it was revealed that the total duration of experience was an effective variable on life satisfaction. In addition, in the study conducted by Dağlı and Baysal (2017), they found that there was no significant difference in the life satisfaction perceptions of individuals according to the total duration of neyim. The level of life satisfaction of teachers

differs significantly in terms of school level. In other words, the school level variable is effective on teachers' life satisfaction levels.

In the study, it was concluded that person-organization fit is effective on work-family conflict, person-organization fit is not effective on family-work conflict, person-organization fit is effective on life satisfaction, work-family conflict is effective on life satisfaction, and family-work conflict is effective on life satisfaction. In the study, it was determined that person-organization fit had a negative effect on work-family conflict. In other words, as a result of the increase in the level of person-organization fit of teachers in business life, their work-family conflict decreases. In addition, it has been determined that person-organization fit does not have an effect on family-work conflict. In the study, it was concluded that work-family conflict has a negative effect on life satisfaction. In other words, as a result of teachers' work-family conflict, the level of life satisfaction is negatively affected, that is, it decreases. In the study, it was concluded that family-work conflict had a negative effect on life satisfaction. In other words, as a result of teachers' family-work conflict, the level of life satisfaction is negatively affected.

Recommendations for Practitioners

- Teaching is a profession that requires to be lively and dynamic. It is very important for the teacher to be ready for every day and even for every lesson, and to prepare for the lesson efficiently. In a profession that is so closely related to the human mind and human psychology, conflicts can be considerably reduced if the personal values of teachers are in fit with school values and show similarity. In this case, negative factors such as the negative impact of job responsibilities on home and family life, and the fact that work-related responsibilities make it difficult to implement family responsibilities or require them to be changed should be prevented as much as possible by education administrators. In this case, while preventing the person's work and family conflict, it can also increase the professional and organizational commitment of the person.
- People spend most of their lives at work. In the same way, teachers spend a lot of time at school. Business environments, which cover such a large part of life in terms of quantity, should be places where individuals will feel valuable in terms of quality. Teachers are satisfied with their lives if their personal values are well aligned with the values of the school. This satisfaction will also positively affect the family and private life of the professional. This satisfaction can be primarily reflected in the school climate and in a sense to the students who are the outcomes of the schools. For teachers and qualified students with professional satisfaction in schools, it is important for school administrators to ensure that teachers' personal values and school values are in fit.
- In an educational environment, everything should be balanced. When the balance is disturbed, the system deteriorates, and the deterioration of the system negatively affects all kinds of work and functioning of the institution. The teacher's job responsibility may directly and negatively affect the teacher's life if he negatively affects his family and home life, and if he disrupts his family obligations due to his work-related obligations. Education administrators should not see the teacher—or even all employees—as a machine that performs all the tasks they think about. It is a balanced environment that is desired and must be provided for the person to fulfill his obligations related to school while doing his family responsibilities without interruption. In the same direction, family and private life needs should be prevented from constantly and systematically taking precedence over job responsibilities. This balance, which should be provided by education administrators, can positively affect the professional satisfaction of teachers while providing us with a healthy family environment and children who grow up in healthy families.
- If the personal values of the teachers are in good fit with the values of the school, it can be ensured that the teachers are satisfied with their lives, feel like they have everything, enjoy life, etc

- Considering that the person-organization fit of young teachers is lower than that of teachers over the age of 40, special programs can be organized for young teachers to increase cohesion.
- Teachers' negative effects on their family and home lives, their job responsibilities making it difficult to implement family-related responsibilities, having to change family-related plans and tasks due to job responsibilities, etc., can negatively reduce their satisfaction levels in their lives.
- Teachers' family needs negatively affect their work life, not being able to do what they want to do about work due to responsibilities towards the family, negatively affecting their ability to perform work-related tasks due to the tension and burden caused by family life, etc., can negatively reduce their satisfaction levels in their lives
- Considering that teachers with more experience have more life satisfaction, social environments can be created where experienced teachers can share their experiences with young teachers.
- Considering that female teachers have more work-family conflict problems, the working principles of female teachers can be arranged in a way that supports the family order.
- Likewise, considering the fact that the person-organization fit of female teachers is lower than that of male teachers, special studies can be carried out to increase the level of organizational fit of female teachers by adopting the school culture. For example, the teachers' room is allocated only to female teachers at certain times and they are given the opportunity to do their own activities.
- Based on the finding that teachers' life satisfaction rates differ according to the type of school they work in, programs can be made that require teachers to interact more with their colleagues working in other types of schools.
- Regular family life should be considered as an issue that increases the work efficiency of teachers and activities and activities that strengthen family ties should be organized for teachers. In this context, considering that married teachers have higher life satisfaction, single teachers should be encouraged to get married and establish a family order.

Recommendations for Researchers

- These research findings are limited to teachers working in public schools in a few districts in Istanbul. Researchers can study this issue in more districts and cities.
- In this study, the situation of a limited number of teachers working at primary, secondary and high school levels was examined comparatively. Researchers can independently examine the individual-organization fit of elementary, middle, and high school teachers. In this way, the difference between the levels is determined more clearly and makes it possible to take measures to increase the life satisfaction of teachers.
- Qualitative research can be conducted to measure teachers' perceptions of person-organization fit, life satisfaction, and work-family conflict in more depth.
- In this study, the effect of teachers' person-organization Fit on work-family conflict and life satisfaction was investigated. The effect of person-organization fit on different areas can be investigated. For example, the effect of person-organization fit on professional or organizational commitment can be studied

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Bibliometric Analysis of Research on Cyberbullying

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Abstract
The aim of this study is to conduct a bibliometric analysis of domestic theses on cyberbullying in Turkey, examining current academic trends, research methodologies, and key themes related to cyberbullying. The study employs the case study model, one of the qualitative research designs. The population of the study consists of theses on cyberbullying accessible in full text via the YÖK Thesis Database. The sample includes theses published in Turkish and/or English between 2020 and December 2024 (inclusive) and available in full text on the YÖK Thesis Database. A total of 116 theses were included in the analysis. Data were collected using the Academic Publication Assesment Form, and document analysis was applied for data analysis. The results of the study indicate that the majority of these were concentrated in 2024, with a predominance of master's theses. Most of the theses were written in Turkish and were affiliated with universities such as Istanbul Gelişim, Gazi, Marmara, and Mersin. The findings also reveal that research predominantly focused on psychology, education, and sociology, employing quantitative methods and survey models. Frequently utilized tools included the Cyberbullying and Cyber Victimization Scales. Commonly explored variables were cyber victimization, empathy, academic achievement, and psychological well-being.

Keywords: Bullying, cyberbullying, psychology, education, bibliometric analysis

INTRODUCTION

Cyberbullying is a harmful form of behavior that takes place between individuals in digital environments and can create psychological and social effects, and it has emerged as an increasing problem in recent years (Yaman and Peker, 2012).

Cyberbullying is a major social problem in today's digital world. Online harassment among children and adolescents has led to a gradual increase in cases of cyberbullying. Cyberbullying is when individuals engage in harmful, threatening, or humiliating behaviors toward others in the digital environment, especially through the internet, social media platforms, and mobile devices (Akbaba and Eroğlu, 2013). Nowadays, cyberbullying has become a common problem, especially among adolescents and teens. While individuals in these age groups use the digital world extensively to build their social relationships and communicate, they can also be victims of cyberbullying. Digital platforms such as social media, instant messaging apps, and games are among the commonly used tools in carrying out cyberbullying. Bullying can manifest itself in various forms such as dissemination of personal information, insulting messages, threats, and photo/video sharing (Akca and Sayımer, 2017). The problem statement of the research; It can be expressed as "What are the academic tendencies, research methodologies and basic themes related to cyberbullying of the theses on cyberbullying in Turkey?"

Cyberbullying Definition and Types of Cyberbullying

Cyberbullying has become a major problem today with the spread of technology and the increase in digital communication tools. Cyberbullying is defined as a set of deliberate behaviors that target individuals online and disturb them psychologically, emotionally or socially (Patchin and Hinduja, 2011). Such behaviors are often carried out by perpetrators who use the advantage of anonymity and have serious effects on the victims (Arıcak, Siyahhan, and Sarıbeyoğlu, 2012).

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Unlike traditional bullying, cyberbullying draws attention with its wide reach capacity and rapid spread potential offered by digital environments.

Cyberbullying can be defined as repetitive and harmful behaviors in which victims are deliberately targeted on online platforms. This definition includes a variety of digital platforms such as social media, messaging apps, and online gaming (Jolliffe and Farrington, 2006). One of the main characteristics of cyberbullying is that victims are constantly accessible. This makes it difficult for victims to completely isolate themselves from the effects of bullying (Garnefski, Kraaij, & Spinhoven, 2001). Another characteristic of cyberbullying is anonymity. Because perpetrators carry out these behaviors by concealing their identities, victims often do not have the opportunity to confront the perpetrators (Rohner, 2004). This situation causes victims to feel more helpless. At the same time, the asymmetrical power relations of digital platforms lead to the inability to establish a balance between the victim and the perpetrator (Vranjes, Baillien, Vandebosch, & De Witte, 2018).

Name-calling and teasing are one of the most common types of cyberbullying and methods used by individuals on digital platforms to humiliate others. This type of bullying is common on social media, instant messaging apps, or forums. The bully names the targeted individual in a sarcastic way, attaching a negative label to them (Kowalski and Limber, 2007). This type of bullying can undermine the self-esteem of the victims, causing them to feel excluded (Çakmak, 2009). On social media, users become bolder when insulting or mocking each other because they are protected by anonymity (Balcı, 2022).

Harassment and threats are another important type of cyberbullying and are based on the creation of a constant threat or harassment situation over the internet. This type of bullying is especially common on social media platforms, email or instant messaging apps. The bully often repeats his threats while aiming to cause physical or emotional harm to his victim (Belsey, 2004). Harassment and intimidation can cause victims to live in a state of constant fear, which can cause psychological problems such as depression, anxiety, and loneliness (Englander, Donnerstein, Kowalski, Lin, & Party, 2017). This type of bullying, which is especially common among young people, causes victims to feel more psychologically vulnerable (Kaya and Cenkseven Önder, 2022).

Dissemination of private data is a form of bullying by sharing individuals' personal and private data without permission. This type of bullying is usually caused by cyberbullies, who expose victims' personal data on social media or other platforms. This data may include phone numbers, private photos or information about private life (Çakmak, 2009). The bully, who has access to data about the victim's private life, may disseminate this data with the aim of harming others, making the victim more vulnerable. The dissemination of private data can have serious consequences not only in terms of physical security, but also in terms of social reputation (Arıcak, Kınay, and Tanrıkulu, 2012). This type of bullying can hurt victims both psychologically and socially. Exclusion on social media is another common type of cyberbullying, and it takes the form of excluding an individual from social groups in the digital environment. By removing a particular person from social media groups, friend lists, or online communities, the bullying person or group tries to socially isolate that person (Kowalski and Limber, 2007).

Image and content manipulation is one of the most sophisticated types of cyberbullying. This type of bullying is a form of intervention with the aim of damaging the reputation of individuals, especially through photo and video manipulation. By altering photos or videos of the victim, the bully may create negative content and belittle the victim by disseminating this content on online platforms (Balcı, 2022). Such manipulations can damage the victim's reputation, both online and offline, and negatively affect their relationships with their social circle. In addition, this type of bullying can have serious effects on the psychological health of the victim. These manipulations can seriously damage self-esteem, especially among adolescents (Aygün, 2016).

Effects of Cyberbullying

Cyberbullying and negative behaviors carried out through digital platforms have many negative effects on victims. These effects can have important psychological, academic and social consequences. The effects of cyberbullying on victims can often be long-lasting and permanent, negatively affecting the quality of life of individuals. One of the most obvious effects of cyberbullying is the negative consequences on the psychological health of victims. Psychological effects usually manifest themselves in the long term and negatively affect the emotional well-being of the individual. Individuals who are bullied often experience psychological problems such as anxiety, depression, and stress (Belsey, 2004; Kowalski and Limber, 2007; Çakmak, 2009). Such psychological effects can worsen the mental state of individuals and cause them to be even more isolated in social life.

Another important psychological effect in individuals who are cyberbullied is self-insecurity. These people may experience a serious decrease in their self-esteem as a result of bullying. In particular, this effect on teenagers and children is very pronounced. Lack of self-confidence can cause individuals to become more timid and introverted in social life (Arıcak, Kınay, and Tanrıkulu, 2012). Individuals may experience a sense of shame in front of the public as a result of bullying, which can damage both their social relationships and their self-confidence (Aygün, 2016).

One of the academic effects of cyberbullying is low achievement. Students who are bullied may lose interest in class due to negative experiences they have had at school. This situation can directly affect students' engagament and performance in classrooms (Kaya and Cenkseven Önder, 2022). Students have difficulty focusing on lessons due to the psychological pressures created by cyberbullying, which negatively affects their academic achievement. In addition, students who are cyberbullied may also have their relationships with their teachers disrupted, which can complicate their educational process (Balcı, 2022).

Cyberbullying can also increase school absenteeism in students. Students who are bullied may be reluctant to go to school because going to school can make them vulnerable to bullying. In the long run, this can lead to them drifting away from school and experiencing academic failure. School absenteeism can disrupt students' educational life and hinder their future success. In this context, cyberbullying not only creates individual psychological effects, but can also cause serious disruptions in the educational process (Englander et al., 2017).

The social effects of cyberbullying can profoundly affect victims' relationships with their environment. Disruptions in social interactions lead individuals to experience feelings of loneliness and exclusion. This can create significant problems both in individual relationships and in the social context. Negativity in social interactions can also affect emotional well-being in the long run (Kaya and Cenkseven Önder, 2022). Individuals who are cyberbullied can often experience social isolation. The feeling of exclusion causes them to move away from their social environment and to be alone (Çakmak, 2009). Individuals, especially in adolescence, make a great effort to interact socially and gain acceptance from the group. However, individuals who have been exposed to cyberbullying begin to lead a more isolated life by distancing themselves from their social environment (Balcı, 2022). Social isolation can worsen the psychological health of individuals, deepening problems such as depression and anxiety. Cyberbullying can have negative effects not only on individuals' social circles, but also on their close relationships. Individuals who are bullied may experience difficulties in their relationships with family members or friends. These individuals may find it difficult to share the emotional burdens of being bullied, which can make them even more isolated (Kowalski & Limber, 2007). In addition, victims of bullying may find it difficult to trust others, having trust issues. This can lead to a weakening of friendship and family relationships (Balcı, 2022).

The increase in cyberbullying draws attention in parallel with the spread of information and communication technologies. Individuals who use the cyber world for their own purposes are among the main reasons for this increase (Çelik, Çelen and Seferoğlu, 2015). Reports in countries as diverse as the United States, Canada, and the United Kingdom show that

cyberbullying has become a global problem rather than just a local or regional problem (Campbell, 2013; Li, 2008; Arıcak, 2009). Although various studies reveal differences in the perception and coping strategies of cyberbullying, they point to a general consensus on its prevalence (González-Calatayud and Prendes Espinosa, 2021). In studies conducted among adolescents, it is stated that between 20% and 50% have encountered cyberbullying at least once and the rate of cyber victimization is increasing (Tokunaga, 2010). In a study covering 63 countries, including Turkey, it was stated that cyberbullying is over 60% and cyber victimization is over 70%, and this rate has increased in the last five years (Uludaşdemir and Küçük, 2021). In a study conducted by Ybarra and Mitchell (2004), it was found that 19% of internet users between the ages of 10-17 were exposed to cyberbullying, 4% were victims, 12% were bullies, and 3% were both victims and bullies. In a study conducted by Li (2005) with seventh grade students, it was determined that 25% of the participants were cyber victims and more than half of them knew that someone else was being cyberbullied. In the research of Patchin and Hinduja (2006), 29% of the participants stated that they were cyberbullied, 11% stated that they were in the role of a bully, and 47% stated that they witnessed cyberbullying.

In another study conducted in Turkey, Erdur Baker and Kavşut (2007) revealed that 30% of individuals between the ages of 14-19 are cyber victims and 28% are bullies. In a 2006 study conducted by The National Crime Prevention Council and Harris Interactive, 43% of middle and high school students reported experiencing cyberbullying in the past year (Moessner, 2007). In a study conducted by Arıcak et al. (2012) with secondary school students, 5.9% of the participants were defined as victims, 35.7% as bullies and 23.8% as victims-bullies. Juvonen and Gross (2008), in a study conducted with individuals aged 12-17, reported that 72% of the participants had experienced cyberbullying at least once in the last year. In the study conducted by Arıcak (2009) with university students, 54.4% of the participants stated that they had experienced cyber victimization at least once in their lives, and 19.7% stated that they had experienced cyberbullying. Similarly, in a study conducted by Calvete et al. (2010) with individuals between the ages of 12-17, it was determined that 44.1% of them had experienced cyberbullying at least once. According to the research of Dilmaç and Aydoğan (2010), 56.2% of individuals in the 13-15 age group were defined as victims and 19.6% as bullies.

Özdemir and Akar (2011) stated that 14% of the participants were cyber victims and 10% were cyber bullies in their study with high school students. In the study conducted by Eroğlu and Peker (2015) with high school students, it was concluded that 7% of the participants were victims, 9% were bullies and 72.2% were both victims and bullies. As a result of the meta-analysis in which Hamm et al. (2015) examined thirty-four different studies, it was stated that the prevalence rate of cyberbullying ranged from 11% to 42.6%, with an average of 23%. In the study conducted by Tezer (2017) with university students, it was stated that approximately half of the participants were exposed to cyberbullying. In their study, Topçu and Erdur Baker (2016) stated that cyber victimization rates are generally higher than cyberbully rates. It has been stated that this may be related to the fact that individuals do not want to admit that they are cyberbullying. In addition, it has been emphasized that studies on cyberbullying focus more on the roles of victims and bullies, but there are few studies examining the role of cyber bystanders, and this role has become the focus of research in recent years (Türk and Şenyuva, 2021).

This research presents a comprehensive bibliometric analysis of academic studies on cyberbullying in Turkey, revealing important gaps and trends in the literature. Unlike the individual studies in the literature, this study aims to present a general perspective by bringing together all theses in Turkey. In particular, by identifying which research methods and themes stand out in the fight against cyberbullying, suggestions were made that will guide future research in this area. Another unique aspect of the study is that such analyses contribute to the development of policies and training programs related to cyberbullying.

Purpose of the Research

The main purpose of this research is to examine the current academic trends, research methodologies and basic themes related to cyberbullying by conducting a bibliometric analysis of domestic theses on cyberbullying in Turkey. The sub-objectives of the research are;

- What is the distribution of theses on Cyberbullying in Turkey according to the year they were publish?
- What is the distribution of theses on Cyberbullying in Turkey according to the type of thesis?
- What is the distribution of the publication language of the theses on Cyberbullying in Turkey?
- What is the distribution of theses on Cyberbullying in Turkey according to universities?
- What is the distribution of theses on Cyberbullying in Turkey according to their basic disciplines?
- What is the distribution of theses on Cyberbullying in Turkey according to the method?
- What is the distribution of theses on Cyberbullying in Turkey according to the research model?
- What is the distribution of theses on Cyberbullying in Turkey according to data collection tools?
- What is the distribution of the theses on Cyberbullying in Turkey for the subjects they work with?

METHOD

In this section, the method used in the research, the model of the research, the universe and databases of the study, the data collection tool used, the data collection process, and how the data were analyzed were explained.

Model of the Research

This study was designed with qualitative research method. Qualitative research is a research method used to obtain information or to develop new perspectives on a situation in which information is not fully known or when it is difficult to evaluate with quantitative measurements (Strauss and Corbin, 2007). In this study, the theses made in the field of *Cyberbullying* carried out in Turkey until December 2024 were examined. In the study, the case study model, which is one of the qualitative research models, was used. McMillan (2000) defines a case study as a method in which one or more events, environments, programs, social groups, or other interconnected systems are examined in depth.

Case study refers to an in-depth process of analysis and identification on a finite system; this definition emphasizes the features that distinguish the case study from other qualitative research designs (Merriam, 2009, p. 40). Yin (2009), on the other hand, defined case study as 'a method that investigates a current event or phenomenon in its own real-life environment' in the context of the research process. Research; It aims to integrate the results of different researches in the existing literature and to present a general perspective. In this context, the case study in the research was conducted as follows (Yıldırım and Şimşek, 2008):

(i) *Creation of Research Questions:* Research questions help the researcher determine what data to collect from relevant research and how to implement analysis strategies.

(ii) *Data Collection and Selection: It is* important to choose research that covers the situation covered in the case study, examines the facts and is suitable for the purpose. This selection should be based on certain criteria (e.g., databases, various types of research, specific publication date, sample group, and subject limitation, etc.). The data to be extracted from the selected studies are combined and prepared for analysis.

(iii) *Data Analysis:* It is the reporting process of the selected studies using appropriate analysis methods. At this stage, appropriate analyzes are reported in tables and graphs on the basis of research questions.

(iv) Interpretation of Results: The results of the case study are studies in which a general framework is created about the situation, a perspective is gained and an in-depth analysis is made on a limited system. Researchers interpret these results and make a general evaluation.

Universe and Sample of the Research

The universe of the study; These are theses in the field of cyberbullying, the full text of which can be accessed in the YÖK Thesis database. Since Altunok, Kargı, and Baltacı (2021) examined postgraduate theses related to cyberbullying in the YÖK Thesis database between 2010 and 2020 in their study, the period between 2020 and 2024 was taken as the basis in this research. The sample of your study is; These are the researches published in Turkish and/or English until December 2020 and 2024 (including these years) in the YÖK Thesis database and whose full text is presented. In this context, a total of 116 theses were included in the research.

Data Collection Techniques

Screening Strategy and Inclusion/Exclusion Criteria

(i) The scanning process in the databases was done on 30.11.2024.
(ii) The term "Siber" Zorbalık" was scanned in the titles and keywords for Turkish publications as a keyword in the databases. For English-language publications; The term "Cyber Bullying" has been scanned in titles and keywords.
(iii) As a result of the relevant literature review in the research; The variables of author, year of publication, thesis title, university where the thesis was conducted, publication language, thesis type, subject, method, model and data collection tool were determined in accordance with the purpose and these data were withdrawn from the researches.
(iv) In the research, each research was numbered using the Academic Publication Evaluation Form and the researches were not specified; It was withdrawn from the research for the reporting process as a bibliography in APA 6 style.

Reasons for not including the research study in the context of the case study:
(i) Not available in relevant databases
(ii) The full text is not accessible
(iii) Not focusing on Cyberbullying

It can be specified in the form of.

All researches were scanned from the relevant databases within the scope of keywords in order to determine the researches suitable for the analysis. Among the studies whose full texts can be accessed, 210 studies were included in the study pool. Of the studies examined, 85 studies that were in (title page and key words) duplication/overlap status were excluded from the scope. In the second stage, the remaining 125 studies were examined in depth, and 6 of these studies were removed from the pool on the grounds that they were not suitable for the study due to unrelated topics (For example including keywords *cyberbullying* but topic about *social media addiction)*. As a result of the title and abstract elimination, the remaining 116 studies were transferred to the Mendeley Program for evaluation as they were suitable for the purpose.

Analysis of Data

In the study, document analysis was used in the analysis of the data. Docs; journals, biographies and autobiographies, technical documents, field notes, diaries, official records, papers, reports or statistics, primary or secondary sources, historical events or chronologies, projects, plans, letters, photographs, books, articles (Cohen, Manion & Morrison, 2007). It is known that documents are important sources of information about the relevant field and researchers generally work on these written documents in qualitative research (Wallwn and Fraenkel, 2000).

In the study, document analysis was carried out in two stages. These;

(i) The theses in the study group were obtained from the thesis databases of YÖK and transferred to the computer environment in pdf format. In the study, Mendeley Reference Manager, Excell, and SPSS Statistics 26 programs were used in the collection, classification and presentation of the data.

(ii) In the second stage, the analyzes of the studies transferred to the computer environment in the order of code numbers were made through the Academic Publication Evaluation Form developed within the scope of the research. The data obtained within the scope of the research were analyzed using categorical analysis and frequency analysis techniques, which are among the types of content analysis associated with the qualitative research method. In the process of data analysis in qualitative research, the first technique used is frequency analysis, which involves an approach that focuses on counting the frequencies of message elements. In this type of analysis, countable units are determined and the analysis indicators are expressed in the type of frequency. Frequency analysis reveals in a simple way the frequency of quantitative appearance of recording units. During the analysis of the material, it was intended to count the message elements according to the frequency of a particular element, and these counts were expressed by the frequency type. This approach provides an understanding of how often a particular item occurs and the intensity and importance of that element in the context of analysis. As a result of frequency analysis, items can be ranked in order of importance and classified based on their frequency (Köhler and Stemmler, 1997). Categorical analysis, on the other hand, generally refers to the division of a particular message into units and then the grouping of these units into categories according to predetermined criteria (Tavşancıl and Aslan, 2001). In the study, the type, pattern, distribution of publications in the study group by countries and universities, distribution according to databases, education level and branch distribution of teachers were presented in the form of categories and themes.

Validity and Reliability of the Research

Validity in qualitative research means that the researcher observes the phenomenon in its true form and as impartially as possible. In addition, the process by which the researcher obtains the data, the explanation of how he reached the results, and the detailed reporting of the collected data are also important criteria of validity (Yıldırım and Şimşek, 2008).

In qualitative research, validity is handled in two ways: internal and external validity. Internal validity can be stated as the adequacy of the research process in revealing the truth under consideration. It is related. For this reason, the researcher is expected to be consistent both in the data collection process and in the analysis and interpretation processes of the data (Büyüköztürk et al., 2008). In this study, detailed definitions were made in the findings section in order to ensure internal validity, the information about the situation subject to the research was revealed with objective data, and then interpretation was made. The consistency between the data has been tried to be achieved by taking into account the internal homogeneity and external heterogeneity criteria. In other words, the similarities and differences are clearly revealed.

External validity can be expressed as the generalizability of research results. If the results of the research can be repeated to similar environments and situations, it can be said that the external validity of the research has been ensured. In this study, the withdrawal of publications from databases is explained in detail and the raw data obtained are presented in addition. It is defined in detail at a level that can be compared with different databases.

Reliability; a clear and detailed description of the research process and data, i.e. in a way that allows another researcher to evaluate them; in short, it is related to the reproducibility of research results (Yıldırım and Şimşek, 2008). In this context, the analysis of the data was carried out by two experts and the formula developed by Miles and Huberman (1994) was used for the reliability calculation of the study.

Reliability = Consensus / (Consensus + Disagreement)

In the calculation made according to the reliability formula, the reliability of the research was found to be 82%. Reliability calculations above 70% show that the research is reliable. According to the result obtained, it can be said that the research is reliable.

RESULTS

Findings for the First Sub-Research Question

The findings regarding the distribution of the researches in the first sub-research question of the research by years are presented in Table 1.

Table 1. Distribution of the Studies Included in the Research by Years

Variable	Year	Number (n)	Percentage (%)
Year Distribution	2024	29	25,00
	2023	23	19,83
	2022	27	23,28
	2021	20	17,24
	2020	17	14,66
	Total	116	100

Regarding the first sub-question of the research, the distribution of the studies examined by years is presented in Table 1. According to the data obtained, the year with the highest contribution to the studies was 2024 with a rate of 25%. This is followed by 2022 with 23.28%, 2023 with 19.83%, 2021 with 17.24% and 2020 with 14.66%. This distribution, in which a total of 116 studies were examined, shows that the research subject has attracted great attention, especially in recent years. The graph for the distribution of their studies by year is presented in Figure 2.

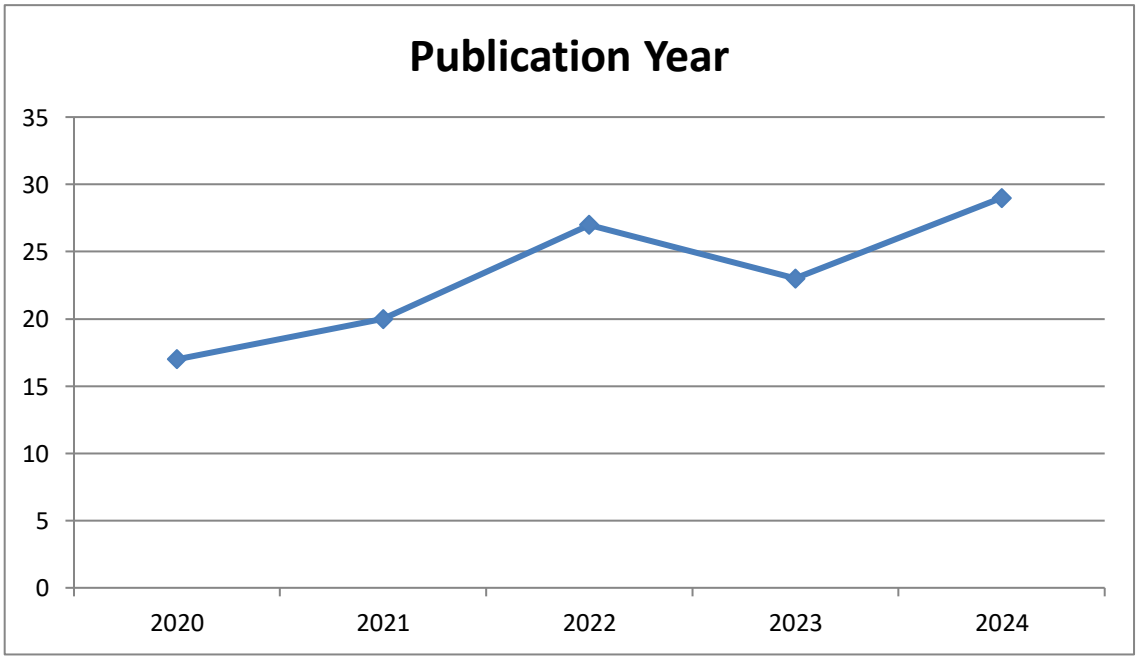


Figure 2. Total Number of Publications Including Domestic and International Issues by Years

As can be seen in Figure 2, the continuous increase of theses on the basis of total number paused in 2023 and continued to increase in 2024. This number has reached the highest level in 2024.

Findings for the Second Sub-Research Question

The findings regarding the distribution of the researches in the second sub-research question of the research according to the type of publication are presented in Table 2.

Table 2. Distribution of Theses Included in the Research by Types

Variable	Thesis Type	Number (n)	Percentage (%)
Research Type	Master	100	86,21
	PhD	10	8,62
	Specialization in Medicine	6	5,17
Total		116	100,00

For the second sub-question of the research, the findings regarding the types of theses included in the research are presented in Table 2. According to the data, the highest contribution to the studies comes from master's theses with a rate of 86.21%. While doctoral theses ranked second with a rate of 8.62%, the rate of specialization theses in medicine was determined as 5.17%. These findings, in which a total of 116 theses were examined, show that master's theses have a predominant place in the research field.

Findings on the Third Sub-Research Question

The findings regarding the distribution of the researches in the third sub-research question of the research according to the publication language are presented in Table 3.

Table 3. Distribution of the Theses Included in the Research According to the Language of Publication

Variable	Publication language	Number (n)	%
Publication Language	Turkish	110	94,83
	English	6	5,17
Total		116	100

According to Table 3; It is seen that most of the theses included in the study (94.83%) were published in Turkish and only 5.17% were prepared in English. This finding shows that theses prepared in Turkish are common.

Findings on the Fourth Sub-Research Question

The findings regarding the distribution of the theses according to the universities where they were carried out are presented in Table 4.

Table 4. Distribution of Theses Included in the Research by Universities

Variable	Universities	Number (n)	%
Universities where theses are published	Istanbul Gelişim University	11	9,48
	Gazi University	9	7,76
	Marmara University	6	5,17
	Mersin University	6	5,17
	Atatürk University	5	4,31
	Ankara University	5	4,31
	Üsküdar University	4	3,45
	Haliç University	4	3,45
	Gaziantep University	4	3,45
	Süleyman Demirel University	2	1,72
	Ondokuz Mayıs University	2	1,72
	University of Health Sciences	2	1,72
	Manisa Celal Bayar University	2	1,72
	Bahçeşehir University	2	1,72
	Others (Universities represented by a single thesis)	52	44,83
Total		106	100

According to Table 4; When the distributions of the universities where the theses are carried out are examined, it is seen that Istanbul Gelisim University has the highest rate with 9.48%. Gazi University ranks second with a rate of 7.76%. Marmara University and Mersin University rank third with a rate of 5.17%. Atatürk University and Ankara University follow with a rate of 4.31%, while Üsküdar University, Haliç University and Gaziantep University are represented with a rate of 3.45%. Süleyman Demirel University, Ondokuz Mayıs University, Health Sciences University, Manisa Celal Bayar University and Bahçeşehir University are located at a rate of 1.72%. Other universities represented by a single thesis have an important place with a total rate of 44.83%. In general, it is seen that the distribution of theses is spread over a wide range of universities and certain universities are more active in this field.

Findings on the Fifth Sub-Research Question

The data for the distribution of the relevant theses according to the subjects in which they were published are presented in Table 5.

Table 5. Distribution of the Theses Included in the Research According to the Basic Disciplines

Variable	Topic	Number (n)	%
Distribution of theses according to their main disciplines	Psychology	48	50.00
	Education and Training	20	17.24
	Sociology	8	6.90
	Communication Sciences	7	6.03
	Nursing	6	5.17
	Science and Technology	5	4.31
	Computer Engineering and Computer Science and Control	4	3.45
	Journalism	3	2.59
	Child Health and Diseases	3	2.59
	Sports	2	1.72
	Forensic Medicine	2	1.72
	Psychiatry	2	1.72
	Social Services	1	0.86
	Public Relations	1	0.86
	Labour Economics and Industrial Relations	1	0.86
	Business Administration	1	0.86
	Political Science	1	0.86
	Fine Arts	1	0.86
Total		**116**	**100**

The distributions of the main disciplines in which the relevant theses are published are presented in Table 4.5. Half (50.00%) of the theses examined are studies in the field of psychology. This is followed by theses in the field of education and training with 17.24%. Sociology (6.90%), communication sciences (6.03%) and nursing (5.17%) also have an important place. Theses in the fields of science and technology (4.31%) and computer engineering sciences-computer and control (3.45%) have relatively lower rates. Other subjects include journalism (2.59%), pediatrics (2.59%), sports (1.72%), forensic medicine (1.72%) and psychiatry (1.72%). Fields such as social services, public relations, labor economics and industrial relations, business, political sciences and fine arts were represented at 0.86% each.

Findings on the Sixth Sub-Research Question

The data for the distribution of the relevant theses according to the method are presented in Table 6.

Table 6. Distribution of the Studies Included in the Research According to Method Trends

Variable	Methods	Number (n)	%
Research Method Trend	Quantitative	81	69.8
	Qualitative	25	21.6
	Mixed Methods	10	8.6
Total		116	100

According to the data in Table 6, the findings regarding the method trends of the studies included in the study are presented in Table 4.6. According to the data, it was determined that 69.8% of the 116 studies were carried out by quantitative method, 21.6% by qualitative method and 8.6% by mixed method. This shows that the vast majority of research is focused on quantitative method.

Findings on the Seventh Sub-Research Question

The data for the distribution of the relevant theses according to the research model are presented in Table 7.

Table 7. Distribution of Theses Included in the Research According to Research Desing Trends

Variable	**Designs**	**Number (n)**	**%**
Research Design	Descriptive	82	70.69
Distributions of Theses	Phenomenology	12	10.34
	Experimental	8	6.90
	Semi-Experimental	5	4.31
	Case Study	5	4.31
	Meta-synthesis	4	3.45
Sum		116	100

In Table 7, according to the design trends of the studies included in the research, the most frequently used research design was the *Descriptive* studies constituted 70.69% (n=50) of the total theses. This is followed by the phenomenology (10.34%, n=12), experimental (6.90%, n=8), Semi-Experimental (4.31%, n=5), case study (4.31%, n=5) and meta-synthesis (3.45%, n=4).

Findings on the Eighth Sub-Research Question

The distribution according to the types of data collection tools used in the research is presented in Table 8.

Table 8. Distribution according to the types of data collection tools used in the studies included in the research

Data Collection Tools	**n**	**%**	**Developer**
Cyberbullying Scale	22	35,48	Patchin and Hinduja (2011)
Cyber Victimization Scale	18	29,03	Arıcak, Siyahhan, and Sarıbeyoğlu (2012)
Empathy Scale (Basic Empathy Scale)	12	19,35	Jolliffe and Farrington (2006)
Cyber Gossip Scale	10	16,13	Vranjes, Baillien, Vandebosch, and De Witte (2018)

When the distribution of data collection tools used in the research is examined according to their types, it is seen that the most preferred tool is the Cyberbullying Scale (35.48%). This scale has

been used to assess cyberbullying behaviors and has been widely included in studies (Patchin and Hinduja, 2011). This is followed by the Cyber Victimization Scale (29.03%) and the Empathy Scale (Basic Empathy Scale) (19.35%). The Cyber Gossip Scale (9.62%) was preferred to evaluate gossip behaviors among individuals, especially in online communication (Vranjes, Baillien, Vandebosch, & De Witte, 2018).

Findings on the Ninth Sub-Research Question

The distribution of other variables related to cyberbullying in the theses is presented in Table 9.

Table 9. Distribution for Other Variables

Variable	Other variable	Number (n)	%
Distribution for other variables	Cyber Victimization	24	20,69
	Empathy	12	10,34
	Academic Achievement	9	7,76
	Well-Being	9	7,76
	Parental Acceptance and Rejection	6	5,17
	Cognitive Distortions	6	5,17
	Use of Social Media	6	5,17
	Psychological Resilience	6	5,17
	Emotional Regulation	6	5,17
	Gender Perception	6	5,17
	Cyber Gossip	3	2,59
	Connecting to a School	3	2,59
	Technology Addiction	3	2,59
	Peer Bullying	3	2,59
	Cognitive Flexibility	3	2,59
	Loneliness	3	2,59
	Social Support	3	2,59
Sum		31	100

According to Table 9 data, it is seen that the other most frequently examined variable is cyber victimization. This variable, which was discussed in a total of 24 theses (20.69%), came to the fore in studies aimed at revealing the relationship between cyberbullying and victimization. The second variable most commonly associated with cyberbullying is empathy. Empathy, which is included in a total of 12 theses (10.34%), was examined to understand the effect of cyberbullying behaviors on empathy levels or how empathy levels affect cyberbullying tendencies.

Academic achievement and well-being ranked third, with 9 theses each (7.76%). These variables have been the subject of studies to understand the effects of cyberbullying on individuals' academic performance and psychological well-being. In addition, variables such as parental acceptance and rejection, cognitive distortions, social media use, psychological resilience, emotional regulation and gender perception have an important place in 6 theses (5.17%). These variables were discussed to reveal the effects of cyberbullying in the context of family relationships, individual psychological processes, social media habits and gender.

Less frequently examined variables include cyber gossip, school attachment, technology addiction, peer bullying, cognitive flexibility, loneliness, and social support. Each of these variables was discussed in 3 theses (2.59%) and was associated with cyberbullying at a lower level. As a result, cyberbullying was handled in a multidimensional way with both individual psychological variables (e.g., empathy, well-being, cognitive distortions) and environmental and social variables (e.g., parental acceptance and rejection, social media use, gender perception). This situation reveals that cyberbullying is examined in a wide range and has a wide range of effects.

CONCLUSION and DISCUSSION

The main purpose of this research is to make a bibliometric analysis of domestic theses on cyberbullying in Turkey and to reveal current academic trends, research methodologies and basic themes related to cyberbullying. Regarding the first sub-question of the research, the evaluation of the distribution by years shows that the issue of cyberbullying is receiving increasing attention in the academic literature. The intensification of studies in this field, especially in 2024, can be associated with both the rapid development of technology and the effects of these developments on individuals becoming more visible. As the prevalence of the use of technology increases, problems such as cyberbullying attract more attention and this paves the way for the intensification of academic interest. Arıcak (2009) and Tokunaga (2010) also emphasized that cyberbullying is a natural result of digital environments and supported the importance of studies in this field. It is seen that the studies carried out in 2022, 2023 and 2021 also made significant contributions. These years coincide with a period when online interactions are intensified and individuals spend more time with digital environments, especially with the effect of the pandemic period. Increased interaction on digital platforms with the pandemic has led to more frequent negative behaviors such as cyberbullying and has contributed to the increase in academic studies on this subject (Ybarra and Mitchell, 2004).

The analysis of thesis types for the second sub-question of the research reveals that master's theses are concentrated in this field. The fact that master's theses are at the forefront can be explained by the fact that the research area is relatively new. The fact that a dynamic and topical topic such as cyberbullying is underrepresented at the doctoral level is perhaps due to the limited treatment of the topic due to the extensive theoretical framework and long-term data requirements. Eğri (2022) have stated that such fields are initially addressed at the higher master's level. This finding is also consistent with the studies conducted by Altunok et al. (2021) and Canan Güngören et al. (2018).

Linguistic evaluations reveal that the theses were largely written in Turkish. The fact that academic studies in Turkey are mostly conducted in a local context and in Turkish can be explained by the researchers' efforts to create a more linguistically accessible academic environment. However, the low rate of dissertations in English also shows that integration into the international academic community is limited. Özdemir and Akar (2011) and Eroğlu and Peker (2015) emphasize that a global problem such as cyberbullying needs to be addressed more at the international level.

The wide range of universities where the theses are carried out shows that the subject is handled by different academic institutions. The fact that institutions such as Istanbul Gelisim University, Gazi University, Marmara University and Mersin University are at the forefront in this field can be considered as a reflection of the interest of these universities in technological issues. The findings of the research clearly reveal that the issue of cyberbullying is a current and interesting area. However, the fact that the studies focus heavily on recent years is due to the rapid change in technology. Calvete et al. (2010) stated that understanding how digital technologies affect individuals' social behavior has led to a continuous increase in academic interest. The prevalence of theses written in Turkish has developed in accordance with the local context and the language policy of the education system in Turkey. However, this situation brings with it a limitation such as the fact that the issue is not adequately represented at the international level. The production of more studies in English can increase the contribution of research in Turkey to the global academic field.

The fact that the research has limited contribution in terms of doctoral dissertations may reflect the lack of theoretical and long-term research in this area. Conducting more studies at the doctoral level may enable the issue of cyberbullying to be addressed more comprehensively (Uludaşdemir and Küçük, 2021). The increase in studies conducted in recent years can be attributed to a greater awareness of the impact of technological changes on individuals. The increase in digital interactions, especially during the pandemic period, has accelerated the studies in this field. This has been highlighted by Ybarra and Mitchell (2004) in terms of understanding how online environments affect the psychosocial dynamics of individuals. The

diversity of universities in which the theses are carried out shows that academic interest in this field is spread to a wide audience. However, the greater representation of certain universities indicates that these institutions have a strong academic infrastructure in the field of cyberbullying.

The distribution of the examined theses according to the main disciplines presents a picture in which the weight in the field of psychology is clearly visible. The heavy representation of the discipline of psychology in research can be attributed to the important contributions that this field makes to understanding the behavioral and cognitive processes of individuals (Englander et al. 2017). The fact that psychology offers theoretical frameworks and applied approaches to understanding the experiences of individuals in the digital environment explains the dominance of this field in studies. In addition, the complex nature of issues such as cyberbullying and digital behavior, which often require psychological analysis, supports this preference (Kowalski & Limber, 2007). The fact that 17.24% of the studies in the field of education and training are involved shows that this discipline plays an important role in understanding the digital literacy and online behavior of young individuals. Increasing the awareness of educators on cyberbullying, digital behavior, and positive use of technology emphasizes the importance of studies in this field (Kaya & Cenkseven Önder, 2022). However, the low representation of disciplines such as sociology, communication sciences and nursing suggests that the interdisciplinary potential of these subjects has not been fully utilized.

The underrepresentation of science and technology and computer engineering is a surprising finding. Considering that technological developments in the digital world shape individuals' online experiences, it is understood that more research is needed in these areas (Belsey, 2004). The inclusion of disciplines that can analyze the effects of technology on human behavior in such studies offers an important opportunity for future research. On the other hand, low contributions in disciplines such as journalism, pediatrics, sports, forensic medicine and psychiatry reveal that the dimensions of these fields related to digital behaviors are not adequately addressed. For example, issues such as media literacy and online content production need to be further researched within the discipline of journalism (Çakmak, 2009). Likewise, there is an increasing need for studies in the field of child health and diseases that address the effects of digital environments on children (Arıcak, Kınay & Tanrıkulu, 2012).

The fact that the vast majority of the methods used in research are based on quantitative approaches clearly reflects the preferred scientific methodology in this field. The use of quantitative methods at a rate of 69.8% reflects the belief in the reliability of numerical data in data collection and analysis processes (Balcı, 2022). However, the use of qualitative methods and mixed approaches to a more limited extent shows that the in-depth analyses provided by these methods are not sufficiently utilized. The use of qualitative methods at a rate of only 21.6% indicates the lack of research aimed at understanding the experiences and perceptions of individuals in depth. Qualitative studies can be an effective method for revealing the contextual meanings of individuals' experiences online. In particular, the fact that mixed methods are preferred at a rate of only 8.6% suggests that the integration of interdisciplinary approaches and different methodologies is not sufficiently achieved (Kaya & Cenkseven Önder, 2022). The fact that the most commonly used model in research is the scanning method shows that this model is widely used as a wide data collection tool. The use of the survey model at a rate of 43.10% indicates a tendency to analyze general trends and large samples (Aygün, 2016). However, the fact that descriptive methods ranked second with a rate of 27.59% emphasizes the need for contextual analysis in studies. The fact that models such as phenomenology, experimental, case study and meta-synthesis are less preferred shows that the in-depth analysis potential offered by these methods is not sufficiently utilized (Arıcak, Kınay & Tanrıkulu, 2012). In particular, meta-synthesis methods can offer a more holistic perspective by combining the results of different researches, and the more frequent use of these methods should be encouraged. Future studies have the potential to make more comprehensive analyses by integrating the perspectives of different disciplines. In this context, increasing the use of methods such as phenomenology

and meta-synthesis will provide an opportunity for in-depth analyses. In addition, the promotion of interdisciplinary research can lead to a more comprehensive treatment of issues such as digital behavior and cyberbullying (Kowalski & Limber, 2007).

It reveals that research shows a significant concentration on cyberbullying and related concepts. First, the variety of data collection tools is remarkable. The fact that the Cyberbullying Scale is the most commonly used tool reflects the widespread concerns in this area. Cyberbullying has become an increasing social problem in recent years with the effect of digitalization and has been one of the main themes guiding research. Research conducted by Kepenekçi and Çınkır (2003) has also revealed that the dynamics of bullying among students have become more complex in the digital environment and this situation has negative effects on students. In this context, the scales used to evaluate cyberbullying show that research aims to better understand this problem. The frequent use of the Cyber Victimization Scale and the Basic Empathy Scale indicates that the relationship between victimization and empathy levels and cyberbullying should be investigated. The victimization experienced by bullied individuals can deeply affect their psychological and social development. A study by Kocaşahan (2012) shows that cyberbullying has emotional and cognitive effects on students, and their lack of empathy can reinforce such behaviors. For this reason, research on empathy development emphasizes the need to strengthen strategies and empathic responses to cyberbullying. The fact that cyber victimization is the most frequently examined variable with cyberbullying shows that the deep effects of this phenomenon on individuals dominate the research field. In various studies, it has been determined that the academic success of individuals who are cyberbullied decreases and their psychological well-being is negatively affected. This shows that cyberbullying leads to a great deterioration not only in social relationships but also in academic achievement. Arıcak, Kınay and Tanrıkulu (2012) emphasize that there is a strong relationship between cyberbullying and low academic achievement and that this relationship should be resolved.

The impact of empathy levels on cyberbullying is one of the other important findings in this area. Empathic individuals are known to prefer to help others rather than harm them. Increasing empathy training can be an effective method to reduce cyberbullying rates. Kaya and Cenkseven-Önder (2022) state that empathy levels are an important factor in preventing cyberbullying and that studies on this subject can contribute to the development of effective strategies for the prevention of cyberbullying. Social media use stands out as a major risk factor for cyberbullying. Today, social media has become the main platform where young people interact, and the bullying cases that take place here have spread rapidly and become a major social problem. This situation has increased the studies investigating the relationship between social media use and cyberbullying. Belsey (2004) emphasizes that bullying on social media platforms can be much more harmful, as bullying on social media platforms can reach wider audiences. In addition, the frequently featured words in the word cloud analysis, such as "cyber," "bullying," "internet," "digital," "addiction," "social," and "loneliness," reflect major themes associated with cyberbullying. These words show that bullying in the digital world and its psychological effects on individuals are investigated. In addition, themes such as loneliness and addiction also show that there is a growing body of research aimed at understanding the emotional and social dimensions of cyberbullying.

In the light of these results, the following suggestions can be offered to researchers and practitioners working in the field of cyberbullying.

- Studies can be carried out to diversify the scales used in the evaluation of cyberbullying behaviors and to adapt these scales to different age groups and cultural contexts.
- Qualitative research methods can be used to understand the relationship between cyber victimization and empathy in more depth.
- In studies examining the effects of family dynamics on cyberbullying, tools such as the parental acceptance and rejection scale can be used more.

- By focusing on less-studied variables such as online gossip, loneliness, and social support, new dimensions associated with cyberbullying can be introduced.
- The long-term effects of individual outcomes, such as academic achievement and psychological well-being, on cyberbullying can be monitored.
- Empathy development programs can be implemented to reduce cyberbullying behaviors and the effects of these programs can be evaluated.
- Educational programs to prevent cyberbullying among children and young people can be supplemented by school-based initiatives.
- The effects of social media usage habits on cyberbullying can be discussed in more detail.
- Efforts to increase self-efficacy in online technologies can contribute to individuals becoming more resilient to cyberbullying.
- The effect of gender perception on cyberbullying can be examined on wider audiences and awareness studies can be carried out.
- Comparative studies can be conducted in different age groups to understand the relationship between cyberbullying and cognitive distortions.
- By addressing the relationship between school attachment levels and cyberbullying, policies can be developed to increase student engagement in schools.
- The interaction between technology addiction and cyberbullying can be examined through more extensive research and limitations on technology use can be proposed.
- Cross-cultural comparative studies can be carried out to understand the effects of variables associated with cyberbullying on different cultures.
- The effectiveness of the methods used in the fight against cyberbullying can be regularly evaluated and improved, enabling practitioners to offer more effective solutions in this regard.

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The Use of Augmented Reality in English Language Teaching: A Meta-Thematic Analysis

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Abstract
This study explores the role of augmented reality (AR) in English language teaching through a meta-thematic analysis of qualitative research. By synthesizing data from seven studies, the analysis identifies key themes regarding AR's impact on the teaching-learning process, student engagement, and challenges. The findings indicate that AR enhances vocabulary acquisition, increases student motivation, and facilitates a more immersive learning environment by making abstract concepts more concrete. Furthermore, AR supports creativity and active learning by integrating interactive and multimedia elements into instructional settings. However, challenges such as technological constraints, limited resources, and increased cognitive load are also observed. This study highlights the dual nature of AR in education, functioning both as a facilitator and a potential obstacle, emphasizing the need for well-structured implementation strategies to maximize its benefits.

Keywords: augmented reality (AR), meta-thematic analysis, English language teaching, augmented reality technology

INTRODUCTION

The educational sector has undergone and continues to experience significant transformations due to recent technological advancements. Technologies such as artificial intelligence, augmented reality and virtual reality, mobile learning, cloud computing, big data analytics, and educational robotics have emerged as innovative tools that enhance the effectiveness, interactivity, and accessibility of the teaching and learning processes. One prominent technology is augmented reality (AR), which enriches the real environment with computer-generated audio, graphics, video or GPS data (Azuma, 1997; Milgram & Kishino, 1994; Van Krevelen & Poelman, 2010). AR offers a readily accessible environment that can be utilized at any time and in any location (Dunleavy et al, 2009). Furthermore, it integrates two-dimensional and three-dimensional virtual data generated by a computer into the user's environment through various methods, including 3D graphics technology, sensing technologies, human-computer interaction techniques, and multimedia approaches (Cai et al., 2013).

The foundations of augmented reality technology were established in the 1960s through the pioneering work of Ivan Sutherland and his students on computer graphics at Harvard and the University of Utah. This technology, which saw its inaugural application with the US Air Force and NASA, has become increasingly widespread since the 1990s, thereby reaching a broader audience (Feiner, 2002). As a result of these advancements, one of the technologies that have gained significant popularity in recent years is augmented reality (AR) applications (Alkhamisi et al., 2013). The scope of augmented reality applications is believed to be quite broad. Examples of its applications include medicine and health (Azuma, 1997; Berryman, 2012), building (Delgado et al., 2020; Oke & Arowojya, 2021), education and training (Sharma et al., 2021; Saju

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et al., 2022), marketing (Berryman, 2012; Saju et al., 2022), and military and defense (Azuma, 1997).

Over time, educators have begun to recognize the innovative potential of augmented reality technology in the context of teaching and learning. Augmented reality (AR) technology enhances the learning process by making educational environments more interactive and enjoyable (Wu et al., 2013). This technology can be utilized to create enriched educational settings that offer real-world learning experiences that actively engage several senses (Luckin & Fraser, 2011). Today, with the increasing use of the internet and mobile applications, it is considered a crucial necessity to incorporate technology innovations into education and conduct research in this field (Liu et al., 2010; Tan & Liu, 2004).

Literature Review

Augmented reality in education

Augmented reality (AR) has been utilized in education to develop tools that enhance both learning and teaching experiences (Garzón, 2017). AR technology serves as a significant tool in creating enriched educational environments and fostering genuine learning experiences that engage multiple senses (Luckin & Fraser, 2011). This technology aids students in comprehending complex spatial relationships and abstract concepts by integrating virtual objects with real-world environments (Arvantis et al., 2007).

As indicated by Criollo-C et al. (2021), the integration of augmented reality in educational settings offers various benefits, including heightened student engagement and interaction. A substantial body of research demonstrates that AR technologies possess significant potential to improve teaching effectiveness and learning outcomes, as well as positively influence student motivation (Bacca et al., 2014; Billinghurst & Duenser, 2012; Cevahir et al., 2022; Chang & Hwang, 2018; Georgiou & Kyza, 2018; Ibanez et al., 2014; Sotiriou & Bogner, 2008; Yoon et al., 2018). Evidence suggests that AR not only enhances learning outcomes but also promotes digital literacy and enriches the educational environment (Akçayır & Akçayır, 2017; Chang et al., 2015; Chiang et al., 2014; Jerry & Aaron, 2010; Lai et al., 2019; Vázquez-Cano et al., 2020). In addition to significantly enhancing student engagement, motivation, and enjoyment in learning activities (Basumatary & Maity, 2023; Lampropoulos et al., 2022; Pellas et al., 2019), research suggests that AR applications can improve learning outcomes by facilitating a deeper understanding and retention of complex topics (Ibânez & Delgado-Kloos, 2018; Mystakidis et al., 2021; Sırakaya & Sırakaya, 2020).

Furthermore, AR technology enables students to visualize course materials in three dimensions and interact with them, thereby amplifying their learning experiences and facilitating the comprehension of complex subjects (Cheng & Tsai, 2013). According to Dunleavy and Dede (2014), AR serves as a valuable tool in inclusive education, effectively catering to the needs of students with various learning styles. AR is recognized as a versatile tool that accommodates various learning approaches by adapting to individual educational needs, promoting collaborative learning environments, and enhancing personalized educational experiences (Lampropoulos et al., 2022; Zulfigar et al., 2023). The combination of artificial intelligence and AR applications allows for the creation of personalized and engaging learning experiences (Zawacki-Richter et al., 2019). Furthermore, the integration of augmented reality (AR) with game-based learning (GBL) has the potential to transform educational experiences by boosting student motivation and enhancing learning outcomes (Pellas et al., 2019).

Despite its potential, augmented reality (AR) technology in education faces several challenges. The primary drawbacks of AR in educational settings involve technical difficulties and the complexities associated with developing AR materials (Khan et al., 2019). Furthermore, educators must possess sufficient knowledge and skills related to the implementation of AR (Akçayır & Akçayır, 2017). To effectively integrate augmented reality in education, training for educators and modifications to the curriculum are essential to fully realize its advantages (Tzima et al., 2019; Zulfigar et al., 2023). Other significant obstacles include the necessity for a

high level of technological expertise, as well as the rising costs and time constraints linked to AR integration (Bacca et al., 2014; Chen, 2019; Heintz et al., 2021; Wu et al., 2018). Additionally, concerns regarding technology (Albishri & Blackmore, 2024; Lin et al., 2011; Wu et al., 2013) and resistance from instructors (Lee et al., 2012) further complicate the adoption of AR in educational contexts and contribute to the challenges faced in adopting AR in educational contexts. Despite its benefits, AR also encounters challenges such as technological issues, usability concerns, and the need for appropriate hardware and internet access (Basumatary & Maity, 2023; Zulfigar et al., 2023).

Related Research On English Language Teaching

The volume of research investigating the application of augmented reality (AR) technology in education is experiencing significant growth. Numerous studies have highlighted the positive effects of AR technology on vocabulary instruction (Chen et al., 2017; Dalim et al., 2020; Hsu, 2017; Le et al., 2017; Parmaxi & Demetriou, 2020; Redondo, 2020; Wu et al., 2013), the overall learning process (Criollo-C et al., 2021; Heintz, 2021), as well as students' performance and motivation (Chen & Wang, 2015; Martinez et al., 2017). Additionally, research indicates that AR technology supports the enhancement of the four primary language skills in English language teaching (Liu, 2009; Liu et al., 2010; Liu & Tsai, 2013; Parmaxi & Demetriou, 2020).

Hagihara et al. (2022) proposed the development of an English vocabulary learning application for early childhood education that utilizes markerless augmented reality (AR). A systematic review conducted by Parmaxi and Demetriou (2020) indicates that mobile-based AR applications enhance reading, writing, speaking, and vocabulary skills among students. Nguyen et al. (2020) discovered that the integration of AR with gamification significantly improved student performance and engagement. Additionally, two AR-based educational game systems were developed and implemented to promote English vocabulary acquisition (Sun & Hsu, 2019), alongside an English tutoring system (Kim & Kim, 2018). Hsu (2017) examined the influences of learning styles, anxiety, and cognitive load within augmented reality game systems. Solak and Çakır (2015) explored the impact of augmented reality materials on vocabulary learning among language learners. Dunleavy and Dede (2014) conducted a comprehensive evaluation of the pedagogical affordances and constraints of augmented reality (AR) within the contexts of learning, teaching and instructional design. Their findings indicate that while AR holds significant potential to foster student engagement, motivation and individualized learning experiences, it also poses notable challenges related to technological limitations, increased cognitive load and complexities in pedagogical integration. In a similar vein, Hsieh et al. (2014) examined the impact of AR on student performance and reported that the use of AR applications led to improvements in academic achievement, particularly by enhancing conceptual understanding and promoting sustained learner motivation. Furthermore, Bacca et al. (2014) focused on the application of AR within educational contexts.

Purpose of the Research

The purpose of this study is to investigate the utilization of augmented reality (AR) in the context of English language instruction. To achieve the objectives of this research, the following questions are sought to be addressed:

1. How does the incorporation of AR influence English language teaching and learning process?

2. What contributions does AR make to the affective dimensions of student learning?

3. What are the potential drawbacks associated with the use of AR in English language instruction?

METHOD

Research Design

This study aims to investigate the application of augmented reality (AR) technology in English language instruction through a meta-thematic analysis of qualitative research in this field. Meta-

thematic analysis serves as a methodological framework for qualitatively synthesizing the shared and comparable characteristics of studies that explore various dimensions of a specific subject. Meta-thematic analysis is a process through which participant views (raw data) presented in qualitative research on a particular subject are re-analyzed via document analysis to derive themes and codes (Batdı, 2020). The analysis involves examining data collected through document analysis, which is subsequently redefined into coherent themes and codes, thus providing meaningful interpretations of the findings (Batdı & Atik, 2020).

Data Collection Tools

This study aims to provide a comprehensive analysis. To achieve this objective, the meta-thematic analysis was employed, and qualitative findings were derived through document analysis and the coding of qualitative data. The following databases were utilized to retrieve studies for the meta-thematic analysis conducted during this phase of the investigation: Web of Science, Scopus, Taylor & Francis, Science Direct, Springer, and ProQuest. A systematic search was conducted across these databases to identify relevant studies, utilizing the search terms "augmented reality" and "English language teaching." The search encompassed the entire period since the introduction of augmented reality technology up to the present. In total, 353 papers were identified across the six databases: 12 from Web of Science, 11 from Scopus, 14 from Science Direct, 267 from ProQuest, 30 from Springer, and 19 from Taylor & Francis.

Process

The inclusion and exclusion criteria for the meta-thematic analysis were developed based on the studies identified during the screening process. Specifically, the inclusion criteria required that eligible studies focus on augmented reality in English language instruction, provide qualitative themes or qualitative raw data, and are accessible in full text. Additionally, it was stipulated that only articles and theses meeting these criteria would be considered for the analysis. The studies included in the meta-thematic analysis were conducted across various educational levels, encompassing early childhood education, primary school, secondary (high school) education, and English as a Foreign Language (EFL) contexts. This diversity in school levels provided a broad perspective on the implementation and impact of the studied phenomenon across different age groups and learning environments. The studies identified after the screening process were subsequently evaluated according to the established inclusion and exclusion criteria. Figure 1 presents a PRISMA flow diagram that illustrates these criteria, along with rationales for excluding certain studies from the analysis.

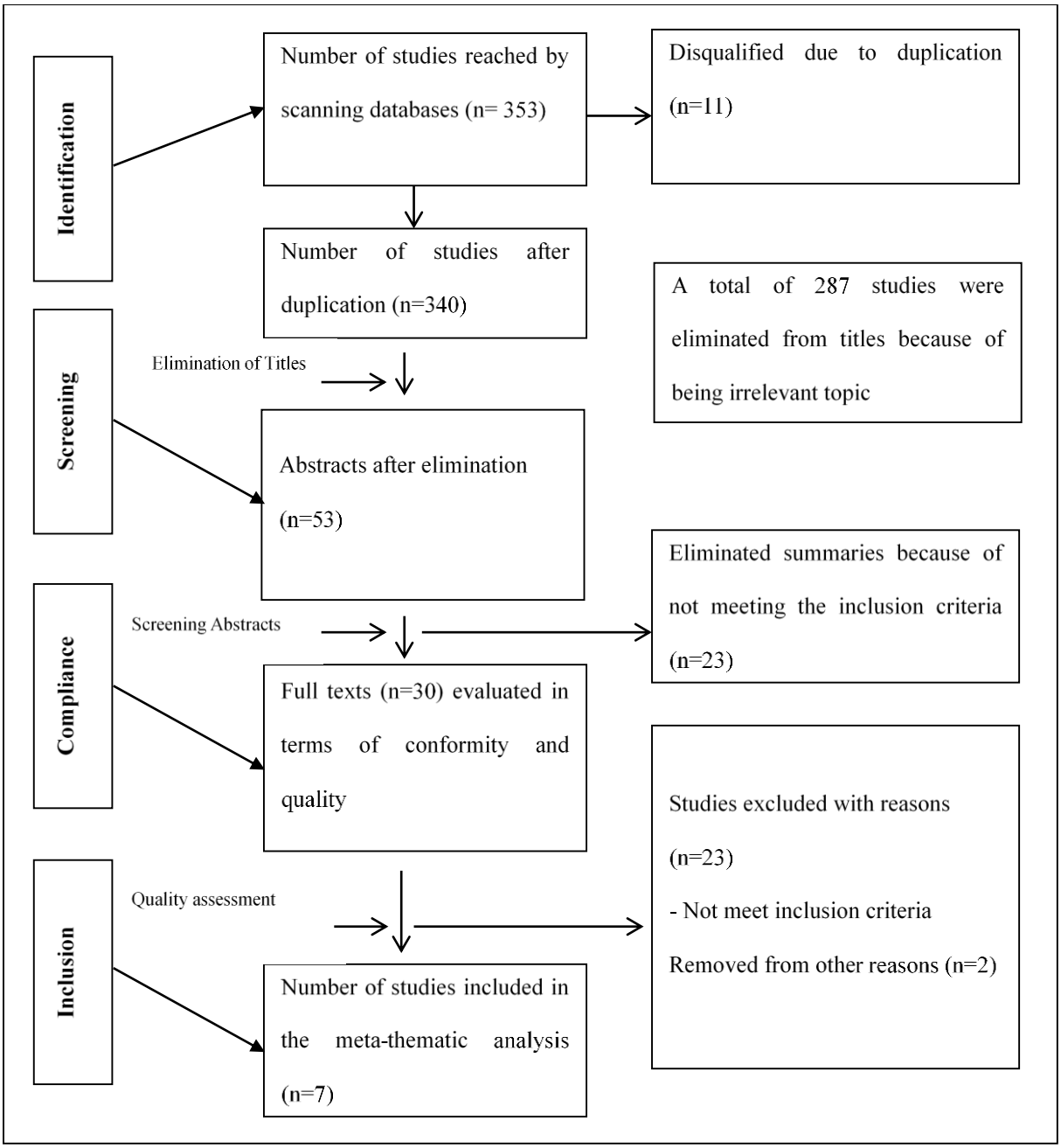


Figure 1. Flow diagram of the studies included in the meta-thematic analysis

Upon reviewing the PRISMA diagram, it was found that a total of 353 papers related to augmented reality in English language instruction were sourced from the specified databases. Of these, 11 studies were excluded due to duplication. Following the removal of duplicates, 340 studies remained. An additional 287 studies were excluded based on an evaluation of their titles and abstracts, as these were deemed adequate but not aligned with the primary objectives of the research. A further assessment of the abstracts of the remaining 53 studies using the "relevance" criterion led to the exclusion of 23 additional papers that did not meet the intended purpose. Consequently, 30 studies were retained. Among these, 23 papers were discarded for failing to satisfy the meta-thematic inclusion criteria. Furthermore, two studies were eliminated from analysis due to duplication across three distinct databases. As a result, a total of seven studies met the established inclusion criteria for meta-thematic analysis.

Analysis of Data

The research utilized content analysis to investigate the themes and codes identified in qualitative studies regarding augmented reality technology in English language instruction. Content analysis is a versatile research methodology that can examine documents within library and information science studies, effectively addressing both quantitative and qualitative research needs (Finfgeld-Connett, 2014).

Through meta-thematic analysis, the data derived from qualitative studies were articulated as themes and codes. These concepts were visually represented and interpreted in figures and presented using the Edrawmind tool, an online concept networking platform. This tool allowed for a clear and engaging interpretation of the information, making complex relationships and ideas easier to understand and analyze. The codes were categorized under three primary themes: “the reflections of augmented reality on the learning-teaching process,” “the contributions of augmented reality to students in the affective dimension,” and “the negative aspects of augmented reality.” The agreement between the two data coders regarding these themes was assessed using Cohen’s Kappa agreement values, which indicated a high level of concordance. Each study was assigned a code: M1, M2, ... for articles (M) and T1, T2, ... for theses (T), and these codes were consistently used throughout the research. Direct quotations providing support for the identified themes and codes were also incorporated in the relevant sections. An expert in the field reviewed the developed themes and codes to evaluate their appropriateness.

To ensure the validity and reliability of the research, each stage of the research procedure was meticulously documented and described. To mitigate potential researcher bias in the literature review, a comprehensive range of databases was explored, accompanied by a thorough evaluative process. The research findings were presented authentically, without lengthy explanations or elaborations. Two researchers independently generated unique themes and codes, and the findings were communicated through direct quotations.

RESULTS

The codes extracted from the studies analyzed through meta-thematic analysis were categorized into three themes: "The Reflections of Augmented Reality (AR) on the Teaching-Learning Process," "The Contributions of AR to Students in the Affective Dimension,” and “The Negative Aspects of AR." This section of the study presents the evolving themes along with the respective codes that comprise them in a distinct manner.

The Reflections of AR on the Teaching-Learning Process

The meta-thematic analysis revealed that the theme was represented by 29 codes, specifically focusing on “The Reflections of Augmented Reality on the Teaching-Learning Process.” These codes are illustrated in Figure 2.

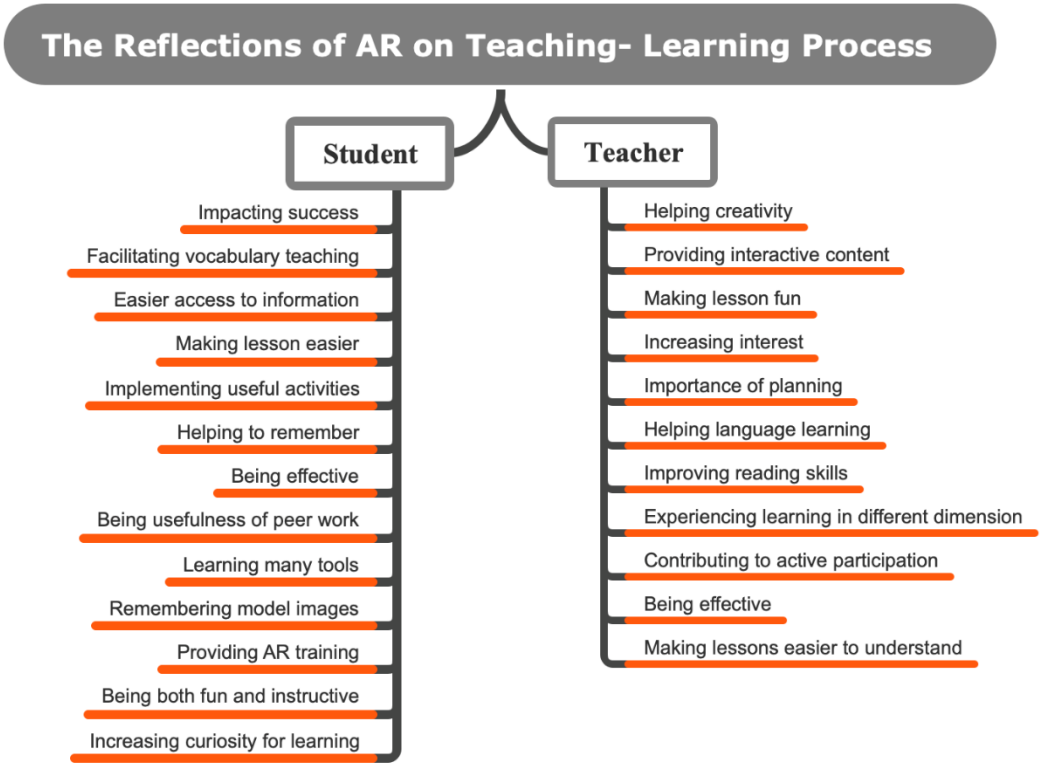


Figure 2. The reflections of AR on the teaching-learning process

In Figure 2, the codes addressing the reflections of augmented reality (AR) on the teaching-learning process are categorized into two distinct dimensions: teacher and student. In the teacher dimension, the most prevalent codes can be summarized as "facilitating language learning," "experiencing language in multiple dimensions," and "enhancing creativity."

For example, in the M2-p.9 study, it was stated, "The students use this for the first time, which is a positive experience. It immerses them in the language and allows them to engage with language learning from a different perspective." This statement supports the codes of "facilitating language learning" and "experiencing language learning from multiple dimensions." Furthermore, the remark, "It is appropriate to teach language skills using AR because lessons can be conducted almost anytime and anywhere," from M5-p..3129 aligns with the codes "facilitating language learning" and "effectiveness." Thus, one notable effect of augmented reality on the teaching-learning process is its capacity to enhance students' creativity. A reference supporting the code "enhancing creativity" includes the following statement: "The students will have more opportunities to express themselves especially in terms of creativity" (M5-p.3129).

Several codes related to the student dimension can be articulated as "facilitating vocabulary acquisition," "providing beneficial activities," "enhancing learning through applications," and "stimulating learning curiosity." Relevant references include the statement from the M1-p.10 study: "I believe that I will learn new English words through activities like this because it made it easier for me to learn English words…," which supports the code of "facilitating vocabulary acquisition." In the M6-p.9 study, a participant noted, "The demonstration of videos and animations within the book in AR applications increases my curiosity and confidence in learning, and I attribute my success largely to the use of AR technology." This statement underlines the code of "stimulating curiosity for learning." Finally, in the T1-p.129 study, it was remarked, "AR enables us to access information more easily and aids in visualizing information," which supports the code of "easier access to information."

The Contributions of AR to Students in the Affective Dimension

The meta-thematic analysis revealed a total of nine codes categorized under the theme "The Contributions of AR to Students in the Affective Dimension." These codes are illustrated in Figure 3.



Figure 3. The contributions of AR to students in the affective dimension

In M1-p.10, one participant stated, "I was very eager to do the activities. I was very excited when the teacher brought the tablets." This statement supports the codes "being enthusiastic" and "being excited." "How cool, what a magic thing. Using modern technology like that is my first time and I am full of enthusiasm about it." supports the code "being enthusiastic" (M6-p.8). A reference for the second most prevalent code, "being excited," can be found in another participant's remark: "The students were excited, but I was doubtful if they learned through the AR" (M2-p.7).

Additionally, augmented reality has been associated with students' experiences of being pleasant and feeling a sense of accomplishment in the affective domain. For instance, one expression contributing to the code "being pleasant" is as follows: "Learning the words was not difficult for me; it was easy. When we used the tablet, we both had fun and learned" (M1-p.11). "I feel very curious…. I will always want to use it." (M3-p.1522). A statement that exemplifies the code "feeling a sense of accomplishment" is: "When I completed the activities, I said I succeeded. I wanted my teacher to acknowledge my success. I was happy when I succeeded" (M1-p.11).

The statements "Demonstration of videos and animations in the book in AR applications increases my curiosity and confidence in learning" and "Thanks to AR applications, I prepare harder for the language test. I gained so much confidence about individual learning" together support the "increasing self-confidence" code. (M6-p.9). And also, "I like combining pieces in the puzzle. I liked looking through the tablet after combining the pieces" (M4-p.7005). Lastly, "Students have more opportunities to express themselves" supports the code "providing personal fulfillment" (M5-p.3128).

The Negative Aspects of AR

The meta-thematic analysis identified that the theme was articulated through a total of 27 codes centered on "The Negative Aspects of Augmented Reality." Of these codes, eleven pertain to teachers while sixteen relate to students. These codes are illustrated in Figure 4.

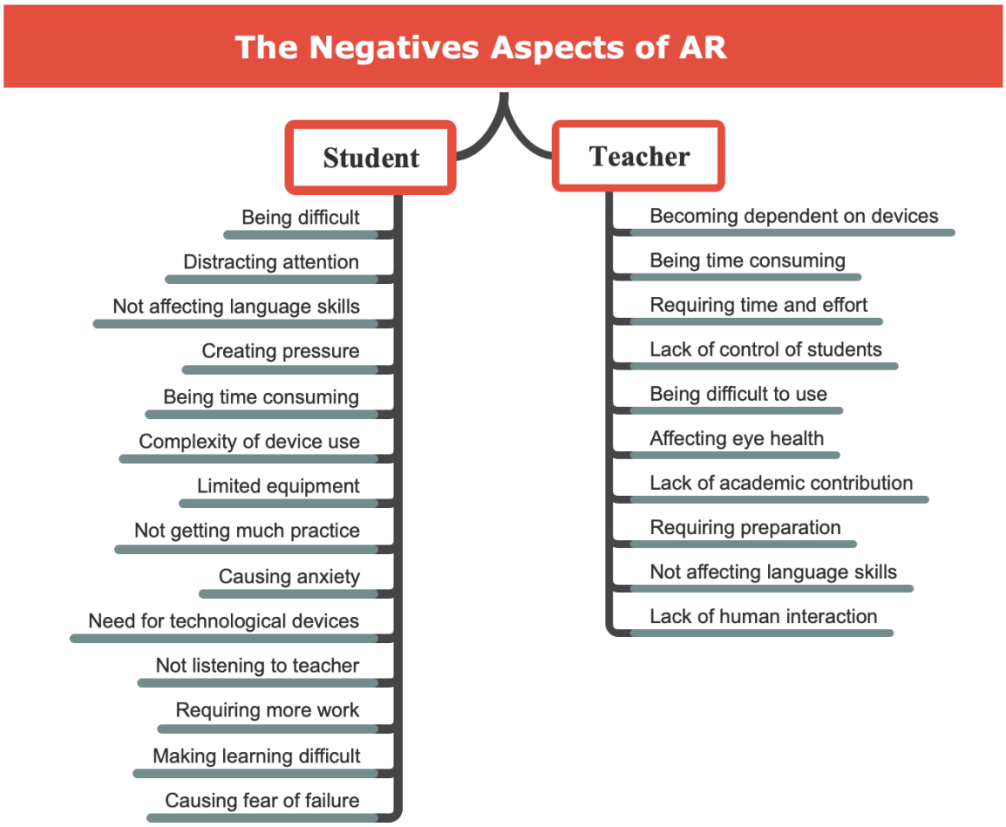


Figure 4. The negative aspects of AR

The code "being time-consuming" emerged as the predominant code for both teachers and students. Relevant statements that exemplify this code are as follows: In the T1-p.189 study, it is noted, "…Sometimes, I got a bit upset because I had to wait for a long time for the [AR] content to pop up. The technology itself should be fast and easily accessible, but I still had to wait for the loading time…" Similarly, in the M2-p.8 study, a student expressed, "The time was limited [. . .] I could not practice so much, I am skeptical if my language skills will improve." Regarding the teacher perspective, the following citation serves as a reference for this code: "in order to create a working AR will require a lot of time and efforts," as stated in the M5-p. 3130 study. "Without proper preparation, AR-based applications cannot be utilized, so it may raise the time required." supports "requiring preparation" and "requiring time and effort" code (M6-p.9).

The assertion, "The limited number of AR goggles made it difficult for everyone to practice their speaking skills" (M2-p. 8), illustrates the code concerning "limited equipment." Conversely, the statement, "You can use AR-based wearables and mobile phones in class, and you will always want to use them and discuss them, so you won't be listening to the teacher in class" (M3-p. 1523), further reinforces the code relating to "not listening to the teacher." Additionally, another pertinent reference concerning the teacher dimension is articulated in the following statement: "My classroom is rowdy and uncontrollable, which could be better for me and my lesson", and "Managing my classroom is important to me as some students may start arguing for the duration one uses the googles. This must be properly handled to avoid chaos in the class… (M2-p. 9). This statement supports the code identified as "lack of control of students.". "I had difficulty while holding the tablet. Holding it and looking at the screen is difficult. I was afraid to drop it. The tablet was a bit heavy" supports the code "causing anxiety" and "Combining pieces of the puzzle was difficult. I didn't like it much" (M4-p.7007) supports the code "being difficult" (M4-p.7007).

DISCUSSION

This study examines the impact of augmented reality (AR) technology on English language instruction. Research findings indicate that AR technology enhances the comprehension of abstract concepts by rendering them more tangible (Cheng & Tsai, 2013). It promotes student engagement and interaction (Criollo-C et al., 2021; Dalim et al., 2020), serves as an effective tool for language teaching (Kim & Kim, 2018; Liu, 2009; Sun & Hsu, 2019; Nguyen et al., 2020), and significantly contributes to the development of reading skills (Liu et al., 2010; Parmaxi & Demetriou, 2020). The design of AR systems should consider accessibility and the unique needs of diverse learners to optimize their educational effectiveness (Garzón et al., 2019).

In particular, the study's findings point to the notable effectiveness of AR in facilitating vocabulary acquisition, a result that is widely supported by prior research. Numerous studies support the efficacy of augmented reality (AR) technology in vocabulary acquisition (Chen & Wang, 2015; Chen et al., 2017; Dalim et al., 2020; Hsu, 2017; Lee et al., 2017; Parmaxi & Demetriou, 2020; Pan et al., 2021; Redondo, 2020; Sun & Hsu, 2019; Wu et al., 2013). These investigations demonstrate that AR applications facilitate vocabulary learning and enhance the retention of acquired vocabulary. Furthermore, AR has shown a moderate to significant positive impact on learning outcomes across various educational settings, contributing to an overall increase in learning effectiveness when compared to traditional instructional tools (Garzón & Acevedo, 2019). AR can alleviate unnecessary cognitive load by integrating real and virtual learning components, thus allowing for a more efficient allocation of cognitive resources (Thees et al., 2020; Kucuk et al., 2016; Lin & Yu, 2023). Additionally, AR significantly enhances student motivation, engagement, and self-efficacy by providing interactive and immersive learning experiences (Cai et al., 2022; Czok et al., 2023; Lin & Yu, 2023).

Furthermore, augmented reality (AR) technology has been identified as a significant contributor to the language teaching process in various capacities. The literature indicates that AR technology fosters interactive and meaningful learning experiences, thereby enhancing student motivation during instructional activities (Li & Wong, 2021). Additionally, AR has been recognized for introducing an innovative dimension to the teaching and learning processes (Akçayır & Akçayır, 2017; Besser et al., 2020; Chen & Tsai, 2013; Vazquez-Cano et al., 2020). It has demonstrated positive effects on academic achievement (Chen & Wang, 2015; Martinez et al., 2017) and has been found to enrich the overall learning experience (Redondo, 2020; Wu et al., 2013). Moreover, AR technology has been shown to facilitate improved retention of learned information among children (Liu, 2009; Wu et al., 2013). In this context, it becomes evident that AR represents a significant tool in creating student-centered learning experiences, offering opportunities for peer teaching and collaborative interactions (Kamarainen et al., 2013; Yılmaz, 2016). Collectively, these findings suggest that AR technology possesses considerable pedagogical value as an application in English language teaching.

The integration of augmented reality (AR) technology into the educational process has a significant impact on the affective dimension, which encompasses students' emotions, attitudes, motivation and values. In this context, AR contributes to enhancing learners' interest, engagement and positive attitudes toward learning, thereby fostering a more emotionally supportive and motivating educational environment. Numerous studies have demonstrated that augmented reality enhances students' awareness of learning objectives and fosters greater interest and motivation towards lessons and educational materials (Chiang et al., 2014; Dalim et al., 2020; He et al., 2014; Li & Keller, 2018; Önal et al., 2019; Redondo, 2020; Taşkıran, 2019). A study conducted by Pan et al. (2021) indicates that AR applications stimulate curiosity among students, thereby positively impacting their motivation. The majority of participants in this study reported enjoying the use of AR applications, a finding that corresponds with the conclusions drawn by Redondo (2020) and Wojciechowski and Cellary (2013). Furthermore, augmented reality has been shown to positively influence students' creativity (Kara et al., 2013; Yılmaz & Göktaş, 2017). Augmented Reality (AR) significantly enhances emotional responses in educational environments, demonstrating more pronounced effects on affective dimensions

than on cognitive dimensions. This includes improved engagement, motivation, and positive attitudes toward the learning material (Shen & Tsai, 2022; Lin & Yu, 2023). Although AR can reduce cognitive load in educational contexts and indirectly influence emotional responses by making the learning experience more enjoyable and less stressful, it does not consistently lead to improvements in learning outcomes (Thees et al., 2020).

Research indicates that augmented reality (AR) technology has both positive and negative effects on learning outcomes. For instance, some studies suggest that AR applications can distract students' attention (Kesim & Özarslan, 2012). Additional adverse factors identified include a reduction in human interaction (Huang et al., 2021) and the potential to cause health issues, such as eye disorders (Yılmaz & Batdı, 2016). Furthermore, the implementation of AR technology requires additional time for setup and usage (Gavish et al., 2015), while the financial costs associated with AR devices can be prohibitive (Alkhattabi, 2017; Bacca et al., 2014; Heintz et al., 2021; Lindergen & Johnson-Glenberg, 2013; Scrivner et al., 2016). Although AR has proven effective in certain contexts, it may not be uniformly benefit all dimensions of learning. Additionally, its application may pose challenges in crowded classrooms, potentially necessitating more instructional time than traditional methods (Akçayır & Akçayır, 2017). Moreover, augmented reality (AR) technology can be complex and costly, presenting a significant obstacle to its widespread implementation in educational settings (Alzahrani, 2020). Frequent technical issues, such as connectivity problems and software malfunctions, can disrupt the learning process and diminish the effectiveness of AR tools (Akçay, 2017; Titchiev et al., 2023). Additionally, some educators may resist adopting new technologies due to a lack of experience or training, which can impede the effective integration of AR (Alzahrani, 2020; Klivak, 2024).

CONCLUSION

This study makes a significant contribution to the existing body of knowledge by systematically synthesizing qualitative findings on the use of augmented reality (AR) in English language teaching through a meta-thematic analysis. While previous studies have largely focused on isolated implementations or specific outcomes, this study offers a holistic perspective by identifying recurring themes across diverse educational levels, including early childhood, primary, secondary, and EFL contexts. The findings extend the literature by demonstrating how AR fosters not only vocabulary acquisition and language development but also supports emotional engagement, learner autonomy and interactive participation – dimensions that are often overlooked in technology- integrated language instruction.

Moreover, the study brings critical attention to the affective outcomes of AR, such as increased enthusiasm, enjoyment, motivation and a sense of accomplishment, which play a vital role in sustaining long-term learning engagement. These insights enrich the discourse surrounding affective learning theories within digital environments. Additionally, by identifying the practical challenges associated with AR - such as time constraints, technological limitations and classroom management issues- this study highlights the need for strategic planning and teacher training in the effective integration of AR into language curricula.

From an interdisciplinary perspective, the study bridges educational technology, instructional design and language pedagogy, offering empirically grounded recommendations for researchers, educators and policymakers. It provides a valuable evidence base for future research aiming to explore the sustainable and pedagogically sound integration of immersive technologies into formal education. Ultimately, this study not only consolidates existing findings but also opens new avenues for inquiry into the role of AR in shaping both cognitive and affective dimensions of language learning.

THE IMPLICATIONS FOR FURTHER RESEARCH

The findings of this study present several avenues for further scholarly exploration into the use of augmented reality in English language teaching. Firstly, while the current meta-thematic analysis offers a comprehensive understanding of AR's affective and instructional contributions,

future research should employ experimental or quasi-experimental design to establish causal links between AR integration and learning outcomes, such as vocabulary retention, language proficiency, and long-term academic achievement.

There is a growing need to investigate the differential impact of AR on learners with diverse characteristics, including age, gender, learning styles, socio-economic background, and prior digital literacy. Such studies would provide a nuanced understanding of how AR can be personalized to meet individual learners' needs and optimize learning experiences across various contexts.

Future research should examine the pedagogical strategies and classroom management techniques that best support the effective use of AR technologies. This includes exploring how AR can be integrated with other instructional models- such as flipped classrooms, project-based learning, or gamification- to enhance student engagement and learning performance.

Longitudinal studies are needed to assess the sustainability of AR's educational benefits over time. These studies could explore how continuous exposure to AR applications affects learner motivation, autonomy, and knowledge transfer in real-world language use.

Finally, interdisciplinary collaborations involving instructional designers, educational technologists, linguists, and cognitive scientists are essential to advance theory- driven models for the integration of AR in language education. Such collaborations can contribute to the development of robust, evidence-based frameworks that guide future implementations and policy development in technology-enhanced language learning.

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Determination of Middle School Students' Alternative Ideas in the "Conduction of Electricity" Unit through Score Analysis

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Abstract
This study aims to identify the alternative ideas of 6th-grade students regarding the "Conduction of Electricity" unit. Data were collected from students who had completed the electricity conduction unit. The study was conducted using a survey model with 54 6th-grade students. A test developed by Aydoğdu (2017) assessed student performance on the electricity conduction unit. The test consisted of 20 multiple-choice questions, and correct and incorrect responses were analyzed. The results showed that student responses fell into patterns such as high score-high concentration (HH), low score-low concentration (LL), medium score-medium concentration (MM), and medium score-low concentration (ML). Based on these patterns, students' alternative ideas were examined. It was found that students had misconceptions about electrical resistance and the factors that influence it. As a result, it is recommended that more efforts be made to detect and address learning deficiencies in the electricity conduction unit, that science teachers relate the topic more to everyday life during instruction, and that teachers actively work to correct students' alternative ideas.

Keywords: Electricity conduction, score analysis, alternative ideas, 6th-grade.

INTRODUCTİON

Changing societal needs influences the knowledge and skills expected from individuals. These knowledge and skills can be categorized as problem-solving, critical thinking, entrepreneurship, determination, and contributing positively to society. Educational curricula are continuously updated to nurture individuals with these qualities (Bonney et al., 2005; MEB, 2018). For the goals outlined in these curricula to be achieved, students must construct knowledge scientifically in their minds, enabling meaningful learning (Yüzbaşıoğlu & Kurnaz, 2022). Their prior knowledge and beliefs influence students' ability to construct scientific knowledge. Moreover, when students assign subjective meanings to scientific knowledge and internalize them through their experiences, it adversely affects their ability to learn accurate information (Pastırmacı, 2011). This situation creates challenges in constructing new knowledge (Hasanah, 2020). In the literature, this phenomenon is referred to as "alternative ideas," defined as mental constructs about a concept inconsistent with scientific knowledge (Salih & Polat, 2005). In other words, students interpret and understand concepts not based on scientific facts but according to their subjective perspectives (Pastırmacı, 2011). Alternative ideas represent students' explanations of concepts or topics that are not aligned with scientific knowledge (Yüzbaşıoğlu & Kurnaz, 2022). These ideas are shaped by students' naive beliefs, preconceptions, or non-scientific constructs that they generate instead of accurate scientific knowledge (Yılmaz, 2015). The presence of alternative ideas is considered one of the most significant obstacles to future learning. In recent decades, research has increasingly focused on identifying and addressing alternative ideas (Caymaz, 2020). This trend may stem from the growing recognition of the need to identify and rectify alternative ideas to enable meaningful learning. One of the areas where

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alternative ideas have been extensively studied is the topic of electricity in science education (Salih & Polat, 2005; Kapartzianis & Kriek, 2014).

Although electricity is closely related to students' daily lives, learning difficulties are encountered in understanding the associated concepts (Ayvacı, Ernas, & Dilber, 2016). Students' possession of alternative ideas contributes to these difficulties, making it harder for them to meaningfully construct new concepts in their minds (Yüzbaşıoğlu & Kurnaz, 2022). Studies have shown that students at nearly all educational levels hold alternative ideas about electricity (Çıldır & Şen, 2006; Yıldırım et al., 2008; Ecevit & Şimşek, 2017). Identifying these alternative ideas is crucial for improving electricity teaching, as they significantly influence students' comprehension of the subject (Salih & Polat, 2005). Since newly acquired knowledge is constructed by relating it to students' prior knowledge, identifying alternative ideas is critical for effectively teaching electricity.

The literature reveals a range of alternative conceptions that align with the framework of this study and reflect common misunderstandings about electrical phenomena. For instance, some students believe that a plastic spoon can conduct electricity due to its failure to light a bulb or that conductivity occurs through atomic vibration (Ayvacı et al., 2016). Similarly, the idea that a porcelain plate is non-conductive because it does not "attract electricity" reflects a flawed understanding of insulation (Canpolat & Ayyıldız, 2019). Others assume that water, particularly salt water, is conducive either because electricity can be generated from it or because it is turbid (Günaydın, 2019; Keser & Başak, 2013; Kömürcü, 2010). Misconceptions also extend to the belief that the compactness of particles determines conductivity (Ayvacı et al., 2016) or that pure water conducts electricity if it transmits heat and light (Keser & Başak, 2013). Students also perceive conductive materials as inherently safe to use due to their function (Ayvacı et al., 2016; Gökçe, 2018), and mistakenly believe that conductors lack resistance or that insulators possess extremely low resistance (Keser & Başak, 2013; Tiftikçi et al., 2017). Regarding electric circuits, it is erroneously believed that increasing the length of a wire or replacing conductors with more resistant materials enhances bulb brightness (Caymaz & Aydın, 2019; Saputro et al., 2018), or that bulb brightness increases with the number of bulbs used (Brna, 1988). Additional misconceptions include the belief that electricity flows faster through shorter wires (Küçüközer, 2004; Keser & Başak, 2013), that thinner wires resist electrical flow (Villarino, 2018; Keser & Başak, 2013), and that the bulbs' energy consumption influences resistance (Wainwright, 2007). Finally, some students think bulb brightness is unrelated to resistance (Hussain et al., 2013).

These misconceptions highlight the complexity of electrical concepts and the need for targeted instructional strategies to foster accurate scientific understanding. Students' prior knowledge about scientific concepts can sometimes be shaped by incomplete or inaccurate experiences, leading to persistent misconceptions. Rather than having incorrect conceptual frameworks, it may be more advantageous for learners to begin with no preconceived ideas, as misconceptions tend to obstruct the assimilation of scientifically accurate knowledge (Baki, 1999; Hırça, 2004). Because the learning process involves integrating new knowledge with existing cognitive structures, prior misunderstandings can create long-term barriers to meaningful learning (Van Riesen, Gijlers, Anjewierden & de Jong, 2018). Misconceptions formed in earlier educational stages may endure unless identified and addressed appropriately. Research shows that these misconceptions often arise from students' informal experiences or incomplete instruction and can make it difficult for them to accept or internalize scientifically accurate information later in their academic journey (Karakaya, Yılmaz, Çimen & Adıgüzel, 2020). For science learning to become genuinely meaningful, students' existing ideas must be brought to light and considered in the design of instructional interventions (Ayas, 2005).

Furthermore, understanding students' thinking, their interpretations of concepts, and how they mentally organize knowledge is essential for developing effective teaching strategies (Horton, 2007). Instruction that connects scientific content to familiar, real-world contexts helps students form more coherent and transferable understandings (Hançer, Şensoy & Yıldırım, 2003). Within science education, this contextualized approach not only enhances comprehension but also

reinforces the relevance of science in everyday life (Karaaslan & Ayas, 2016). In Turkey, science education spans from early childhood to university through systematically structured curricula. However, students often carry forward beliefs formed in earlier grades—many of which may later manifest as alternative conceptions (Kızılcık, Çelikkanlı & Güneş, 2015). As stated in the examples above, it is clear that students at various levels of education have misconceptions about electricity. These findings underline the need to detect and remediate alternative conceptions early to prevent their reinforcement and ensure that scientific understanding is developed on solid foundations (Kurnaz & Ekşi, 2015). In this context, the current study aims to contribute to the identification of such alternative ideas and support the design of more effective teaching practices.

An examination of the literature reveals that various tools are used to identify and address alternative ideas about electricity. These tools include analogies (Şen & Aykutlu, 2011), drawings (Meşeci, Tekin, & Karamustafaoğlu, 2013), concept maps (Aykutlu & Şen, 2012), the learning phases method (Salih & Polat, 2005), concept tests (Demirci & Çirkinoğlu, 2004; Karakuyu & Tüysüz, 2011; Caymaz & Aydın, 2019), and open-ended questions (Küçüközer, 2003). In addition, multiple-choice academic achievement tests are frequently used to identify students' alternative ideas (Şenyiğit & Sılay, 2019). Academic achievement tests require students to choose the most accurate option from a set of responses related to a particular topic (Caleon & Subramaniam, 2010).

However, academic achievement tests have limitations in reflecting the reasons behind students' alternative ideas. For instance, students might select the correct answer for the wrong reason or an incorrect one despite accurate reasoning. This inability to determine causality in responses is seen as a limitation of academic achievement tests (Şenyiğit & Sılay, 2019). Another limitation is that students might arrive at the correct answer not through scientific understanding but by eliminating other options or guessing. Therefore, when investigating alternative ideas using multiple-choice tests, it is essential to analyze both correct and incorrect responses (Ezberci Çevik & Kurnaz, 2019, 2021; Kurnaz, 2022; Yüzbaşıoğlu & Kurnaz, 2022).

This study focuses on identifying the alternative ideas held by 6th-grade students regarding the "Conduction of Electricity" unit. Considering the limited number of studies examining alternative ideas in this unit (Caymaz, 2020), this research is anticipated to assist teachers in designing instructional environments. Additionally, by analyzing students' incorrect responses alongside correct ones in a multiple-choice test, the study aims to contribute a new perspective to the literature examining alternative ideas. For this purpose, the research problem is formulated: "What are the alternative ideas of 6th-grade students in the 'Conduction of Electricity' unit?"

METHOD

Research Model

The study is quantitative research aimed at identifying the alternative ideas held by 6th-grade students regarding the "Conduction of Electricity" unit. The research was conducted using the survey method, one of the application-oriented approaches within the quantitative research paradigm. Survey studies are commonly employed to describe and examine existing conditions or phenomena related to a particular topic or event (Yin, 2009).

An academic achievement test was administered to 6th-grade students who had completed the "Conduction of Electricity" unit according to the current curriculum. The scores and concentration analyses were performed using the multiple-choice items in the academic achievement test. Based on these analyses, descriptive evaluations were carried out to interpret the findings.

Study Group

The present research is situated within the scope of the sixth-grade science curriculum, specifically focusing on the Conduction of Electricity unit. Accordingly, sixth-grade students constitute the study’s target population. The sample was selected using a convenience sampling

strategy, a method recognized for its ability to optimize time and resource management while supporting the practical continuity of the research process (Büyüköztürk et al., 2018). Depending on the nature of the research design, the unit of analysis may include a single educational institution or extend to multiple settings (Yıldırım & Şimşek, 2005).

To explore students' alternative conceptions related to the Conduction of Electricity unit, a working group comprised 54 sixth-grade students attending three public middle schools in Kastamonu during the 2021–2022 academic year. In line with methodological standards for ensuring reliability in educational research, a minimum sample size of 30 participants was maintained (Cohen et al., 2007). Consequently, the findings of this investigation may be cautiously generalized to sixth-grade student populations enrolled in public schools located within the central district of Kastamonu.

Data Collection Tools and Process

Data were collected using an academic achievement test comprising multiple-choice items developed for the "conduction of electricity" unit. The achievement test, developed by Aydoğdu (2017), consists of 20 multiple-choice items. The item discrimination index was calculated as 0.6078, and the item difficulty index was calculated as 0.6241. According to these values, the test can be classified as having medium difficulty and high discrimination for students. The Cronbach Alpha reliability coefficient of the scale was calculated as 0.87. While the test was developed before the updated 2018 curriculum, the learning outcomes for the "conduction of electricity" unit remained unchanged between the 2017 and 2018 curricula. Therefore, recalculating the item difficulty and discrimination indices was not necessary. Data were collected during the 2021-2022 academic year after completing regular teaching activities, and the achievement test was administered accordingly.

Data Analysis

The data obtained from the achievement test were analysed using the technique developed by Bao (1999). This analysis technique includes the examination of incorrect answers along with correct ones. Each item on the test was analysed individually, and the frequency and percentage values of the responses were calculated. These calculations determined the students' scores (S) and concentration factors (C). This allowed for the analysis of both correct answers and incorrect ones to explore students' alternative ideas.

Scores represent the correct answers students provided for a multiple-choice question. Scores are calculated by dividing the number of correct answers by the total number of responses to that question (Bao, 1999). In addition to the correct answers, incorrect answers were analyzed using the "concentration factor." According to Bao (1999), the concentration factor takes values between 0 and 1, where 1 indicates high concentration and 0 indicates no concentration. For example, if 80 students distribute their answers evenly across all choices (e.g., 16 answers per choice), the concentration factor would be 0. If all students select the same option, the concentration factor would be 1. The formula used to calculate the concentration factor is provided below:

$$C = \frac{\sqrt{m}}{\sqrt{m}-1} \times \left(\frac{\sqrt{\sum_{i=1}^{m} n_i^2}}{N} - \frac{1}{\sqrt{m}} \right)$$

The concentration factor values obtained from this analysis were interpreted according to the coding scheme recommended by Bao (1999) (see Table 1).

Table 1. Three-Level Coding for Score and Concentration Factor

Skor (S)	**Level ***	**Concentration Factor (C)**	**Level ***
0~0,4	L	0~0,2	L
0,4~0,7	M	0,2~0,5	M
0,7~1,0	H	0,5~1,0	H

* L: Low, M: Medium, H: High

The concentration factor and score values were used together to interpret student performance and their alternative ideas. These patterns are explained in Table 2.

Table 2. Two-Level Coding for Student Answer Patterns (Bao, 1999)

	Pattern	**Meaning**
1	LL	Students show no distinct performance, and their answers appear to be random guesses.
2	LH	Students have low scores, but a majority selected the same incorrect answer.
	HH	Students demonstrate strong performance, with most answers correct.
3	LM	Students' answers are concentrated on two incorrect options.
	MH	There is a dominant trend in students' responses, though not widespread.
	MM	Students' answers are concentrated on both a correct and incorrect option.
	ML	Students' answers are distributed across two uncommon choices.

Based on the S and C values, patterns from Table 2 were used to analyse students' responses. Descriptive graphs were also generated to visualize the distribution of response patterns (Bao, 1999). These graphs categorize student responses into three main areas: qualified responses (HH pattern), mixed-quality responses (LM, MM), and random responses (LL).

Ethical Considerations

This study was conducted using voluntary consent forms. This study adheres to the guidelines of the "Scientific Research and Publication Ethics Directive" of the Higher Education Institutions in Turkey. No actions violating the ethics of scientific research or publication have been taken during the study.

RESULTS

The student's academic achievement test scores and concentration factor analysis results for the "conduction of electricity" unit are given in this section. The frequency and percentage values of the student's answers to the test questions were calculated. These values are shown in Table 3.

Table 3. Frequency and Percentage of Students' Responses to the Academic Achievement Test

Question *	A		B		C		D		Blank	
	f	%	f	%	f	%	f	%	f	%
1	1	1,9	49	90,7	2	3,7	2	3,7	0	0
2	17	31,5	3	5,6	30	55,6	4	7,4	0	0
3	33	61,1	11	20,4	7	13,0	2	3,7	1	1,9
4	1	1,9	34	63,0	12	22,2	6	11,1	1	1,9
5	1	1,9	2	3,7	4	7,4	47	87,0	0	0
6	38	70,4	6	11,1	8	14,8	2	3,7	0	0
7	37	68,5	2	3,7	1	1,9	14	25,9	0	0
8	8	14,8	26	48,1	10	18,5	9	16,7	1	1,9
9	2	3,7	4	7,4	2	3,7	46	85,2	0	0
10	9	16,7	36	66,7	6	11,1	3	5,6	0	0
11	8	14,8	9	16,7	15	27,8	21	38,9	1	1,9
12	1	1,9	3	5,6	46	85,2	4	7,4	0	0
13	5	9,3	3	5,6	40	74,1	6	11,1	0	0
14	5	9,3	6	11,1	40	74,1	3	5,6	0	0
15	8	14,8	10	18,5	16	29,6	19	35,2	1	1,9
16	46	85,2	6	11,1	0	0	2	3,7	0	0
17	12	22,2	3	5,6	17	31,5	22	40,7	0	0
18	7	13,0	42	77,8	2	3,7	3	5,6	0	0
19	7	13,0	22	40,7	20	37,0	5	9,3	0	0
20	26	48,1	14	25,9	4	7,4	9	16,7	1	1,9

*The option in bold font is the correct answer to that question.

Upon examining Table 3, it was observed that the question with the lowest correct response rate was Question 15, with 14.8%, and Question 20, with 16.7%. These questions involve the relationship between resistance and factors like cross-sectional area and length of the material. The highest correct response rate was for Question 1, with 90.7%, which dealt with the classifying conductive and insulating materials.

The analysis of distractor choices (incorrect answers) revealed that the most frequently selected distractor was Option A in Question 2, which 31.5% of the students chose. The least chosen distractor, at 1.9%, was Option A in Questions 1, 4, 5, and 12 and Option C in Question 7. Notably, in Question 16, none of the students chose Option C as their answer.

Table 4 shows each question's calculated score (S), concentration factor (C) values, and the resulting pattern. The S and C values for the students' responses were used to determine the patterns (e.g., HH, LL, MM, etc.). Continuing with the analysis, the S and C values for each question are provided in Table 4. These values indicate the performance and concentration levels of the student's responses to each question.

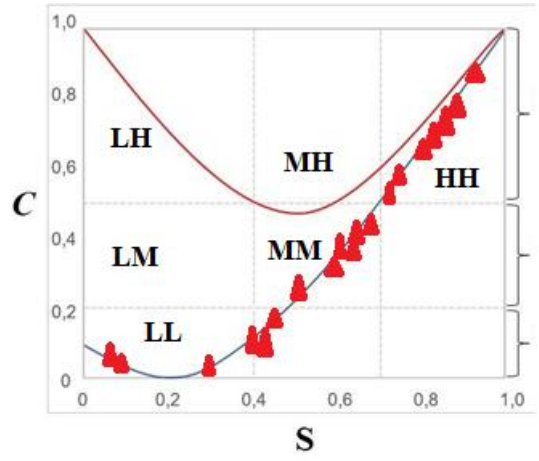
Table 4. Score (S) and Concentration Factor (C) Values for the Academic Achievement Test

Question	1	2	3	4	5	6	7	8	9	10
S	0,91	0,56	0,61	0,63	0,87	0,70	0,69	0,48	0,85	0,67
C	0,82	0,29	0,34	0,38	0,75	0,46	0,47	0,15	0,71	0,40
Pattern	HH	MM	MM	MM	HH	MM	MM	ML	HH	MM
Question	11	12	13	14	15	16	17	18	19	20
S	0,39	0,85	0,74	0,74	0,15	0,85	0,41	0,78	0,41	0,17
C	0,07	0,71	0,51	0,51	0,05	0,72	0,13	0,58	0,15	0,17
Pattern	LL	HH	HH	HH	LL	HH	ML	HH	ML	LL

S:Skor; Concentration Factor (C)

From Table 4, it can be seen that the concentration factor for students' answers was "high" in 8 questions (H level) and "medium" in 6 questions (M level). In 6 questions, the concentration factor was "low" (L level). Students' scores were high (H level) in 8 questions, low (L level) in 3 questions, and medium (M level) in 9 questions.

The graphical representation of the student's response patterns, based on their S and C values, is shown in Graph 1.



Graph 1: Patterns of Students' Responses

According to Graph 1, the students' responses were distributed across four patterns: high score-high concentration (HH), low score-low concentration (LL), medium score-medium concentration (MM), and medium score-low concentration (ML). The analysis revealed that the students demonstrated the HH pattern for eight questions, MM for six questions, OD for three questions, and LL for three. The questions that exhibited the HH pattern involved conductive and insulating materials, while the questions in the LL pattern were related to electrical resistance.

The alternative ideas identified from the students' responses to the electricity conduction unit are shown in Table 5.

Table 5: Alternative Ideas Identified in the Electricity Conduction Unit

Question	Pattern	Alternative Ideas
11 15 20	LL	Insulators have low electrical resistance. Conductors have high electrical resistance. When the cross-sectional areas of the same type of material are different, the thicker material has high electrical resistance, and the thinner material has low electrical resistance. There is a direct proportion between resistance and bulb brightness. As the length of the conductor increases, the bulb brightness increases. As the length of the conductor increases, the electrical resistance decreases.

DISCUSSION

This study analyzed a multiple-choice test related to the "Conduction of Electricity" unit by including correct and incorrect student responses. This analysis was conducted by examining students' scores and concentration factors. Based on this analysis, efforts were made to identify students' alternative ideas regarding the unit. In studies such as this one, a distribution of student responses clustering in the upper-right corner of the graph (Figure 1) for each question indicates and is expected to reflect quality learning (Ezberci Çevik & Kurnaz, 2019, 2021; Kurnaz, 2022; Yüzbaşıoğlu & Kurnaz, 2022). According to the distribution shown in Figure 1, it can be concluded that participants did not exhibit consistent quality learning about the topic. At the same time, some subtopics were adequately learned, others were insufficiently understood.

An analysis of the academic achievement test responses revealed that Questions 15 and 20 had the lowest correct response rates. These questions related to electrical resistance, with Question 15 measuring the relationship between cross-sectional area, length, and resistance and Question 20 assessing the relationship between conductor length, resistance, and bulb brightness. Thus, electrical resistance poses significant learning difficulties for students. The low correct response rates for these questions are seen in the studies of Acet & Akyüz, (2020). Therefore, it can be stated that it is consistent with the findings in the literature.

In addition to these questions, Questions 8, 11, 17, and 19 also had scores below 50%. These questions, which focus on electrical resistance, featured distractors related to factors such as the unit of resistance, its measurement, and variables affecting resistance. Electrical resistance is recognized as a challenging concept to learn (Gaigher & Kriek, 2007; Viard & Khantine-Langlois, 2001). Studies on electrical resistance indicate that learning deficiencies related to this concept exist across nearly all educational levels (Apaydın et al., 2019). Unaddressed learning deficiencies in earlier grades can hinder future learning. For instance, a study by Apaydın et al. (2019) involving pre-service teachers found that their prior knowledge about electrical resistance was significantly flawed. Pre-service teachers described electrical resistance using terms such as "reaction," "something that opposes current," "barrier," "reverse force," "reaction," "impediment," "force," "energy," and "resistance." Considering that the teaching of electrical resistance begins in the 6th grade, it is plausible that the learning deficiencies identified here persist into later years. Based on these findings, it can be concluded that there are deficiencies in teaching electrical resistance effectively.

The literature suggests that challenging topics, when supported by contextual approaches, lead to more meaningful and lasting learning (Karslı Baydere & Aydın, 2019; Yüzbaşıoğlu, 2022). Therefore, insufficient use of contextual teaching approaches in the instruction of electrical resistance may contribute to these deficiencies. Ayvacı et al. (2016) found that using context-based materials significantly improved students' conceptual understanding of conductive and insulating materials. From this perspective, future studies should explore the role of contextual approaches in teaching electrical resistance.

The question with the highest correct response rate in the academic achievement test was Question 1, at 90.7%. This knowledge-based question focused on materials' electrical conductivity and insulation properties. It can be inferred that students do not face significant difficulties in learning to classify conductive and insulating materials or understanding their properties.

Using the analytical framework Bao (1999) proposed, students' S and C values can be used to identify learning deficiencies and design effective instructional strategies (Kurnaz et al., 2018). The results of the study revealed that Questions 11, 15, and 20 were categorized under the LL pattern, which could indicate that students have deficiencies in learning related to these questions. This may also reflect a lack of scientific understanding of the topic (Yüzbaşıoğlu & Kurnaz, 2022). The medium difficulty level of the test items supports the prediction that students may have provided random responses due to a lack of scientific knowledge. Based on this analysis, it can be stated that students hold alternative ideas related to electrical resistance. As shown in Table 2, the LL pattern indicates that students exhibit low performance and provide responses that appear to result from random guesses. The literature supports the presence of alternative ideas about resistance at all levels of education (Küçüközer, 2003; Tiftikçi et al., 2017; Canpolat & Ayyıldız, 2019). This finding aligns with the results of the current study. The relationship between resistance and factors such as conductor type, length, and cross-sectional area may be too abstract for 6th-grade students, contributing to learning deficiencies. These deficiencies could create obstacles for subsequent learning.

For Question 11, 27.8% of the students selected distractor "C." The statement in Option II, "The resistance of conductors is low, and the resistance of insulators is high," was marked incorrect according to the students' responses. This suggests that students have alternative ideas about the resistance of conductive and insulating materials. Specifically, students believe that "insulating materials have low resistance, while conductive materials have high resistance."

For Question 15, the most frequently chosen options were "C" (29.6%) and "D" (35.2%), which surpassed the correct response, "A" (14.6%). Higher concentration indicates more prominent alternative ideas. In Option C, students compared the resistance of two materials based on their thickness. According to student responses, "For materials of the same type, thicker pieces have lower resistance, while thinner pieces have higher resistance" was marked incorrect. Thus, students appear to hold the alternative idea that "for materials of the same type with different cross-sectional areas, thicker materials have higher resistance, while thinner materials have lower resistance."

In Option D of Question 15, the statement "The bulb in a circuit with material one will shine brighter" was presented. According to the question, Material 1 had the lowest measured resistance among the options. Although Option D should have been correct, many students marked it as incorrect. This suggests that students hold the alternative idea that "resistance and bulb brightness are directly proportional."

For Question 20, the most frequently chosen options were "A" (48.1%) and "B" (25.9%). This question described a scenario where a 20 cm copper wire in an electric circuit was replaced with a 40 cm copper wire, and the effects on bulb brightness and resistance were examined. In Option A, the statement "The brightness of the bulb increases" was considered correct based on the students' responses. This indicates that students hold the alternative idea that "as the length of the conductor increases, the bulb brightness also increases." Another frequently chosen distractor, Option B, included the statement "The circuit resistance decreases," which students also marked as correct. This implies that students believe "as the length of the conductor increases, the electrical resistance decreases."

Questions exhibiting the HH pattern (1, 5, 9, 12, 13, 18) were related to conductive and insulating materials and, in some cases, bulb brightness (14, 16). A notable observation is that most of the questions categorized under the HH pattern (75%) pertained to electrical conductivity and insulation. Research on 6th-grade students' understanding of electricity

suggests that one of the topics with the most identified learning deficiencies and alternative ideas is electrical conductivity and insulation (Ayvacı, Ernas, & Dilber, 2016; Günaydın, 2019; Günel, Atila, & Büyükkasap, 2009; Keser & Başak, 2013). This highlights the potential contributions of studies to identify and address learning deficiencies and alternative ideas related to this topic.

In questions related to electrical resistance (e.g., length-cross-sectional area-material type), students' responses concentrated on two incorrect options, representing the ML pattern (100%). The lack of studies addressing learning deficiencies and alternative ideas about electrical resistance in the literature may contribute to this issue. Studies on electrical resistance tend to focus on higher education levels (Caymaz, 2020). These studies primarily examine the relationships between resistance and current, resistance and potential difference, and the conceptual representation of resistance. The current study, however, emphasizes the factors influencing resistance, highlighting its significance.

CONCLUSION and RECOMMENDATIONS

This study investigated sixth-grade students' alternative conceptions regarding the Conduction of Electricity unit, with a particular focus on their understanding of electrical resistance. The findings revealed that while students exhibited relatively accurate knowledge concerning the classification of materials as conductors or insulators, they held several misconceptions related to the concept of resistance. These alternative ideas encompassed the factors that influence electrical resistance—such as the type, length, and thickness of the conductor—as well as misunderstandings about the relationship between resistance and bulb brightness.

The analysis of student responses highlighted a number of recurring misconceptions, including the belief that conductive materials possess high resistance while insulating materials exhibit low resistance; that thicker wires have greater resistance than thinner ones of the same material; and that an increase in the length of a conductor leads to both greater brightness in bulbs and a decrease in electrical resistance. These findings suggest a fundamental misunderstanding of the principles underlying resistance and its observable effects in simple electric circuits.

In light of these outcomes, it is evident that students struggle to construct scientifically accurate mental models of electrical resistance, despite showing competence in identifying conductive and insulating materials. Therefore, targeted instructional interventions are necessary to correct these misconceptions and support conceptual change. It is recommended that future research further examine the root causes of these misunderstandings and develop instructional materials that effectively link the abstract concept of resistance to real-world phenomena. Moreover, science educators should integrate context-based learning strategies that explicitly connect resistance to everyday experiences, thereby enhancing students' conceptual understanding and minimizing persistent misconceptions.

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Hazırlık Sınıfında ve Birinci Sınıfta Öğrenim Gören Üniversite Öğrencilerinin Okul İklimi Algılarının İncelenmesi[1]

Investigation of School Climate Perceptions of Foreign Language Preparatory Class and First Grade Students

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Öz

Bu araştırmada, yabancı dil hazırlık sınıfında ve birinci sınıfta öğrenim gören öğrencilerin öğrenim gördükleri üniversite okul iklimine ilişkin algılarının ne düzeyde olduğunun tespit edilmesi ve bu öğrencilerin okul iklimi algılarına etki eden çeşitli demografik değişkenlerin incelenmesi amaçlanmıştır. Bunun için Tunceli ili Munzur Üniversitesinde öğrenim gören 327 üniversite öğrencisine 5 dereceli likert tipinde ölçek uygulanmıştır. Araştırmada "Üniversite Okul İklimi Ölçeği" ve "Kişisel Bilgi Formu" veri toplama aracı olarak kullanılmıştır. Ölçeğin geçerlik ve güvenirlik analizlerinde SPSS 27.00 ve Lisrel 8.8 programı kullanılmıştır. Araştırma kapsamında, betimsel istatistiklerde frekans ve yüzde analizi, ikili gruplarda t-testi, çoklu gruplarda one-way-anova testi ve gruplar arası farkı tespit etmek için Tukey testi yapılmıştır. Araştırma bulgularına göre katılımcıların üniversite okul iklimi algılarının iletişim boyutunda yüksek düzeyde iken öğrenme ortamı ile okula bağlılık boyutlarında ise orta düzeyde olduğu saptanmıştır. Katılımcıların üniversite okul iklimine ilişkin algıları cinsiyet, annenin eğitim düzeyi, babanın eğitim düzeyi, sahip olunan kardeş sayısı ve ikamet edilen yer değişkenlerine göre anlamlı farklılık göstermekte iken ailenin ortalama gelir seviyesi ve yaş değişkeni bakımından anlamlı fark göstermediği tespit edilmiştir.

Anahtar Kelimeler: Okul iklimi, üniversite, üniversite öğrencileri

Abstract

This study aimed to determine the level of perceptions of students studying in foreign language preparatory classes and first-year students regarding the university school climate where they study and to examine various demographic variables that affect these students' perceptions of school climate. For this purpose, a 5-point Likert-type scale was applied to 327 university students studying at Munzur University in Tunceli. In the study, "University School Climate Scale" and "Personal Information Form" were used as data collection tools. SPSS 27.00 and Lisrel 8.8 programs were used in the validity and reliability analyses of the scale. Within the scope of the research, frequency and percentage analysis, t-test in paired groups, one-way anova test in multiple groups, and Tukey test were used to determine the difference between groups. According to the research findings, it was determined that the participants' perceptions of university school climate were high in the communication dimension and moderate in the learning environment and school attachment dimensions. While the participants' perceptions of the university school climate showed significant differences according to the variables of gender, mother's education level, father's education level, number of siblings, and place of residence, it was found that there was no significant difference in terms of the family's average income and age.

Keywords: School climate, university, university students

[1]Bu çalışma, birinci yazarın doktora tezi kapsamında hazırlanmıştır.

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GİRİŞ

Toplumsal gelişime ve üretime katkı sağlama kapasitesine sahip bir gençliğin yetişmesinde üniversiteler büyük role sahiptir. Üniversitelerde öğrenim gören öğrencilerin okul iklimine ilişkin algılarının bu süreçte önemli rol oynayabileceği ifade edilebilir. Bu nedenle eğitimciler, öğrenciler ve eğitim örgütleri için okul iklimi olgusunun incelenmesinin önem arz ettiği söylenebilir. Üniversitelerin temel amaçlarından biri üst düzeyde eğitim sağlamaktır. Öğrencilerine nitelikli ve üst düzeyde bir eğitim sağlamak isteyen üniversitelerin okul iklimi kavramına önem vermesi gerektiği ifade edilebilir çünkü yapılan araştırmalar olumlu (pozitif) okul ikliminde öğrenim gören öğrencilerin akademik başarılarının daha yüksek olduğunu, öğrencilerin kendilerini daha iyi hissettiklerini ve sosyal ilişkilerinin olumlu olduğunu göstermektedir. Buna ek olarak, okul iklimi ile akademik başarı, öğrenci okul terki, öğrenme ortamı, okula bağlılık ve iletişim üzerine yapılan çalışmalar okul ikliminin birçok öğrenim çıktısı üzerinde olumlu ve anlamlı etkiye sahip olduğunu göstermektedir. Okul iklimi bundan dolayı uzun yıllardır araştırmacıların dikkatini çeken, halen günümüzde araştırılan ve önemini koruyan bir konudur. Olumlu okul ikliminin görüldüğü okullarda, yöneticiler ve öğretmenler arası ilişkilerin yapıcı olduğu, öğretmenlerin birbirleri ile çalışmaktan keyif aldığı, öğrencilerin akademik başarılarını arttırma amacında olan öğretmenlerin var olduğu öğrenme ortamları gözlemlenirken, olumsuz okul ikliminin görüldüğü okullarda bunların tam zıttı davranış ve tutumların hayat bulduğu görülmektedir. Okul iklimi öğrenci, öğretmen ve okul sistemi içerisinde yer alan tüm paydaşların davranış ve algılarını etkileyen, okul etkililiği başta olmak üzere bir okulu diğerlerinden ayırt eden, okul ile ilgili tüm paydaşları ilgilendiren bir konudur (Aldridge ve Blackstock, 2024; Dang, Nguyen ve Pham, 2024; Hoy ve Miskel, 2010; Konishi, Wong, Persram, Madriz ve Liu, 2022; Long, Zucca ve Sweeting, 2021; Tomaszewski, Xiang ve Huang, 2024; Zysberg ve Schwabsky, 2021).

Öğrenim gördükleri üniversitelerin olumlu okul iklimine sahip olduğunu algılayan öğrencilerin, öğrenci-öğrenci, öğrenci-akademik personel arasında sağlıklı iletişim kurarak, öğrenme ortamına ilişkin olumlu algılar geliştirerek ve okula aidiyet hissederek hem bireysel hem de toplumsal anlamda ülke geleceğine katkı sunması beklenen birer birey olarak öğrenim sürecini etkili bir şekilde tamamlayacakları düşünülmektedir. Üniversiteleri insani ilişkilerin yaşam bulduğu sosyal sistemler olarak değerlendirdiğimizde, öğrencilerine nitelikli bir eğitim ortamı sunmak isteyen üniversitelerin öncelikli olarak iletişim olmak üzere, öğrenme ortamı ve okula bağlılık gibi konulara önem vermesi gerektiği söylenebilir çünkü bu konuların üniversite öğrencilerinin okul iklimi algıları üzerinde etkiye sahip olduğu ifade edilmektedir (Cayubit, 2022; Rusticus, Pashootan ve Mah, 2023; Terzi, 2015; Zysberg ve Schwabsky, 2021; Wong, Dosanjh, Jackson, Rünger ve Dudovitz, 2021).

Öğrencilerin akademik gelişiminde ve sosyal ilişkilerinde önemli bir rol oynayan okul ikliminin çok boyutlu bir kavram olduğu ve okul ikliminin öğrenci sosyoekonomik düzeyi başta olmak üzere birçok değişken ile ilişkili olduğu bilinmektedir (Berkowitz, 2022; Darling-Hammond ve DePaoli, 2020; Eugene, 2020; Grazia ve Molinari, 2021; Zysberg ve Schwabsky, 2021). Literatür incelendiğinde okul iklimine yönelik yapılan çalışmaların sıklıkla ilk ve orta öğretim düzeyinde yapıldığı (Altuntaş, Demirdağ ve Ertem, 2020; Sökmez, Çok ve Avcı, 2020; Yoluk, 2020) görülmektedir. Son yıllarda ise araştırmacılar okul iklimi çalışmalarını ilköğretim ve orta öğretimden yükseköğretim düzeyine kaydırmışlardır (Çulcuoğlu ve Şentürk, 2021; Mutlu ve Çetinkaya, 2023; Özdemir, Çepni ve İncedere, 2020; Sayan ve Tavukçuoğlu, 2020). Yükseköğretim düzeyinde yapılan bu araştırmaların ortak noktası ise üniversite öğrencilerinin okul iklimi algılarının ne düzeyde olduğunun ölçülmesidir.

Üniversite okul iklimine yönelik ulusal düzeyde yapılan çalışmaların (Çulcuoğlu ve Şentürk, 2021; Erarslan, 2018; Mutlu ve Çetinkaya, 2023; Özdemir vd., 2020; Sayan ve Tavukçuoğlu, 2020) çok az olması dikkat çekmektedir. Buna ek olarak çok az sayıda araştırmada üniversite öğrencilerinin okul iklimi algılarına etki eden demografik değişkenler incelenmiştir (Akpulat,

Üzümcü ve Alyakut, 2022; Çulcuoğlu ve Şentürk, 2021; Erarslan, 2018). Bu çalışmalarda da üniversite öğrencilerinin okul iklimine etki eden demografik değişkenlerden sadece cinsiyet, sınıf, yaş ve bölüm türü değişkenleri ele alınmıştır. Literatür incelendiğinde; cinsiyet, yaş, ailenin eğitim düzeyi gibi değişkenlerin öğrencilerin okul iklimine ilişkin algılarına etki eden değişkenler arasında olduğu araştırmacılar tarafından ifade edilmektedir (Nishimura vd., 2020; Rudolf ve Lee, 2023; Toren ve Seginer, 2015). Bu araştırmayı diğer araştırmalardan farklı kılan ise cinsiyet, sınıf ve yaş değişkenlerinin yanı sıra, annenin eğitim düzeyi, babanın eğitim düzeyi, ailenin ortalama geliri, kardeş sayısı ve ikamet edilen yer değişkenlerinin incelenmesidir. Bu yönüyle diğer araştırmalardan farklılaşan bu çalışmanın literatüre katkı sağlayacağı düşünülmektedir. Buna ek olarak, bu araştırmanın Munzur Üniversitesinde yapılmasının nedeni ise Munzur Üniversitesi'nin 2008 yılında kurulmuş yeni bir kamu üniversitesi olması, üniversiteler arası sıralamada 190 üniversite içerisinden 110. sırada olması (URAP, 2024) ve Türkiye'nin sosyoekonomik gelişmişlik seviyesi bakımından iller sıralamasında alt sıralarda yer alan (Sanayi Bakanlığı, 2024) Tunceli ilinde yapılmış olması, bu araştırmanın sonraki araştırmalarda iller arası sosyoekonomik gelişmişlik düzeyi ve üniversiteler arası karşılaştırma yapılması adına okul iklimi araştırmacılarına fayda sağlayacağı düşünülmektedir. Yine bu araştırma ile literatürde ilk kez yabancı dil hazırlık sınıfında öğrenim görmekte olan öğrenciler ile birinci sınıfta öğrenim görmekte olan öğrencilerin okul iklimi algıları karşılaştırıldığı için alana katkı sağlayacağı düşünülmektedir. Bu bilgiler doğrultusunda, yabancı dil hazırlık sınıfı öğrencilerinin ve birinci sınıf öğrencilerinin öğrenim gördükleri üniversite okul iklimine ilişkin algılarının ne düzeyde olduğunun tespit edilmesi ve bu öğrencilerin okul iklimi algılarına etki eden çeşitli demografik değişkenlerin incelenmesinin amaçlandığı bu araştırma ile aşağıdaki sorulara cevap aranmıştır;

1- Katılımcıların okul iklimi algıları ne düzeydedir?

2- Katılımcıların okul iklim algıları;

a) cinsiyet

b) sınıf

c) ailenin eğitim düzeyi

d) ailenin ortalama geliri

e) kardeş sayısı

f) yaş

g) ikamet edilen yer değişkenleri bazında gruplaştırıldığında grupların görüşleri arasında manidar bir farklılık var mıdır?

3- Katılımcıların okul iklimi algıları ile alt boyutları arasındaki korelasyon düzeyi nedir?

Kavramsal Yapı

Okul İklimi

Bir örgütün bütününün veya alt bölümlerinin niteliklerini belirleyen, örgüte karşı algılanan duygusal tepkileri gösteren, örgüt içerisindeki tüm paydaşların davranışlarını ve tutumlarını etkileyen okul iklimi genel olarak bir okulun kişiliği olarak düşünülebilir. Okul iklimi kavramının incelendiği çalışmalarda; öğrenci-öğretmen arasındaki etkileşime, okul sistemi içerisinde yer alan paydaşlar arası ilişkilere, okul ve öğrenme ortamına yönelik duygulara, okuldaki toplam çevresel kaliteye ve çalışan davranışları üzerindeki etkiye vurgu yapıldığı görülmektedir. Dolayısıyla, birçok araştırmacının okul iklimini farklı tanımlarla ifade ettiği ve okul ikliminin araştırıldığı çalışmalarda genellikle okul sistemi içerisindeki paydaşların okulu nasıl algıladıklarına ve bireylerin nasıl hissettiklerine odaklanıldığı görülmektedir (Aldridge ve

Blackstock, 2024; Hoy ve Miskel, 2010; Korkmaz, 2011; Terzi, 2018; Tomaszewski vd., 2024; Zhou, Padrón, Waxman, Baek ve Acosta, 2024).

Okul sistemi içerisinde yer alan tüm paydaşların sahip oldukları bireysel ve kültürel özelikleri, paylaştıkları inanç ve değerleri, örgüt içerisindeki sosyal ilişkileri ve okulu algılama biçimleri olmak üzere birçok etmenin okul ikliminin oluşmasında etkiye sahip olduğu araştırmacılar tarafından ifade edilmektedir (Berkowitz, Moore, Astor ve Benbenishty, 2017; Konishi vd., 2022; Rapti, 2013; Simons-Morton ve Crump, 2003). Olumlu okul ikliminin yaşandığı okullarda öğrencilerin daha yüksek düzeyde akademik başarıya sahip olduğu, öğrencilerin kendilerini daha iyi hissettikleri ve birbirleri ile çalışmaktan keyif alan öğreticilerin yer aldığı öğrenme ortamlarında öğrenci-öğrenci, öğrenci-akademik personel arasında sağlıklı iletişimin hayat bulduğu görülmektedir. Okul iklimi öğrenci ve okul sistemi içerisinde yer alan tüm paydaşların algılarını ve davranışlarını etkileyen, başta okul etkililiği olmak üzere bir okulu diğerlerinden ayırt eden, okul ile ilgili tüm paydaşları ilgilendiren bir konudur (Hoy ve Miskel, 2010; Konishi vd., 2022; Tomaszewski vd., 2024).

Okul ikliminin kavramsallaştırılmasında ve ölçülmesinde öncü çalışmalarda bulunan Halpin ve Croft (1963) geliştirdiği örgütsel iklim tanımlama anketi ile öğretmen ve yönetici davranışlarını ölçmeyi amaçlamıştır. Okul iklimi ise yalnızca öğretmen ve yöneticiler tarafından oluşturulmamaktadır. Öğrenci ve okul sistemi içerisindeki diğer bireylerinde okul ikliminin oluşmasında etkisi vardır. Bu nedenle okul iklimi araştırmacıları odak noktasına öğrenci ilişkilerini de almıştır (Comer, 2020; Tomaszewski vd., 2024; Wang ve Degol, 2016). İlköğretim ve orta öğretim düzeyinde okul iklimini ölçmeye yönelik birçok ölçek geliştirilmiştir (Atik ve Güneri, 2016; Sözer, Yılmaz ve Ayten, 2018). Kendilerine has bir atmosfere sahip olan üniversitelerde öğrenim gören üniversite öğrencilerinin okul iklimi algılarını ölçmeye yönelik ise Terzi (2015) tarafından "Üniversite öğrencilerine yönelik okul iklimi ölçeği" geliştirilmiştir. Bu çalışmada da kullanılan bu ölçekte okula bağlılık, öğrenme ortamı ve iletişim olmak üzere üç boyut yer almaktadır. Bu boyutlar aşağıda kısaca açıklanmıştır;

Okula Bağlılık: Okulun bir üyesi olmanın vermiş olduğu mutluluk olarak nitelenen okula bağlılık kavramı bilişsel, duygusal ve davranışsal birçok bileşeni bünyesinde barındırmaktadır. Okula bağlılığın akademik başarı, psikolojik iyi oluş, olumlu öğrenci öğretmen ilişkileri gibi birçok öğrenim çıktısı ile ilişkili olduğu bilinmektedir. Araştırmacılar öğrencilerin eğitimsel ve bilişsel çıktılarını anlamada önemli bir yere sahip olması nedeni ile uzun yıllardır okula bağlılık kavramına dikkat çekmektedir. Literatür incelendiğinde okula bağlılık düzeyi yüksek olan öğrencilerin, psikolojik olarak kendilerini iyi hissettikleri, yüksek motivasyon algılarına sahip oldukları ve akademik başarılarının yüksek olduğu ve devamsızlık yapma, okulu bırakma, kaygı duyma ve yalnızlık duyma oranlarının düşük olduğu görülmektedir (Allen vd., 2021; Pedler, Willis ve Nieuwoudt, 2022; Terzi, 2015).

Öğrenme Ortamı: Üniversitelerin öğrencilerine sunmuş olduğu öğrenme fırsatları olarak nitelenen öğrenme ortamı kavramı, öğrenci motivasyonu, öğrenci derse katılımı, öğrenme tatmini, öğrenci duygusal refahı ve akademik başarı ile ilişkili bir kavramdır. Bu nedenle, olumlu okul ikliminin oluşturulması için öğrenme ortamı büyük önem taşımaktadır. Güvenli ve düzenli öğrenme ortamında öğrenim gören öğrencilerin öğrenim gördükleri kurumlara yönelik olumlu algılar geliştirerek okul iklimini olumlu olarak algıladıkları söylenebilir. Öğrenme ortamı ile ilgili yapılan çalışmalar incelendiğinde, öğrenme çıktıları, öğrenci bağlılığı, öğretici kontrolü, öğrenci-öğretmen etkileşimi, öğrenme ve öğretme faaliyetlerin yaşam bulduğu yer gibi konulara vurgu yapıldığı görülmektedir (Cayubit, 2022; Guo, Yang, Zhang ve Gan, 2022; Hu, Asistido ve Villanueva, 2021; Kwong ve Davis, 2015; Terzi, 2015; Turan ve Dalkıran, 2023; Tharani, Husain ve Warwick, 2017).

İletişim: Üniversite bağlamında incelediğimizde iletişim, öğrenci-öğrenci, öğrenci-okul yönetimi ve öğrenci-akademik personel arası etkileşim ve ilişkileri nitelemektedir ve örgüt içi bilgi alışverişi ve aktarımı için önemli bir işleve sahip olan iletişim kavramının hem toplumsal

hem de bireysel gelişim açısından önemli bir yere sahip olduğu söylenebilir (Baker, 2003; Christensen ve Cornelissen, 2013; Terzi, 2015). Literatür incelendiğinde yüksek düzeyde iletişim becerisine sahip olan bireylerin, yüksek duygusal ve sosyal zekâ düzeyine sahip olduğu, akademik başarılarının ve öz-yeterlik algılarının yüksek düzeyde olduğu görülmektedir (Arslan, 2019; Bingöl ve Demir, 2011; Kahya ve Ceylan, 2017; Karabulut, 2014). Okul örgütü içerisinde yer alan tüm paydaşların etkileşimleri aracılığı ile ortaya çıkan iletişim kısaca örgüt içerisindeki bilgi alışveriş süreci olarak ifade edilebilir (Memduhoğlu ve Şeker, 2011; Sabuncuoğlu ve Gümüş, 2016). Örgütsel hayatın temelini oluşturan iletişim olmadan örgütlerin hayatta kalamayacağı ve amaçlarına ulaşamayacağı bilinmektedir dolayısıyla okul ikliminin oluşmasında iletişimin önem arz ettiği söylenebilir (Hoy ve Miskel, 2010). Buna ek olarak sağlıklı bir iletişime sahip üniversitelerin temel amaçlarına ulaşmasının daha etkin olacağı düşünülmektedir (Argon ve Köşterelioğlu, 2009; Kacur ve Atak, 2011).

Bu açıklamalar ışığında, bu araştırmada üniversite öğrencilerinin okul iklimi algılarının ne düzeyde olduğu araştırılacaktır. Öğrencilerin öğrenim gördükleri üniversiteye yönelik okul iklimi algıları ne düzeydedir? Öğrencilerin demografik özellikleri okul ikliminin açıklanmasında nasıl bir yere sahiptir? sorularına cevap aranacaktır. Buna ek olarak, öğrencilerin hangi demografik özellikleri, öğrencilerin okul iklimi algıları üzerinde artırıcı bir role sahiptir sorusu bu çalışmada cevap aranan diğer bir problemdir.

YÖNTEM

Araştırmanın Modeli

Bu araştırma ilişkisel tarama modelinde tasarlanmış betimsel bir çalışmadır. İlişkisel tarama modelleri iki ve/veya daha çok değişken arasındaki birlikte değişimin varlığını veya derecesini tespit etmeyi amaçlayan araştırma modelleridir (Karasar, 2007). Bu araştırmada, yabancı dil hazırlık sınıfında ve birinci sınıfta öğrenim gören öğrencilerin öğrenim gördükleri üniversite okul iklimine ilişkin algılarının ne düzeyde olduğunun tespit edilmesi ve söz konusu bu öğrencilerin okul iklimi algılarına etki eden çeşitli demografik değişkenlerin incelenmesi amaçlanmıştır.

Örneklem

Araştırmanın örneklemini, Tunceli il merkezinde yer alan Munzur Üniversitesinde 2023-2024 öğretim yılında öğrenim gören ve ölçüt örnekleme yöntemi (Büyüköztürk, Çakmak, Akgün, Karadeniz ve Demirel, 2010) ile belirlenmiş 327 öğrenci oluşturmaktadır. Araştırmaya sadece birinci sınıf ve yabancı dil hazırlık sınıfı öğrencileri dâhil edilmiştir. Bunun nedeni ise, literatürde üniversite öğrenimin ilk yılında olan öğrencilerin okul iklimi algılarının diğerlerinden daha yüksek olduğunu gösteren çalışmaların bulunmasıdır (Erarslan, 2018; Özdemir vd., 2020). Katılımcılara ilişkin demografik bilgiler Tablo 1'de sunulmuştur.

Tablo 1. Katılımcıların Demografik Bilgilerine İlişkin Değerler

Değişken	Grup	N	%
Cinsiyet	Kadın	226	69,10
	Erkek	101	30,90
Sınıf	Hazırlık Sınıfı	107	32,70
	1.Sınıf	220	67,30
Yaş	18	25	7,60
	19	76	23,20
	20	93	28,40
	21	64	19,60
	22	31	9,50
	23 ve üstü	38	11,70
Annenin Eğitim Düzeyi	Okuryazar değil	99	30,30
	Okuryazar	28	8,60
	İlköğretim	106	32,40
	Ortaöğretim	77	23,50
	Lisans	17	5,20
Babanın Eğitim Düzeyi	Okuryazar değil	19	5,80
	Okuryazar	21	6,40
	İlköğretim	103	31,50
	Ortaöğretim	145	44,30
	Lisans	32	9,80
	Lisansüstü	7	2,10
Ailenin Ortalama Geliri	0-9.999	30	9,20
	10.000-19.999	202	61,80
	20.000-29.999	55	16,80
	30.000-39.999	19	5,80
	40.000-49.999	12	3,70
	50.000 ve üstü	9	2,70
Kardeş Sayısı	1	10	3,10
	2	41	12,50
	3	50	15,30
	4	55	16,80
	5	49	15,00
	6 ve üstü	122	37,30
İkamet Edilen Yer	Yurt	252	77,10
	Ev	39	11,90
	Diğer	36	11,00

Tablo 1 incelendiğinde katılımcıların %30,90'ının erkek, %69,10'unun kadın olduğu görülmektedir. Katılımcıların %67.30'u yabancı dil hazırlık sınıfında, %22.70'i birinci sınıfta öğrenim görmektedir. Katılımcıların %88,3'ü 18-22 yaş aralığında iken %11,7'si 23 ve üstü yaştadır. Katılımcıların %61,80'i 19.999 TL ve altı aile ortalama gelirine sahip iken %38,20'si 20.000 TL ve üstü aile ortalama gelirine sahiptir. Buna ek olarak, katılımcıların %62,7'si 5 ve daha az kardeş sayısına sahip iken %37,3'ü 6 ve daha fazla kardeş sayısına sahiptir.

Veri Toplama Araçları

Araştırma kapsamında, veri toplama aracı olarak "Üniversite Okul İklimi Ölçeği" ve "Kişisel Bilgi Formu" kullanılmıştır. Ölçeklere ilişkin açıklamalar aşağıda sunulmuştur.

Üniversite Okul İklimi Ölçeği

Üniversite öğrencilerinin okul iklimine ilişkin algı düzeylerini belirlemek amacı ile Terzi (2015) tarafından geliştirilen 5'li likert tipindeki bu ölçek "Okula bağlılık", "Öğrenme Ortamı"

ve "İletişim" olmak üzere üç boyuttan ve on yedi maddeden oluşmaktadır. Ölçekten alınan puanların aritmetik ortalamaları 1.00 - 2.60 (Kapalı İklim), 2.61 – 3.40 (Orta Düzey İklim) ve 3.41 – 5.00 (Açık İklim) olmak üzere okul iklimini öğrenci gözünden üç türde açıklamaktadır. Terzi (2015) tarafından yapılan DFA (Doğrulayıcı Faktör Analizi) sonucunda x^2/df=2,61, RMSA .063, CFI .098, GFI .095, NFI .096, AGFI .088, NNFI .097, RFI .095, IFI .098 olarak tespit edilmiştir. Ölçeğin Cronbach's Alpha iç tutarlılık katsayı değerleri ise Terzi (2015) tarafından öğrenme ortamı boyutu için .81, iletişim boyutu için .86 ve okula bağlılık boyutu için .75 olarak tespit edilmiştir.

Üniversite okul iklimi ölçeğinin bu çalışma kapsamında kullanılabilmesi için öncelikle ölçeği geliştiren yazardan e-posta aracılığı ile izin alınmıştır ve bunu takiben bu araştırma için E.850196 sayı ve 12.01.2024 tarihli Gazi Üniversitesi Etik Komisyonu izni alınmıştır. İzin sürecinin tamamlanmasının ardından 2023-2024 akademik yılında Munzur Üniversitesinde öğrenim gören yabancı dil hazırlık sınıfı ve birinci sınıf öğrencilerine ölçek ile ilgili gerekli açıklamalar yapıldıktan sonra, gönüllü olarak araştırmaya katılmayı kabul eden 327 öğrenciye araştırmacı tarafından bizzat uygulanmıştır. Toplanan veriler araştırmacı tarafından SPSS 27.00 programına yüklenmiştir ve bu araştırma kapsamında ölçeğin kullanılabilmesi için geçerlik ve güvenirlik çalışmaları tekrar yapılmıştır. Faktör analizine başlamadan önce sırasıyla KMO ve Bartlett testleri yapılmıştır. Ölçeğin KMO değeri .44 ve Bartlett test sonucu x^2=3615,497 , df=136 p=.00 olarak tespit edilmiştir. Açımlayıcı faktör analizi sonucunda ölçeğin orijinal formu ile aynı maddeleri içeren ve eigenvalues bir üzerinde olan üç faktör altında toplandığı ve üç faktörün ölçekte açıkladığı toplam varyansın ise %61,09 olduğu tespit edilmiştir. Ölçeğin iç tutarlılığını belirlemek amacı ile Cronbach's Alpha iç tutarlılık katsayı değerleri hesaplanmıştır. Ölçeğin Cronbach's Alpha değerlerinin, okula bağlılık boyutunda .86, iletişim boyutunda .89 ve öğrenme ortamı boyutunda .89 olduğu tespit edilmiştir. Üniversite Okul İklimi Ölçeğinin yapı geçerliğini belirlemek amacı ile yapılan doğrulayıcı faktör analizi sonucunda uyum indeksi değerleri; x^2=365,23, df=116, x^2/df=3,14, RMSEA=.08, NFI=.97, CFI=.98, PGFI=.67 olarak hesaplanmıştır ve bu uyum indeksi değerleri ölçeğin bu araştırma kapsamında da geçerli olduğunu ortaya koymaktadır (Kline, 2013).

Kişisel Bilgi Formu

Katılımcılara ilişkin, cinsiyet, yaş, sınıf, babanın eğitim düzeyi, annenin eğitim düzeyi, ailenin ortalama geliri, kardeş sayısı, ikamet edilen yer gibi demografik değişkenler kişisel bilgi formu aracılığı ile elde edilmiştir.

Verilerin Analizi

Araştırma kapsamında elde edilen verilerin analizinde SPSS 27.00 ve Lisrel 8.80 programı kullanılmıştır. Veri setinin analizlere uygunluğu test etmek amacı ile veri seti öncelikle hatalı, eksik ve uç değerler bakımından incelenmiştir. Veri setinin normallik varsayımını sağladığını tespit etmek için veri seti basıklık (kurtosis) ve çarpıklık (skewness) değerleri bakımından incelenmiştir. Veri setine ait çarpıklık ve basıklık değerleri; okula bağlılık için .28 ve -.88, iletişim için -.50 ve -.57, öğrenme ortamı için -.14 ve -.75 olarak hesaplanmıştır. Verilerin basıklık ve çarpıklık değerlerinin ±2 aralığında olduğu görülmektedir ve bu hali ile verilerin normallik şartını sağladığı yani normal dağılım gösterdiği belirlenmiştir (Tabachnick, Fidell ve Ullman, 2013). Araştırma kapsamında, betimsel istatistiklerde frekans ve yüzde analizi, ikili gruplarda t-testi, çoklu gruplarda one-way-anova testi ve gruplar arası farkı tespit etmek için Tukey testi yapılmıştır. Geçerlik ve güvenirlik kapsamında AFA ve DFA analizleri uygulanmış, Cronbach's alpha katsayıları incelenmiş ve ilgili analiz sonuçları veri toplama araçları bölümünde sunulmuştur.

BULGULAR

Bu bölümde araştırma kapsamında elde edilen verilerin istatistik analizleri sonucu ulaşılan bulgular verilmiştir.

Katılımcıların üniversite okul iklimine ilişkin puan ortalamaları

Öğrencilerin üniversite okul iklimine ilişkin puan ortalamaları tablo 2'de sunulmuştur.

Tablo 2. Öğrencilerin Üniversite Okul İklimine İlişkin Puan Ortalamaları

Boyut	N	Min-Max	$\bar{X}$	Ss	İklim Türü
Okula bağlılık	327	1-5	2,88	1,06	Orta düzey iklim
İletişim	327	1-5	3,57	1,02	Açık iklim
Öğrenme ortamı	327	1-5	3,12	1,04	Orta düzey iklim

Tablo 2'de görüldüğü üzere araştırmaya katılan üniversite öğrencilerinin üniversite okul iklimine ilişkin algıları iletişim boyutu için açık iklim düzeyinde iken okula bağlılık ve öğrenme ortamı boyutu için orta düzey iklim seviyesindedir. Katılımcıların ortalama puanları incelendiğinde en düşük ortalama puanın okula bağlılık boyutunda ($\bar{X}$=2,88) ve en yüksek ortalama puanın iletişim boyutunda ($\bar{X}$=3,57) olduğu görülmektedir.

Katılımcıların üniversite okul iklimi algılarının cinsiyet değişkeni bakımından karşılaştırılması

Tablo 3'te araştırmaya katılan üniversite öğrencilerinin okul iklimi algı düzeylerinin cinsiyet değişkeni bakımından karşılaştırmak için yapılan Bağımsız Gruplar T-Testi sonuçları verilmiştir.

Tablo 3. Üniversite Öğrencilerinin Üniversite Okul İklimi Algılarının Cinsiyet Değişkeni Bakımından Karşılaştırılması

	Kadın N=226		Erkek N=101				
Boyutlar	$\bar{X}$	Ss	$\bar{X}$	Ss	t	p	η2
Okula bağlılık	2,68	1,15	3,31	.96	4,78	.00*	.07
İletişim	3,50	1,00	3,72	1,06	1,81	.70	-
Öğrenme ortamı	3,00	.97	3,39	1,13	3,00	.00*	.03

*p< .05

Tablo 3 incelendiğinde öğrencilerin okul iklimi algılarının cinsiyet değişkeni bakımından iletişim boyutunda ($t_{iletişim}$=1.81, $p_{iletişim}$=.70) anlamlı farklılık göstermediği, okula bağlılık ($t_{okula\ bağlılık}$=4.78, $p_{okula\ bağlılık}$=.00) ve öğrenme ortamı ($t_{öğrenme\ ortamı}$=3.00, $p_{öğrenme\ ortamı}$=.00) boyutunda ise cinsiyet değişkeni bakımından anlamlı farklılık gösterdiği görülmektedir. Katılımcıların okula bağlılık boyutuna ilişkin ortalama puanları incelendiğinde erkek öğrencilerin ($\bar{X}$=3,31) kadın öğrencilere ($\bar{X}$=2,68) göre daha yüksek düzeyde olumlu algıya sahip oldukları görülmektedir. Buna ek olarak, öğrenme ortamı boyutuna ilişkin katılımcıların ortalamaları incelendiğinde erkek öğrencilerin ($\bar{X}$=3,39) kadın öğrencilere göre ($\bar{X}$=3,00) daha yüksek düzeyde olumlu algıya sahip oldukları görülmektedir. Katılımcıların iletişim boyutuna ilişkin algıları ise cinsiyet değişkenine göre anlamlı farklılık göstermemektedir. Cinsiyet değişkeninin okula bağlılık ve öğrenme ortamı üzerinde ne düzeyde etkiye sahip olduğunu tespit etmek amacı ile Eta-kare değerleri hesaplanmıştır. Cinsiyet değişkeninin okula bağlılık üzerinde (.07) "orta" ve öğrenme ortamı üzerinde (.03) "küçük" etki büyüklüğüne sahip olduğu tespit edilmiştir.

Katılımcıların üniversite okul iklimi algılarının sınıf değişkeni bakımından karşılaştırılması

Tablo 4'te araştırmaya katılan üniversite öğrencilerinin okul iklimi algı düzeylerinin sınıf değişkeni bakımından karşılaştırmak için yapılan Bağımsız Gruplar T-Testi sonuçları verilmiştir.

Tablo 4. Üniversite Öğrencilerinin Üniversite Okul İklimi Algılarının Sınıf Değişkeni Bakımından Karşılaştırılması

	Hazırlık Sınıfı N=107		**Birinci Sınıf N=220**				
	$\bar{X}$	**Ss**	$\bar{X}$	**Ss**	**t**	**p**	**η2**
Okula bağlılık	2,66	.91	2,98	1,11	2,64	.00*	.02
İletişim	3,29	.97	3,70	1,02	3,49	.00*	.03
Öğrenme ortamı	2,92	.94	3,22	1,07	2,43	.01*	.01

*p< .05

Tablo 4 incelendiğinde öğrencilerin okul iklimi algılarının sınıf değişkeni bakımından, okula bağlılık ($t_{\text{okula bağlılık}}$=2.64, $p_{\text{okula bağlılık}}$=.00), iletişim ($t_{\text{iletişim}}$=3.49, $p_{\text{iletişim}}$=.00) ve öğrenme ortamı ($t_{\text{öğrenme ortamı}}$=2.43, $p_{\text{öğrenme ortamı}}$=.01) boyutunda anlamlı farklılık gösterdiği görülmektedir. Katılımcıların okula bağlılık boyutuna ilişkin ortalama puanları incelendiğinde birinci sınıfta öğrenim gören öğrencilerin ($\bar{X}$=2,98) hazırlık sınıfında öğrenim gören öğrencilere ($\bar{X}$=2,66) göre daha yüksek düzeyde olumlu algıya sahip oldukları görülmektedir. Katılımcıların iletişim boyutuna ilişkin ortalama puanları incelendiğinde birinci sınıfta öğrenim gören öğrencilerin ($\bar{X}$=3,70) hazırlık sınıfında öğrenim gören öğrencilere ($\bar{X}$=3,29) göre daha yüksek düzeyde olumlu algıya sahip oldukları görülmektedir. Benzer şekilde, birinci sınıfta öğrenim gören öğrencilerin ortalamaları ($\bar{X}$=3,22) hazırlık sınıfında öğrenim gören öğrencilere göre ($\bar{X}$=2,92) iletişim boyutunda farklılaşmaktadır. Diğer bir ifade ile birinci sınıfta öğrenim gören öğrencilerin okul iklimine ilişkin algıları hazırlık sınıfında öğrenim gören öğrencilere göre tüm boyutlarda anlamlı farklılık göstermektedir. Sınıf değişkeninin okula bağlılık, iletişim ve öğrenme ortamı üzerinde ne düzeyde etkiye sahip olduğunu tespit etmek amacı ile Eta-kare değerleri hesaplanmıştır. Cinsiyet değişkeninin okula bağlılık üzerinde (.02) "küçük", iletişim üzerinde (.03) "küçük" ve öğrenme ortamı üzerinde (.01) "küçük" etki büyüklüğüne sahip olduğu tespit edilmiştir.

Katılımcıların üniversite okul iklimine ilişkin algılarının annenin eğitim düzeyi değişkeni açısından karşılaştırılması

Tablo 5'te katılımcıların üniversite okul iklimi algılarının annenin eğitim düzeyi değişkeni bakımından karşılaştırmak için yapılan tek yönlü varyans analizi sonuçları yer almaktadır.

Tablo 5. Annenin Eğitim Düzeyi Değişkenine Göre Katılımcıların Üniversite Okul İklimi Algılarına İlişkin ANOVA Sonuçları

Boyutlar	Eğitim Düzeyi	N	$\bar{X}$	Ss	p	Anlamlılık
Okula Bağlılık	Okuryazar değil	99	2,69	.95	.07	
	Okuryazar	28	3,07	.89		
	İlköğretim	106	2,93	1,11		
	Ortaöğretim	77	2,85	1,13		
	Lisans	17	3,41	1,07		
İletişim	Okuryazar değil	99	3,44	1,03	.18	
	Okuryazar	28	3,86	.84		
	İlköğretim	106	3,53	1,02		
	Ortaöğretim	77	3,61	1,02		
	Lisans	17	3,92	1,14		
Öğrenme Ortamı	Okuryazar değil	99	2,83	1,00	.00*	(Okuryazar değil ve Lisans)
	Okuryazar	28	3,38	.92		
	İlköğretim	106	3,15	1,03		
	Ortaöğretim	77	3,25	1,06		
	Lisans	17	3,62	1,03		

*p< .05

Tablo 5 incelendiğinde öğrencilerin okul iklimine ilişkin algılarının annenin eğitim düzeyi değişkeni bakımından öğrenme ortamı boyutunda farklılık gösterdiği görülmektedir. Homojen olan grup varyansları arasındaki farklılaşmayı belirlemek üzere yapılan Tukey testi sonucu lisans mezunu olan ve okuryazar olmayan grup arasında anlamlı farklılık tespit edilmiştir. Okuryazar olmayan grubun ortalaması ($\bar{X}$=2,83) iken lisans mezunu olan grubun ortalaması ($\bar{X}$=3,62) seviyesindedir. Buna göre, katılımcıların anne eğitim düzeyi arttıkça öğrenme ortamına ilişkinin algılarının da arttığı söylenebilir.

Katılımcıların üniversite okul iklimine ilişkin algılarının babanın eğitim düzeyi değişkeni açısından karşılaştırılması

Tablo 6'da katılımcıların üniversite okul iklimi algılarının babanın eğitim düzeyi değişkeni bakımından karşılaştırmak için yapılan One Way Anova test sonuçları yer almaktadır.

Tablo 6. Babanın Eğitim Düzeyi Değişkenine Göre Katılımcıların Üniversite Okul İklimi Algılarına İlişkin ANOVA Sonuçları

Boyutlar	Eğitim Düzeyi	N	$\bar{X}$	Ss	p	Anlamlılık
Okula Bağlılık	Okuryazar değil	19	2,74	.83	.25	
	Okuryazar	21	2,58	.74		
	İlköğretim	103	2,93	1,10		
	Ortaöğretim	145	2,86	1,06		
	Lisans	32	2,89	1,17		
	Lisansüstü	7	3,71	1,07		
İletişim	Okuryazar değil	19	3,36	.80	.24	
	Okuryazar	21	3,50	.99		
	İlköğretim	103	3,47	1,10		
	Ortaöğretim	145	3,64	.97		
	Lisans	32	3,55	1,09		
	Lisansüstü	7	4,35	.99		
Öğrenme Ortamı	Okuryazar değil	19	2,97	.93	.03*	(Okuryazar ve Lisansüstü)
	Okuryazar	21	2,81	.90		
	İlköğretim	103	2,98	1,11		
	Ortaöğretim	145	3,20	1,01		
	Lisans	32	3,25	.99		
	Lisansüstü	7	4,11	.92		

*p< .05

Tablo 6 incelendiğinde katılımcıların okul iklim algılarının babanın eğitim düzeyi değişkeni bakımından yalnızca öğrenme ortamı boyutunda farklılık gösterdiği görülmektedir. Homojen olan grup varyansları arasındaki farklılaşmayı belirlemek üzere yapılan Tukey testi sonucu lisansüstü mezunu grup ve okuryazar grup arasında anlamlı farklılık tespit edilmiştir. Grup ortalamalarına bakıldığında okuryazar grubun ortalaması ($\bar{X}$=2,81) iken lisansüstü mezunu olan grubun ortalaması ($\bar{X}$=4,11) seviyesindedir. Buna göre, katılımcıların babasının eğitim düzeyi arttıkça öğrenme ortamına yönelik algılarının da arttığı söylenebilir.

Katılımcıların üniversite okul iklimine ilişkin algılarının ailenin ortalama gelir düzeyi değişkeni açısından karşılaştırılması

Tablo 7'de araştırmaya katılan üniversite öğrencilerinin üniversite okul iklimine ilişkin algılarının ailenin ortalama gelir düzeyi değişkeni açısından karşılaştırılması için yapılan One Way Anova test sonuçları yer almaktadır.

Tablo 7. Aile Ortalama Gelir Düzeyi Değişkenine Göre Katılımcıların Üniversite Okul İklimi Algılarına İlişkin ANOVA Testi Sonuçları

Boyutlar	Aylık Ort. Gelir	N	$\bar{X}$	Ss	p	Anlamlılık
Okula Bağlılık	0-9.999	30	2,96	1,11	.57	
	10.000-19.999	202	2,81	1,06		
	20.000-29.999	55	3,11	1,03		
	30.000-39.999	19	2,82	.95		
	40.000-49.999	12	2,78	.99		
	50.000 ve üstü	9	3,00	1,41		
İletişim	0-9.999	30	3,47	.97	.10	
	10.000-19.999	202	3,47	1,04		
	20.000-29.999	55	3,87	.89		
	30.000-39.999	19	3,55	1,09		
	40.000-49.999	12	4,02	.66		
	50.000 ve üstü	9	3,61	1,41		
Öğrenme Ortamı	0-9.999	30	2,90	1,06	.22	
	10.000-19.999	202	3,05	1,07		
	20.000-29.999	55	3,39	.92		
	30.000-39.999	19	3,26	1,00		
	40.000-49.999	12	3,37	.68		
	50.000 ve üstü	9	2,99	1,21		

*p< .05

Tablo 7 incelendiğinde katılımcıların okul iklimine ilişkin algılarının ailenin ortalama gelir seviyesi bakımından anlamlı farklılık göstermediği görülmektedir.

Katılımcıların üniversite okul iklimine ilişkin algılarının yaş değişkeni açısından karşılaştırılması

Tablo 8'de araştırmaya katılan üniversite öğrencilerinin üniversite okul iklimine ilişkin algılarının yaş değişkeni bakımından karşılaştırılması için yapılan One Way Anova test sonuçları yer almaktadır.

Tablo 8. Yaş Değişkenine Göre Katılımcıların Üniversite Okul İklimi Algılarına İlişkin ANOVA Sonuçları

Boyutlar	Yaş	N	$\bar{X}$	Ss	p	Anlamlılık
Okula Bağlılık	18	25	2,67	.97	.39	
	19	76	2,83	1,09		
	20	93	2,93	1,06		
	21	64	3,07	1,11		
	22	31	2,63	1,04		
	23 ve üstü	38	2,85	.95		
İletişim	18	25	3,66	1,14	.37	
	19	76	3,66	.94		
	20	93	3,38	1,10		
	21	64	3,71	.90		
	22	31	3,50	1,06		
	23 ve üstü	38	3,61	1,04		
Öğrenme Ortamı	18	25	3,40	1,05	.40	
	19	76	3,10	1,04		
	20	93	3,06	1,08		
	21	64	3,27	1,01		
	22	31	3,06	1,07		
	23 ve üstü	38	2,91	.95		

*p< .05

Tablo 8 incelendiğinde katılımcıların okul iklimi algılarının yaş değişkenine göre anlamlı farklılık göstermediği görülmektedir.

Katılımcıların üniversite okul iklimine ilişkin algılarının kardeş sayısı değişkeni açısından karşılaştırılması

Tablo 9'da araştırmaya katılan üniversite öğrencilerinin üniversite okul iklimi algılarının kardeş sayısı değişkeni bakımından karşılaştırmak için yapılan One Way Anova test sonuçları yer almaktadır.

Tablo 9. Kardeş Sayısı Değişkenine Göre Katılımcıların Üniversite Okul İklimi Algılarına İlişkin ANOVA Testi Sonuçları

Boyutlar	Kardeş Sayısı	N	$\bar{X}$	Ss	p	Anlamlılık
Okula Bağlılık	1	10	2,60	.97	.20	
	2	41	3,21	1,15		
	3	50	2,88	1,07		
	4	55	2,87	1,01		
	5	49	2,98	1,11		
	6 ve üstü	122	2,75	1,01		
İletişim	1	10	3,86	.99	.33	
	2	41	3,78	1,05		
	3	50	3,56	1,14		
	4	55	3,60	.95		
	5	49	3,67	.90		
	6 ve üstü	122	3,42	1,03		
Öğrenme Ortamı	1	10	3,33	.97	.04*	2 – 6 ve üstü
	2	41	3,46	1,10		
	3	50	3,15	1,04		
	4	55	3,06	.96		
	5	49	3,32	1,03		
	6 ve üstü	122	2,92	1,03		

*p< .05

Tablo 9 incelendiğinde katılımcıların okul iklimi algılarının kardeş sayısı değişkeni bakımından öğrenme ortamı boyutunda anlamlı farklılık gösterdiği görülmektedir. Homojen olan grup varyansları arasındaki farklılaşmayı belirlemek üzere yapılan Tukey testi sonucu 2 ile 6 ve üstü kardeş sayısına sahip olan gruplar arasında anlamlı farklılık saptanmıştır. Grup ortalamalarına bakıldığında 2 kardeşe sahip olan grubun ortalaması ($\bar{X}$=3,46) iken 6 ve daha fazla kardeşe sahip olan grubun ortalaması ($\bar{X}$=2,92) seviyesindedir. Buna göre, katılımcıların kardeş sayısı azaldıkça öğrenme ortamına ilişkin algılarının arttığı söylenebilir.

Katılımcıların üniversite okul iklimine ilişkin algılarının ikamet edilen yer değişkeni açısından karşılaştırılması

Tablo 10'da katılımcıların üniversite okul iklimine yönelik algılarının ikamet edilen yer değişkeni bakımından karşılaştırmak için yapılan One Way Anova test sonuçları yer almaktadır.

Tablo 10. İkamet Edilen Yer Değişkenine Göre Katılımcıların Üniversite Okul İklimi Algılarına İlişkin ANOVA Testi Sonuçları

Boyutlar	İkamet Edilen Yer	N	$\bar{X}$	Ss	p	Anlamlılık
Okula Bağlılık	Yurt	252	2,91	1,06	.31	
	Ev	39	2,90	.99		
	Diğer	36	2,62	1,11		
İletişim	Yurt	252	3,50	1,04	.02*	Yurt ve Ev
	Ev	39	3,98	.83		
	Diğer	36	3,64	1,00		
Öğrenim Ortamı	Yurt	252	3,11	1,02	.056	
	Ev	39	3,41	1,01		
	Diğer	36	2,84	1,11		

*p< .05

Tablo 10 incelendiğinde katılımcıların okul iklimi algılarının ikamet edilen yer değişkeni bakımından sadece iletişim boyutunda anlamlı farklılık gösterdiği görülmektedir. Homojen olan grup varyansları arasındaki farklılaşmayı belirlemek üzere yapılan Tukey testi sonucu yurt ve ev grupları arasında anlamlı farklılık saptanmıştır. Grup ortalamalarına bakıldığında evde ikamet eden grubun ortalaması ($\bar{X}$=3,98) iken yurtta ikamet eden grubun ortalaması ($\bar{X}$=3,50) seviyesindedir. Buna göre, yurtta ikamet eden öğrencilerin evde ikamet eden öğrencilere göre daha yüksek düzeyde iletişim algısına sahip olduğu ifade edilebilir.

Üniversite okul iklimi ile alt boyutları arasındaki korelasyon düzeyi

Tablo 11'de üniversite okul iklimi ile alt boyutları arasındaki korelasyon düzeyini belirlemek için yapılan Pearson Korelasyon test sonuçları yer almaktadır.

Tablo 11. Üniversite Okul İklimi ile Alt Boyutları Arasındaki Korelasyon Testi Sonuçları

Değişkenler	Üniversite Okul İklimi	İletişim	Öğrenme Ortamı	Okula Bağlılık
Üniversite Okul İklimi	1	.89**	.92**	.85**
İletişim		1	.74**	.61**
Öğrenme Ortamı			1	.72**
Okula Bağlılık				1

Üniversite okul iklimi iletişim, öğrenme ortamı ve okula bağlılık alt boyutlarından oluşmakta olup, üniversite okul iklimi ve alt boyutları arasındaki ilişki pearson korelasyon analizi ile belirlenmiştir. Tablo 11'de görüleceği üzere üniversite okul iklimi ile iletişim($r=0.89$; $p<0.01$), öğrenme ortamı ($r=0.92$; $p<0.01$) ve okula bağlılık ($r=0.85$; $p<0.01$) boyutları arasında pozitif ve yüksek düzeyde (güçlü) korelasyon saptanmıştır. Buna ek olarak, alt boyutlar arasında ise okula bağlılık ve iletişim arasında ($r=0.61$; $p<0.01$) orta düzeyde korelasyon saptanmıştır.

SONUÇLAR ve TARTIŞMA

Araştırmada, katılımcıların öğrenim gördükleri üniversite okul iklimine ilişkin algılarının ne düzeyde olduğunun tespit edilmesi ve katılımcıların okul iklimi algılarına etki eden çeşitli demografik değişkenlerin incelenmesi amaçlanmıştır. Araştırma sonucunda, öğrencilerin iletişim boyutuna ilişkin algılarının yüksek düzeyde olduğu tespit edilmiştir. Araştırmaya katılan öğrenciler, öğretim elemanlarının her zaman iletişime açık olduğunu, bir problem yaşadıklarında öğretim elemanlarının kendilerini dinlemek için gönüllü davranışlar sergilediğini ve üniversite yönetiminin öğrenci görüşlerine değer verdiğini ifade etmektedir. Bu sonuç ise istendik bir durumdur çünkü sağlıklı iletişimin hayat bulduğu kurumlarda olumlu okul ikliminin hüküm sürdüğü ifade edilebilir. Buna ek olarak, olumlu okul iklimine sahip okullarda öğrenci başarısının yüksek olduğu, öğrencilerin psikolojik olarak kendilerini daha iyi hissettikleri ve gerek öğrenciler gerekse diğer personel ile sosyal ilişkilerin olumlu olduğu bilinmektedir (Berkowitz vd., 2017; Konishi vd., 2022; Long vd., 2021). Bu araştırma kapsamında öğrencilerin okul iklimi algıları iletişim boyunda açık iklim olarak tespit edilmiştir fakat literatürde bunun zıttını gösteren çalışmalarda bulunmaktadır. Çelik, Terzi ve Gültekin (2017) yapmış olduğu çalışmada üniversite öğrencilerinin okul iklimine yönelik algılarının iletişim boyutunda orta düzeyde olduğunu tespit etmiştir. Akpulat vd. (2022) ise üniversite öğrencilerinin okul iklimi algılarını iletişim boyunda kapalı iklim olarak tespit etmiştir. Bu araştırmanın sonuçlarının literatürdeki diğer araştırmalardan farklılaşmasının nedeni ise Munzur Üniversitesinin daha genç, yeni bir üniversite olmasından dolayı öğrenci sayısının az olması ve bundan dolayı öğrenci başına düşen öğretim elemanı sayısının fazla olmasından kaynaklanıyor olabilir. Diğer bir ifade ile Munzur Üniversitesi yeni kurulmuş bir üniversite olduğu için öğrencilerin öğretim elemanlarına daha kolay ulaşabilmekte oldukları ve bu durumunda öğrencilerin okul iklimi algılarına olumlu etki ettiği söylenebilir.

Bu araştırma sonucunda, öğrencilerin okula bağlılık boyutuna ait iklim algılarının ise orta düzeyde olduğu bulunmuştur. Yani, öğrencilerin öğrenim gördükleri üniversiteye yönelik bağlılıklarının orta düzeyde olduğu söylenebilir. Diğer bir ifade ile araştırmaya katılan öğrencilerin kısmen kendilerini okulun bir parçası olarak görmekte oldukları ve kısmen okula aidiyet hissettikleri söylenebilir. Araştırmanın bu sonucu literatürdeki diğer çalışmalarla benzerlik göstermektedir. Çelik vd. (2017) yapmış olduğu araştırmada da üniversite öğrencilerinin okula bağlılık boyutuna ait iklim algılarının orta düzeyde olduğu görülmektedir. Yine bu araştırma kapsamında, öğrencilerin öğrenme ortamı boyutuna ait iklim algılarının orta düzeyde olduğu bulunmuştur. Yani, öğrencilerin öğrenme ortamını kısmen olumlu olarak algılamakta oldukları söylenebilir. Benzer şekilde, Çelik ve arkadaşları da (2017) araştırma sonucunda üniversite öğrencilerinin öğrenme ortamına ilişkin algılarının orta düzeyde olduğunu bulmuştur. Çalışmanın bu sonucunun diğer çalışmalarla benzerlik göstermesinin nedeni ise her iki üniversitenin de kamu üniversitesi olması nedeni ile öğrencilerine benzer nitelikte öğrenme imkânları sunmalarından kaynaklanıyor olabilir.

Katılımcıların üniversite okul iklimi algıları cinsiyet değişkeni bakımından anlamlı farklılık göstermektedir. Hem okula bağlılık hem de öğrenme ortamı boyutunda erkek öğrencilerin okul iklimi algıları daha yüksektir. Bunun nedeni ise kadın öğrencilere kıyasla erkek öğrencilerin karşılaştıkları sorunlara daha yüksek düzeyde tolerans göstermelerinden kaynaklanıyor olabilir. Kadın öğrencilerin okul iklimi algı düzeylerinin erkek öğrencilere nazaran daha düşük düzeyde olması ise dikkat çekici bir sonuçtur. Literatür incelendiğinde kadın öğrencilerin okul iklimine yönelik algı düzeylerinin erkek öğrencilere nazaran daha yüksek düzeyde olduğu araştırmacılar (Jia vd., 2009; Sökmez vd., 2020) tarafından ifade edilmektedir.

Katılımcıların üniversite okul iklimi algıları sınıf değişkeni bakımından anlamlı farklılık göstermektedir. Birinci sınıfta öğrenim öğrencilerin okul iklimi algılarının yabancı dil hazırlık sınıfında öğrenim gören öğrencilere kıyasla daha yüksek düzeyde olduğu bulunmuştur. Her iki grupta üniversite öğreniminin ilk yılında olmasına rağmen okul iklimi algılarının farklılaşması

ise dikkat çekmektedir. Yabancı dil hazırlık sınıflarında öğrenim gören öğrenciler, dil öğretiminde uygulanan ve öğrencinin dil seviyesi doğrultusunda aynı öğrenim dönemi içerisinde birden çok kez sınıf değiştirmesine sebep olan kur sistemine tabi oldukları için uyum sağlama konusunda sorunlar yaşıyor olabilirler. Bu nedenle yabancı dil hazırlık sınıfında öğrenim gören öğrencilerin okul iklimi algılarının birinci sınıfta öğrenim gören öğrencilere göre farklılaştığı ifade edilebilir. Literatür incelendiğinde ise yabancı dil hazırlık sınıfı ve birinci sınıf öğrencilerinin okul iklimi algılarını üniversite düzeyinde karşılaştıran herhangi bir çalışmaya rastlanmamıştır.

Katılımcıların üniversite okul iklimine ilişkin algıları annenin eğitim düzeyi değişkenine göre sadece öğrenme ortamı boyutunda anlamlı farklılık göstermektedir. Annesi okuryazar olmayan öğrenciler ve annesi lisans mezunu olan öğrenciler arasında anlamlı farklılık bulunmuştur. Diğer bir ifade ile annesi lisans mezunu olan öğrenciler daha yüksek olumlu okul iklimi algısına sahiptir. Bu ise beklendik bir sonuçtur çünkü anne eğitim seviyesi yükseldikçe öğrencinin akademik başarısının arttığı (Aslan, 2017; Shaheen ve Awan, 2020) ve öğrencinin akademik başarısının artması durumunda öğrenim gördüğü üniversiteye ve öğrenme ortamına yönelik olumlu duygu ve düşüncelerinin de artmasının ise beklenen bir durum olduğu ifade edilebilir.

Katılımcıların üniversite okul iklimine ilişkin algıları babanın eğitim düzeyi değişkenine göre sadece öğrenme ortamı boyutunda anlamlı farklılık göstermektedir. Babası okuryazar olan öğrenciler ve babası lisansüstü mezunu olan öğrenciler arasında anlamlı farklılık tespit edilmiştir. Diğer bir ifade ile babasının eğitim düzeyi lisansüstü olan öğrenciler öğrenim gördükleri üniversitenin öğrenci merkezli bir eğitim anlayışına sahip olduğunu, öğrenme için yeterli fiziksel donanımın bulunduğunu ve öğrenmek istemeleri durumunda öğrenim gördükleri üniversitede mutlaka bir fırsat bulduklarını ifade etmektedirler. Bu sonuç ise beklendik bir durumdur çünkü babanın eğitim düzeyi ile akademik başarı arasında anlamlı ilişkinin varlığı (Chung, Phillips, Jensen ve Lanier, 2020) araştırmacılar tarafından ifade edilmektedir. Akademik başarısı yüksek olan öğrencilerin olumlu okul iklimine yönelik algılarının yüksek olmasının ise beklenen bir durum olduğu söylenebilir.

Katılımcıların okul iklimine ilişkin algıları ailenin ortalama gelir seviyesi bakımından anlamlı farklılık göstermemektedir. Bunun nedeninin ise katılımcıların büyük bir çoğunluğunun alt düzey gelir grubunda toplanmasından kaynaklanıyor olabileceği söylenebilir. Literatür incelendiğinde ise ailenin ortalama gelir düzeyi ve okul iklimi algısı arasında anlamlı ilişki (Doğan, 2012; Hopson ve Lee, 2011; Küsmez ve Yeşilkayalı, 2020) olduğunu belirten araştırmalar mevcuttur.

Katılımcıların okul iklimine ilişkin algıları kardeş sayısı değişkenine göre yalnızca öğrenme ortamı boyutunda anlamlı farklılık göstermektedir. İki kardeşe sahip olan öğrenciler ile altı ve daha fazla kardeşe sahip olan öğrenciler arasında anlamlı farklılık tespit edilmiştir. Yani, iki kardeşe sahip olan öğrenciler altı ve daha çok kardeş sayısına sahip olan öğrencilere kıyasla daha yüksek düzeyde olumlu okul iklimi algısına sahiptir. Diğer bir ifade ile sahip olunan kardeş sayısı azaldıkça okul iklimine yönelik algının yükseldiği ifade edilebilir. Aile içindeki birey sayısı arttıkça ailenin geliri bu doğrultuda bireyler arasında bölünmektedir. Bu nedenle kardeş sayısı arttıkça kişi başına düşen gelirinde düştüğü düşünüldüğünde, az sayıda kardeşe sahip olan öğrencilerin fiziksel imkânlara erişiminin daha fazla olması sebebiyle öğrenme ortamlarını daha olumlu algıladıkları ifade edilebilir.

Katılımcıların okul iklimine ilişkin algıları ikamet edilen yer değişkenine göre yalnızca iletişim boyutunda anlamlı farklılık göstermektedir. Yurtta ikamet eden öğrenciler ile evde ikamet eden öğrenciler arasında anlamlı farlılık tespit edilmiştir. Yani, yurtta kalan öğrencilerin okul iklimi algıları iletişim boyutuna farklılaşmaktadır. Diğer bir ifade ile yurtta ikamet eden öğrencilerin okul iklimine yönelik algılarının iletişim boyutunda arttığı söylenebilir. Bunun ise beklendik bir durum olduğu ifade edilebilir çünkü yurtlarda bir arada yaşayan öğrenciler evde kalan öğrencilere göre daha fazla birlikte zaman geçirmektedirler ve bu etkileşim dolayısıyla öğrencilerin iletişim konusunda daha olumlu tutumlar geliştirmiş olabilecekleri söylenebilir.

Araştırma sonuçları üniversite okul iklimi ile öğrenme ortamı, iletişim ve okula bağlılık boyutları arasında pozitif ve yüksek düzeyde korelasyon olduğunu göstermektedir. Diğer bir ifade ile öğrencilerin okul iklimi algılarının oluşmasında başta öğrenme ortamı olmak üzere sırasıyla iletişim ve okula bağlılığın büyük role sahip olduğu ifade edilebilir. Öğrenme ortamının olumlu olarak algılanması öğrenci ve akademik personel arasında daha rahat, daha güçlü iletişim kurulmasını sağladığı için öğrenme ortamını olumlu olarak algılayan öğrencilerin iletişim algılarının olumlu yönde arttığı ifade edilebilir. Öğrenciler ve akademik personel arasında kurulan iletişimin güçlü olması durumunda ise güçlü öğrenme ortamlarının varlığından söz edilebilir. Benzer şekilde öğrenim gördükleri ortamları olumlu algılayan öğrencilerin okula bağlılıklarının arttığı söylenebilir. Dolayısıyla üniversite öğrencilerinin okul iklimi algılarının oluşmasında öğrenme ortamı, iletişim ve okula bağlılığın büyük rol oynadığı ifade edilebilir.

Sonuç olarak, yabancı dil hazırlık sınıfında ve birinci sınıfta öğrenim gören öğrencilerin, öğrenim görmüş oldukları üniversiteye yönelik okul iklimi algılarının araştırıldığı bu araştırma sonucunda katılımcıların üniversite okul iklimi algılarının iletişim boyutunda yüksek düzeyde iken öğrenme ortamı ile okula bağlılık boyutlarında ise orta düzeyde olduğu belirlenmiştir. Buna ek olarak, katılımcıların üniversite okul iklimine ilişkin algılarının cinsiyet, sınıf, annenin eğitim düzeyi, babanın eğitim düzeyi, sahip olunan kardeş sayısı ve ikamet edilen yer değişkenlerine göre anlamlı farklılık gösterdiği bulunmuştur. Araştırma sonucunda elde edilen bilgiler doğrultusunda araştırmacılara ve yöneticilere yönelik öneriler aşağıda sunulmuştur.

Araştırma sonuçları, öğrencilerin üniversite okul iklimine ilişkin algılarının okula bağlılık ve öğrenme ortamı boyutlarında orta düzeyde olduğunu göstermektedir. Öğrencilerin okula bağlılık yani aidiyetlerini arttırmak için üniversite yönetimleri tarafından öğrencilerin aidiyetlerine etki eden faktörlerin tespit edilmesi adına çalışmalar yapılabilir. Bu çalışmalar sonucunda elde edilen bilgiler doğrultusunda öğrencilere rehberlik hizmeti sunulabilir. Öğrencilerin öğrenim gördükleri öğrenme ortamına yönelik algılarının arttırılması için ise öğrenme ortamına yönelik öğrenci algılarını düşüren faktörlerin tespit edilmesi adına öğrencilerin bağlı oldukları bölüm ya da program yöneticileri tarafından daha kapsamlı çalışmalar yapılabilir. Annenin eğitim düzeyi, babanın eğitim düzeyi ve sahip olunan kardeş sayısı değişkenleri ile öğrencinin öğrenme ortamına ilişkin algıları arasında ilişki olduğu için, annesinin ve babasının eğitim düzeyi düşük olan öğrencilere ve kardeş sayısı çok olan öğrencilere yönelik üniversite yönetimleri tarafından söz konusu öğrencilerin öğrenme ortamına ilişkin olumlu algılarını arttırmak için rehberlik hizmetleri sunulabilir.

Araştırma sonuçları, aynı üniversitenin öğrencisi olunmasına rağmen farklı birimlerde öğrenim gören öğrencilerin okul iklimi algılarının farklılaştığını göstermektedir. Bunun altında yatan nedenleri tespit etmek için diğer araştırmacılar tarafından farklı evren ve örneklemde çalışmalar yapılabilir. Bu araştırmada hazırlık sınıfında ve birinci sınıfta öğrenim gören öğrenciler örnekleme alınmıştır. Bu örnekleme ek olarak üst sınıflarda öğrenim gören öğrencilerde yapılacak araştırmalara dâhil edilebilir. Sosyoekonomik düzeyi daha yüksek olan illerde bulunan üniversitelerde öğrenim gören öğrencilerin okul iklimi algılarına yönelik araştırmalar yapılarak üniversiteler ve iller arası karşılaştırmalar yapılabilir. Yükseköğretim düzeyinde okul iklimi araştırmaları oldukça sınırlıdır. Bu boşluğu kapatmak ve yükseköğretim kurumlarının daha nitelikli ve etkili bir eğitim sunmasını sağlamak adına farklı üniversitelerde öğrenim gören öğrencilerin okul iklimi algılarına etki eden değişkenleri tespit etmek için nitel araştırmalar yapılabilir. Bu araştırmanın sonuçları, Tunceli il merkezinde bulunan Munzur Üniversitesinde öğrenim gören öğrencilerin görüşleriyle sınırlı olduğu için tüm üniversite öğrencilerine genellenemez.

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Investigation of School Climate Perceptions of Foreign Language Preparatory Class and First Grade Students[1]

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Abstract
This study aimed to determine the level of perceptions of students studying in foreign language preparatory classes and first-year students regarding the university school climate where they study and to examine various demographic variables that affect these students' perceptions of school climate. For this purpose, a 5-point Likert-type scale was applied to 327 university students studying at Munzur University in Tunceli. In the study, "University School Climate Scale" and "Personal Information Form" were used as data collection tools. SPSS 27.00 and Lisrel 8.8 programs were used in the validity and reliability analyses of the scale. Within the scope of the research, frequency and percentage analysis, t-test in paired groups, one-way anova test in multiple groups, and Tukey test were used to determine the difference between groups. According to the research findings, it was determined that the participants' perceptions of university school climate were high in the communication dimension and moderate in the learning environment and school attachment dimensions. While the participants' perceptions of the university school climate showed significant differences according to the variables of gender, mother's education level, father's education level, number of siblings, and place of residence, it was found that there was no significant difference in terms of the family's average income and age.

Keywords: School climate, university, university students

INTRODUCTION

Universities play a major role in raising a youth that has the capacity to contribute to social development and production. It can be stated that the perceptions of students studying at universities regarding school climate can play an important role in this process. Therefore, it can be said that examining the concept of school climate is important for educators, students, and educational organizations. One of the main goals of universities is to provide high-level education. It can be stated that universities that want to provide their students with a qualified and high-level education should give importance to the concept of school climate because studies show that students studying in a positive school climate have higher academic achievement, students feel better about themselves, and their social relationships are positive. In addition, studies conducted on school climate and academic achievement, student dropout, learning environment, school commitment, and communication show that school climate has a positive and significant effect on many learning outcomes. Therefore, school climate is a subject that has attracted the attention of researchers for many years, is still being researched today, and maintains its importance. In schools with a positive school climate, learning environments are observed where relationships between administrators and teachers are constructive, teachers enjoy working with each other, and teachers aim to increase students' academic success, while in schools with a negative school climate, the exact opposite behaviors and attitudes occur. School climate is an issue that affects the behaviors and perceptions of students, teachers, and all stakeholders in the school system, distinguishes a school from others, especially school effectiveness, and concerns all stakeholders related to the school (Aldridge & Blackstock,

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2024; Dang, Nguyen & Pham, 2024; Hoy & Miskel, 2010; Konishi, Wong, Persram, Madriz & Liu, 2022; Long, Zucca & Sweeting, 2021; Tomaszewski, Xiang & Huang, 2024; Zysberg & Schwabsky, 2021).

It is thought that students who perceive that the universities they study at have a positive school climate will effectively complete the learning process as individuals who are expected to contribute to the future of the country both individually and socially by establishing healthy communication between students, and student-academic staff, developing positive perceptions about the learning environment, and feeling a sense of belonging to the school. When we consider universities as social systems where human relations come to life, it can be said that universities that want to offer their students a quality educational environment should give priority to issues such as communication, learning environment, and commitment to the school, because it is stated that these issues have an impact on university students' perceptions of school climate (Cayubit, 2022; Rusticus, Pashootan & Mah, 2023; Terzi, 2015; Zysberg & Schwabsky, 2021; Wong, Dosanjh, Jackson, Rünger & Dudovitz, 2021).

It is known that school climate, which plays an important role in the academic development and social relations of students, is a multidimensional concept and that school climate is related to many variables, especially the socioeconomic level of students (Berkowitz, 2022; Darling-Hammond & DePaoli, 2020; Eugene, 2020; Grazia & Molinari, 2021; Zysberg & Schwabsky, 2021). When the literature is examined, it is seen that studies on school climate are often conducted at the primary and secondary education level (Altuntaş, Demirdağ & Ertem, 2020; Sökmez, Çok & Avcı, 2020; Yoluk, 2020). In recent years, researchers have shifted school climate studies from primary and secondary education to higher education level (Çulcuoğlu & Şentürk, 2021; Mutlu & Çetinkaya, 2023; Özdemir, Çepni & İncedere, 2020; Sayan & Tavukçuoğlu, 2020). The common point of these studies conducted at the higher education level is to measure the level of university students' perception of school climate.

It is noteworthy that there are very few national studies on university school climate (Çulcuoğlu & Şentürk, 2021; Erarslan, 2018; Mutlu & Çetinkaya, 2023; Özdemir et al., 2020; Sayan & Tavukçuoğlu, 2020). In addition, few studies have examined the demographic variables that affect university students' perceptions of school climate (Akpulat, Üzümcü & Alyakut, 2022; Çulcuoğlu & Şentürk, 2021; Erarslan, 2018). In these studies, only gender, grade, age and department type were addressed among the demographic variables that affect the school climate of university students. When the literature is examined; It is stated by researchers that variables such as gender, age, and family education level are among the variables that affect students' perceptions of school climate (Nishimura et al., 2020; Rudolf & Lee, 2023; Toren & Seginer, 2015). What makes this research different from other studies is that, in addition to gender, class and age variables, the mother's education level, father's education level, family average income, number of siblings and place of residence variables are examined. It is thought that this study, which differs from other studies in this respect, will contribute to the literature. In addition, the reason why this research was conducted at Munzur University is that Munzur University is a new public university established in 2008, is ranked 110th out of 190 universities in the inter-university ranking (URAP, 2024) and is conducted in Tunceli, a province that is at the bottom of the province ranking in terms of socioeconomic development level of Turkey (Sanayi Bakanlığı, 2024). It is thought that this research will benefit school climate researchers in terms of making comparisons between the socioeconomic development level and universities in future studies. Again, it is thought that this research will contribute to the field since the school climate perceptions of students studying in the foreign language preparatory class and students studying in the first grade are compared for the first time in the literature. In line with this information, this research aimed to determine the level of perception of foreign language preparatory class students and first-year students regarding the university school climate in which they study and to examine various demographic variables affecting these students' perceptions of school climate, and to seek answers to the following questions;

1- What is the level of perception of the school climate of the participants??
2- Do participants' perceptions of school climate differ according to these variables;
   a) gender
   b) class
   c) family education level
   d) family average income
   e) number of siblings
   f) age
   g) place of residence.
3- What is the correlation level between the participants' perceptions of school climate and its sub-dimensions??

School Climate

School climate, which determines the qualities of an organization as a whole or its subsections, shows the perceived emotional reactions towards the organization, and affects the behaviors and attitudes of all stakeholders within the organization, can generally be considered as the personality of a school. In studies examining the concept of school climate, it is seen that emphasis is placed on the interaction between students and teachers, the relationships between stakeholders within the school system, the emotions towards the school and learning environment, the total environmental quality in the school, and the effect on employee behavior. Therefore, it is seen that many researchers express school climate with different definitions, and in studies investigating school climate, the focus is generally on how stakeholders within the school system perceive the school and how individuals feel (Aldridge & Blackstock, 2024; Hoy & Miskel, 2010; Korkmaz, 2011; Terzi, 2018; Tomaszewski et al., 2024; Zhou, Padrón, Waxman, Baek & Acosta, 2024).

Researchers state that many factors, including the individual and cultural characteristics of all stakeholders within the school system, their shared beliefs and values, social relations within the organization, and the way they perceive the school, have an impact on the formation of the school climate (Berkowitz, Moore, Astor & Benbenishty, 2017; Konishi et al., 2022; Rapti, 2013; Simons-Morton & Crump, 2003). It is observed that in schools where a positive school climate is experienced, students have higher levels of academic success, students feel better about themselves, and healthy communication between students and student-academic staff occurs in learning environments where teachers enjoy working with each other. School climate is an issue that affects the perceptions and behaviors of students and all stakeholders within the school system, distinguishes a school from others, especially school effectiveness, and concerns all stakeholders related to the school (Hoy & Miskel, 2010; Konishi et al., 2022; Tomaszewski et al., 2024).

Halpin and Croft (1963), who made pioneering studies in the conceptualization and measurement of school climate, aimed to measure the behaviors of teachers and administrators with the Organizational Climate Definition Questionnaire they developed. School climate is not only created by teachers and administrators. Students and other individuals within the school system also have an impact on the formation of school climate. For this reason, school climate researchers have also focused on student relations (Comer, 2020; Tomaszewski et al., 2024; Wang & Degol, 2016). Lots of questionnaire have been developed to measure school climate at the primary and secondary education level (Atik & Güneri, 2016; Sözer, Yılmaz & Ayten, 2018). The “School climate scale for university students” was developed by Terzi (2015) in order to measure the school climate perceptions of university students studying at universities with their own unique atmosphere. This scale, which was also used in this study, has three dimensions:

commitment to school, learning environment, and communication. These dimensions are briefly explained below;

School Attachment: The concept of school attachment, which is defined as the happiness of being a member of the school, includes many cognitive, emotional and behavioral components. It is known that school attachment is associated with many learning outcomes such as academic success, psychological well-being, and positive student-teacher relationships. Researchers have been drawing attention to the concept of school attachment for many years because it has an important place in understanding the educational and cognitive outcomes of students. When the literature is examined, it is seen that students with a high level of school attachment feel psychologically good, have high perceptions of motivation, have high academic success, and have low rates of absenteeism, dropping out of school, anxiety and loneliness (Allen et al., 2021; Pedler, Willis & Nieuwoudt, 2022; Terzi, 2015).

Learning Environment: The concept of learning environment, which is defined as the learning opportunities that universities offer to their students, is a concept associated with student motivation, student participation in class, learning satisfaction, students' emotional well-being and academic success. For this reason, the learning environment is of great importance for the creation of a positive school climate. It can be said that students who study in a safe and orderly learning environment develop positive perceptions towards the institutions they study and perceive the school climate positively. When the studies on the learning environment are examined, it is seen that emphasis is placed on issues such as learning outcomes, student engagement, instructor control, student-teacher interaction, and the place where learning and teaching activities occur (Cayubit, 2022; Guo, Yang, Zhang & Gan, 2022; Hu, Asistido & Villanueva, 2021; Kwong & Davis, 2015; Terzi, 2015; Turan & Dalkıran, 2023; Tharani, Husain & Warwick, 2017).

Communication: When examined in the context of the university, communication characterizes the interactions and relationships between students-students, students-school administration and students-academic staff, and it can be said that the concept of communication, which has an important function for the exchange and transfer of information within the organization, has an important place in terms of both social and individual development (Baker, 2003; Christensen and Cornelissen, 2013; Terzi, 2015). When the literature is examined, it is seen that individuals with high levels of communication skills have high levels of emotional and social intelligence, and their academic success and self-efficacy perceptions are high (Arslan, 2019; Bingöl & Demir, 2011; Kahya & Ceylan, 2017; Karabulut, 2014). Communication, which occurs through the interactions of all stakeholders within the school organization, can be briefly expressed as the information exchange process within the organization (Memduhoğlu & Şeker, 2011; Sabuncuoğlu & Gümüş, 2016). It is known that organizations cannot survive and achieve their goals without communication, which forms the basis of organizational life, and therefore it can be said that communication is important in the formation of school climate (Hoy & Miskel, 2010). In addition, it is thought that universities with healthy communication will be more effective in achieving their basic goals (Argon & Köşterelioğlu, 2009; Kacur & Atak, 2011).

This study will investigate the level of university students' perceptions of school climate. What is the level of students' perceptions of school climate towards the university they study at? What place do students' demographic characteristics play in explaining school climate? The questions will be answered. In addition, the question of which demographic characteristics of students have an increasing role on students' perceptions of school climate is another problem that is sought to be answered in this study.

METHOD

Research Model

This research is a descriptive study designed in the relational screening model. Relational screening models are research models that aim to determine the existence or degree of co-variation between two and/or more variables (Karasar, 2007). In this research, it was aimed to

determine the level of perceptions of students studying in foreign language preparatory class and first year regarding the university school climate where they study and to examine various demographic variables that affect the perceptions of these students about the school climate.

Study Group

The sample of the study consists of 327 students studying at Munzur University in the city center of Tunceli in the 2023-2024 academic year and determined using the criterion sampling method (Büyüköztürk, Çakmak, Akgün, Karadeniz & Demirel, 2010). Only first-year and foreign language preparatory class students were included in the study. The reason for this is that there are studies in the literature showing that students in the first year of university education have higher perceptions of school climate than others (Erarslan, 2018; Özdemir et al., 2020). Demographic information about the participants is presented in Table 1.

Table 1. Demographic information of the participants

Variable	Group	N	%
Gender	Woman	226	69,10
	Man	101	30,90
Grade	Preparatory Class	107	32,70
	1st Class	220	67,30
Age	18	25	7,60
	19	76	23,20
	20	93	28,40
	21	64	19,60
	22	31	9,50
	23 and more	38	11,70
Mother's Education Level	Illiterate	99	30,30
	Literate	28	8,60
	Primary Education	106	32,40
	Secondary Education	77	23,50
	Undergraduate	17	5,20
Father's Education Level	Illiterate	19	5,80
	Literate	21	6,40
	Primary Education	103	31,50
	Secondary Education	145	44,30
	Undergraduate	32	9,80
	Postgraduate	7	2,10
Family Average Income	0-9.999 TL	30	9,20
	10.000-19.999 TL	202	61,80
	20.000-29.999 TL	55	16,80
	30.000-39.999 TL	19	5,80
	40.000-49.999 TL	12	3,70
	50.000 TL and more	9	2,70
Number of Siblings	1	10	3,10
	2	41	12,50
	3	50	15,30
	4	55	16,80
	5	49	15,00
	6 and more	122	37,30
Place of Residence	Dormitory	252	77,10
	Home	39	11,90
	Other	36	11,00

Table 1 shows that 30.90% of women are male and 69.10% are female. 67.30% of the participants are in a foreign language preparatory class and 22.70% are in the first grade. 88.3% of the participants are between the ages of 18-22, while 11.7% are 23 and over. 61.80% of the participants have an average family income of 19,999 TL and below, while 38.20% have an

average family income of 20,000 TL and above. In addition, 62.7% have 5 or fewer siblings, while 37.3% have 6 or more siblings.

Data Collection Tools

Within the scope of the research, the "University School Climate Scale" and the "Personal Information Form" were used as data collection tools. Explanations regarding the scales are presented below.

University School Climate Scale

University School Climate Scale is a 5-point Likert-type scale, developed by Terzi (2015) to determine the perception levels of university students regarding school climate. The scale consists of three dimensions, “School Commitment”, “Learning Environment” and “Communication”, and seventeen items. The arithmetic means of the scores obtained from the scale explain the school climate from the perspective of the students in three types, 1.00 - 2.60 (Closed School Climate), 2.61 - 3.40 (Medium School Climate) and 3.41 - 5.00 (Open School Climate). As a result of the CFA (Confirmatory Factor Analysis) conducted by Terzi (2015), x2/df=2.61, RMSA .063, CFI .098, GFI .095, NFI .096, AGFI .088, NNFI .097, RFI .095, IFI .098 were found. Cronbach's Alpha internal consistency coefficient values of the scale were found by Terzi (2015) as .81 for the learning environment dimension, .86 for the communication dimension and .75 for the school commitment dimension.

In order to use the university school climate scale within the scope of this study, first of all, permission was obtained from the author who developed the scale via e-mail, and subsequently, permission was obtained from the Gazi University Ethics Commission for this research with the number E.850196 and dated 12.01.2024. After the permission process was completed, the necessary explanations about the scale were made to the foreign language preparatory class and first-year students studying at Munzur University in the 2023-2024 academic year, and then it was personally applied by the researcher to 327 students who agreed to participate in the research voluntarily. The collected data were uploaded to the SPSS 27.00 program by the researcher, and validity and reliability studies were re-conducted in order to use the scale within the scope of this research. Before starting the factor analysis, KMO and Bartlett tests were performed, respectively. The KMO value of the scale was .44 and the Bartlett test result was determined as x2=3615.497, df=136, p=.00. As a result of the exploratory factor analysis, it was found that the scale contained the same items as the original form and was gathered under three factors with eigenvalues over one, and the total variance explained by the three factors in the scale was 61.09%. Cronbach's Alpha internal consistency coefficient values were calculated in order to determine the internal consistency of the scale. It was found that the Cronbach's Alpha values of the scale were .86 for school commitment dimension, .89 for communication dimension, and .89 for learning environment dimension. As a result of the confirmatory factor analysis conducted in order to determine the construct validity of the University School Climate Scale, the fit index values were calculated as; x^2=365.23, df=116, x^2/df=3.14, RMSEA=.08, NFI=.97, CFI=.98, PGFI=.67, and these fit index values reveal that the scale is also valid within the scope of this research (Kline, 2013).

Personel Information Form

Demographic variables such as gender, age, class, father's education level, mother's education level, average family income, number of siblings, and place of residence were obtained from the participants through a personal information form.

Analysis of Data

SPSS 27.00 and Lisrel 8.80 programs were used in the analysis of the data obtained within the scope of the research. In order to test the suitability of the data set for the analyses, the data set was first examined in terms of erroneous, missing and extreme values. In order to determine that the data set provided the assumption of normality, the data set was examined in terms of kurtosis and skewness values. The skewness and kurtosis values of the data set were calculated

as .28 and -.88 for school commitment, -.50 and -.57 for communication, and -.14 and -.75 for learning environment. It was seen that the kurtosis and skewness values of the data were within the range of ±2 and thus it was determined that the data provided the condition of normality, i.e. showed a normal distribution (Tabachnick, Fidell & Ullman, 2013). Within the scope of the research, frequency and percentage analysis were performed in descriptive statistics, t-test in paired groups, one-way anova test in multiple groups and Tukey test was performed to determine the difference between groups. Within the scope of validity and reliability, EFA and CFA analyses were applied, Cronbach's alpha coefficients were examined and the relevant analysis results were presented in the data collection tools section.

FINDINGS

In this section, the findings of the statistical analysis of the data obtained within the scope of the research are given.

Participants' average scores of university school climate

The students' average scores of the university school climate are presented in Table 2.

Table 2. Average Scores of Students Regarding University School Climate

Subscales	N	Min-Max	$\bar{X}$	Sd	Climate Type
School commitment	327	1-5	2,88	1,06	Medium school climate
Communication	327	1-5	3,57	1,02	Open school climate
Learning environment	327	1-5	3,12	1,04	Medium school climate

As seen in Table 2, the perceptions of the university students participating in the study regarding the university school climate are at an open climate level for the communication dimension, while they are at a medium climate level for the school commitment and learning environment dimension. When the average scores of the participants are examined, it is seen that the lowest average score is in the school commitment dimension ($\bar{X}$=2.88) and the highest average score is in the communication dimension ($\bar{X}$=3.57).

Comparison of participants' perceptions of university school climate in terms of gender variable

Table 3 shows the results of the Independent Groups T-Test conducted to compare the school climate perception levels of the university students participating in the study in terms of gender variable.

Table 3. Comparison of University Students' Perceptions of University School Climate in Terms of Gender Variable

	Woman N=226		Man N=101				
Subscales	$\bar{X}$	Sd	$\bar{X}$	Sd	t	p	η2
School commitment	2,68	1,15	3,31	.96	4,78	.00*	.07
Communication	3,50	1,00	3,72	1,06	1,81	.70	-
Learning environment	3,00	.97	3,39	1,13	3,00	.00*	.03

*p< .05

When the Table 3 is examined, it is seen that the students' perceptions of school climate do not show a significant difference in terms of gender variable in the communication dimension ($t_{communication}$ = 1.81, $p_{communication}$ = .70), but there are significant differences in terms of gender variable in the dimensions of school commitment ($t_{school\ commitment}$ = 4.78, $p_{school\ commitment}$ = .00) and learning environment ($t_{learning\ environment}$ = 3.00, $p_{learning\ environment}$ = .00). When the average scores of the participants regarding the school commitment dimension are examined, it is seen that male students ($\bar{X}$ = 3.31) have a higher level of positive perception than female students ($\bar{X}$ = 2.68). In addition, when the averages of the participants regarding the learning environment

dimension are examined, it is seen that male students ($\bar{X}$ = 3.39) have a higher level of positive perception than female students ($\bar{X}$ = 3.00). The perceptions of the participants regarding the communication dimension do not show a significant difference in terms of gender variable. Eta-squared values were calculated in order to determine the effect size of the gender variable on school commitment and learning environment. The gender variable was found to have a "medium" effect size on school commitment (.07) and a "small" effect size on the learning environment (.03).

Comparison of participants' perceptions of university school climate in terms of class variable

Table 4 shows the results of the Independent Groups T-Test conducted to compare the school climate perception levels of the university students participating in the study in terms of the class variable.

Table 4. Comparison of University Students' Perceptions of University School Climate in Terms of Class Variable

	Prepatory Class N=107		**First Class N=220**				
	$\bar{X}$	**Sd**	$\bar{X}$	**Sd**	**t**	**p**	**η2**
School commitment	2,66	.91	2,98	1,11	2,64	.00*	.02
Communication	3,29	.97	3,70	1,02	3,49	.00*	.03
Learning environment	2,92	.94	3,22	1,07	2,43	.01*	.01

*p< .05

When the Table 4 is examined, it is seen that the students' perceptions of school climate show significant differences in terms of the grade variable in the dimensions of school commitment ($t_{\text{school commitment}}$ = 2.64, $p_{\text{school commitment}}$ = .00), communication ($t_{\text{communication}}$ = 3.49, $p_{\text{communication}}$ = .00) and learning environment ($t_{\text{learning environment}}$ = 2.43, $p_{\text{learning environment}}$ = .01). When the average scores of the participants regarding the dimension of school commitment are examined, it is seen that the students studying in the first class ($\bar{X}$ = 2.98) have a higher level of positive perception than the students studying in the preparatory class ($\bar{X}$ = 2.66). When the average scores of the participants regarding the dimension of communication are examined, it is seen that the students studying in the first class ($\bar{X}$ = 3.70) have a higher level of positive perception than the students studying in the preparatory class ($\bar{X}$ = 3.29). Similarly, the averages of the students studying in the first class ($\bar{X}$ = 3.22) differ from the students studying in the preparatory class ($\bar{X}$ = 2.92) in the dimension of communication. In other words, the perceptions of first-class students regarding school climate show significant differences in all dimensions compared to students studying in the preparatory class. Eta-squared values were calculated in order to determine the effect size of the class variable on school commitment, communication and learning environment. It was determined that the gender variable had a "small" effect size (.02) on school commitment, a "small" effect size (.03) on communication and a "small" effect size (.01) on learning environment.

Comparison of participants' perceptions of university school climate in terms of mother's education level variable

Table 5 shows the results of one-way analysis of variance conducted to compare participants' perceptions of university school climate in terms of the mother's education level variable.

Table 5. ANOVA Results Regarding Participants' Perceptions of University School Climate According to the Mother's Education Level Variable

	Education Level	N	$\bar{X}$	Sd	p	Groups with difference
School commitment	Illiterate	99	2,69	.95	.07	
	Literate	28	3,07	.89		
	Primary Education	106	2,93	1,11		
	Secondary Education	77	2,85	1,13		
	Undergraduate	17	3,41	1,07		
Communication	Illiterate	99	3,44	1,03	.18	
	Literate	28	3,86	.84		
	Primary Education	106	3,53	1,02		
	Secondary Education	77	3,61	1,02		
	Undergraduate	17	3,92	1,14		
Learning environment	Illiterate	99	2,83	1,00	.00*	(Illiterate and Undergraduate)
	Literate	28	3,38	.92		
	Primary Education	106	3,15	1,03		
	Secondary Education	77	3,25	1,06		
	Undergraduate	17	3,62	1,03		

*p< .05

When Table 5 is examined, it is seen that the perceptions of the students regarding the school climate differ in terms of the mother's education level variable in the learning environment dimension. As a result of the Tukey test conducted to determine the differentiation between the homogeneous group variances, a significant difference was found between the undergraduate and illiterate groups. While the mean of the illiterate group is ($\bar{X}$=2.83), the mean of the undergraduate group is ($\bar{X}$=3.62). Accordingly, it can be said that as the participants' mother's education level increases, their perceptions of the relationship to the learning environment also increase.

Comparison of participants' perceptions of university school climate in terms of father's education level variable

Table 6 shows the One Way Anova test results conducted to compare the participants' perceptions of the university school climate in terms of the father's education level variable.

Table 6. ANOVA Results Regarding Participants' Perceptions of University School Climate According to Father's Education Level Variable

	Education Level	N	$\bar{X}$	Sd	p	Groups with difference
School commitment	Illiterate	19	2,74	.83	.25	
	Literate	21	2,58	.74		
	Primary Education	103	2,93	1,10		
	Secondary Education	145	2,86	1,06		
	Undergraduate	32	2,89	1,17		
	Postgraduate	7	3,71	1,07		
Communication	Illiterate	19	3,36	.80	.24	
	Literate	21	3,50	.99		
	Primary Education	103	3,47	1,10		
	Secondary Education	145	3,64	.97		
	Undergraduate	32	3,55	1,09		
	Postgraduate	7	4,35	.99		
Learning environment	Illiterate	19	2,97	.93	.03*	
	Literate	21	2,81	.90		
	Primary Education	103	2,98	1,11		
	Secondary Education	145	3,20	1,01		(Literate and

	Undergraduate	32	3,25	.99		Postgraduate)
	Postgraduate	7	4,11	.92		

*p< .05

When Table 6 is examined, it is seen that the participants' perceptions of school climate differ only in the dimension of the learning environment in terms of the father's education level variable. As a result of the Tukey test conducted to determine the differentiation between the homogeneous group variances, a significant difference was found between the postgraduate group and the literate group. When the group means are examined, the mean of the literate group is ($\bar{X}$=2.81) while the mean of the postgraduate graduate group is ($\bar{X}$=4.11). Accordingly, it can be said that as the participants' father's education level increases, their perceptions of the learning environment also increase.

Comparison of participants' perceptions of university school climate in terms of the family average income level variable

Table 7 shows the One Way Anova test results to compare the perceptions of university students participating in the study regarding the university school climate in terms of the family average income level variable.

Table 7. ANOVA Test Results on Participants' Perceptions of University School Climate According to the Family Average Income Level Variable

	Family Average Inc.	**N**	$\bar{X}$	**Sd**	**p**	**Groups with difference**
School commitment	0-9.999 TL	30	2,96	1,11	.57	
	10.000-19.999 TL	202	2,81	1,06		
	20.000-29.999 TL	55	3,11	1,03		
	30.000-39.999 TL	19	2,82	.95		
	40.000-49.999 TL	12	2,78	.99		
	50.000 TL and more	9	3,00	1,41		
Communication	0-9.999 TL	30	3,47	.97	.10	
	10.000-19.999 TL	202	3,47	1,04		
	20.000-29.999 TL	55	3,87	.89		
	30.000-39.999 TL	19	3,55	1,09		
	40.000-49.999 TL	12	4,02	.66		
	50.000 TL and more	9	3,61	1,41		
Learning environment	0-9.999 TL	30	2,90	1,06	.22	
	10.000-19.999 TL	202	3,05	1,07		
	20.000-29.999 TL	55	3,39	.92		
	30.000-39.999 TL	19	3,26	1,00		
	40.000-49.999 TL	12	3,37	.68		
	50.000 TL and more	9	2,99	1,21		

*p< .05

When Table 7 is examined, it is seen that the participants' perceptions of school climate do not differ significantly in terms of the average income level of the family.

Comparison of participants' perceptions of university school climate in terms of age variable

Table 8 shows the One Way Anova test results conducted to compare the perceptions of university students participating in the study regarding the university school climate in terms of age variable.

Table 8. ANOVA Results Regarding Participants' Perceptions of University School Climate According to Age Variable

	Age	N	$\bar{X}$	Sd	p	Groups with difference
School commitment	18	25	2,67	.97	.39	
	19	76	2,83	1,09		
	20	93	2,93	1,06		
	21	64	3,07	1,11		
	22	31	2,63	1,04		
	23 and older	38	2,85	.95		
Communication	18	25	3,66	1,14	.37	
	19	76	3,66	.94		
	20	93	3,38	1,10		
	21	64	3,71	.90		
	22	31	3,50	1,06		
	23 and older	38	3,61	1,04		
Learning environment	18	25	3,40	1,05	.40	
	19	76	3,10	1,04		
	20	93	3,06	1,08		
	21	64	3,27	1,01		
	22	31	3,06	1,07		
	23 and older	38	2,91	.95		

*p< .05

When Table 8 is examined, it is seen that the participants' perceptions of school climate do not differ significantly according to the age variable.

Comparison of participants' perceptions of university school climate in terms of the number of siblings variable

Table 9 shows the One Way Anova test results conducted to compare the perceptions of university school climate of university students participating in the study in terms of the number of siblings variable.

Table 9. ANOVA Test Results on Participants' Perceptions of University School Climate According to the Number of Siblings Variable

	Number of siblings	N	$\bar{X}$	Sd	p	Groups with difference
School commitment	1	10	2,60	.97	.20	
	2	41	3,21	1,15		
	3	50	2,88	1,07		
	4	55	2,87	1,01		
	5	49	2,98	1,11		
	6 and more	122	2,75	1,01		
Communication	1	10	3,86	.99	.33	
	2	41	3,78	1,05		
	3	50	3,56	1,14		
	4	55	3,60	.95		
	5	49	3,67	.90		
	6 and more	122	3,42	1,03		
Learning environment	1	10	3,33	.97	.04*	(2 – 6 and more)
	2	41	3,46	1,10		
	3	50	3,15	1,04		

	4	55	3,06	.96
	5	49	3,32	1,03
	6 and more	122	2,92	1,03

*p< .05

When Table 9 is examined, it is seen that the participants' perceptions of school climate show a significant difference in the learning environment dimension in terms of the number of siblings variable. The Tukey test, which was conducted to determine the differentiation between homogeneous group variances, found a significant difference between the groups with 2 and 6 and above siblings. When the group means are examined, the mean of the group with 2 siblings is ($\bar{X}$=3.46), while the mean of the group with 6 and more siblings is ($\bar{X}$=2.92). Accordingly, it can be said that as the number of siblings decreases, the participants' perceptions of the learning environment increase.

Comparison of participants' perceptions of university school climate in terms of place of residence variable

Table 10 shows the One Way Anova test results conducted to compare the participants' perceptions of the university school climate in terms of the place of residence variable.

Table 10. ANOVA Test Results on Participants' Perceptions of University School Climate According to Place of Residence Variable

	Place of residence	**N**	***X̄***	**Sd**	**p**	**Groups with difference**
School commitment	Dormitory	252	2,91	1,06	.31	
	Home	39	2,90	.99		
	Other	36	2,62	1,11		
Communication	Dormitory	252	3,50	1,04	.02*	(Dormitory and home)
	Home	39	3,98	.83		
	Other	36	3,64	1,00		
Learning environment	Dormitory	252	3,11	1,02	.056	
	Home	39	3,41	1,01		
	Other	36	2,84	1,11		

*p< .05

When Table 10 is examined, it is seen that the perceptions of the participants' school climate show a significant difference only in the communication dimension in terms of the place of residence variable. The Tukey test, which was conducted to determine the differentiation between the homogeneous group variances, found a significant difference between the dormitory and house groups. When the group means are examined, the mean of the group living at home is ($\bar{X}$=3.98), while the mean of the group living in the dormitory is ($\bar{X}$=3.50). Accordingly, it can be stated that the students living in the dormitory have a higher level of communication perception than the students living at home.

Correlation level between university school climate and its sub-dimensions

Table 11 shows the Pearson Correlation test results conducted to determine the correlation level between the university school climate and its sub-dimensions.

Table 11. Correlation Test Results Between University School Climate and Its Sub-Dimensions

	University School Climate	**Communication**	**Learning Environment**	**School Commitment**
University School Climate	1	.89**	.92**	.85**
Communication		1	.74**	.61**
Learning Environment			1	.72**
School Commitment				1

University school climate consists of communication, learning environment and school commitment sub-dimensions, and the relationship between university school climate and its sub-dimensions was determined by Pearson correlation analysis. As can be seen in Table 11, a

positive and high level (strong) correlation was found between university school climate and communication (r=0.89; p<0.01), learning environment (r=0.92; p<0.01) and school commitment (r=0.85; p<0.01) dimensions. In addition, a moderate level correlation was found between school commitment and communication (r=0.61; p<0.01) among the sub-dimensions.

CONCLUSION and DISCUSSION

The aim of the study was to determine the level of perceptions of the participants regarding the university school climate they study at and to examine various demographic variables that affect the participants' perceptions of the school climate. As a result of the study, it was determined that the students' perceptions of the communication dimension were high. The students who participated in the study stated that the faculty members were always open to communication, that the faculty members volunteered to listen to them when they had a problem, and that the university administration valued the students' opinions. This result is a desired situation because it can be said that a positive school climate prevails in institutions where healthy communication comes to life. In addition, it is known that student academic achievement is high in schools with a positive school climate, that students feel better psychologically, and that social relations with both students and other staff are positive (Berkowitz et al., 2017; Konishi et al., 2022; Long et al., 2021). Within the scope of this study, the students' perceptions of the school climate were determined as an open climate in the communication dimension, but there are studies in the literature that show the opposite. In their study, Çelik, Terzi and Gültekin (2017) found that university students' perceptions of school climate were at a medium level in the communication dimension. Akpulat et al. (2022) found university students' perceptions of school climate as a closed climate in the communication dimension. The reason why the results of this study differ from other studies in the literature may be due to the fact that Munzur University is a younger, newer university, the number of students is low, and therefore the number of faculty members per student is high. In other words, since Munzur University is a newly established university, it can be said that students can reach faculty members more easily, and this has a positive effect on students' perceptions of school climate.

As a result of this research, it was found that the students' perceptions of the climate dimension of school commitment were at a moderate level. In other words, it can be said that the students' attachment to the university they study at was at a moderate level. In other words, it can be said that the students who participated in the research partially saw themselves as a part of the school and partially felt a sense of belonging to the school. This result of the research is similar to other studies in the literature. In the research conducted by Çelik et al. (2017), it was seen that the climate perceptions of university students regarding the dimension of school commitment were at a moderate level. Again, within the scope of this research, it was found that the students' perceptions of the climate dimension of learning environment were at a moderate level. In other words, it can be said that the students perceived the learning environment partially positively. Similarly, Çelik et al. (2017) found that the perceptions of university students regarding the learning environment were at a moderate level as a result of the research. The reason why this result of the study is similar to other studies may be due to the fact that both universities are public universities and offer similar learning opportunities to their students.

Participants' perceptions of university school climate show a significant difference in terms of gender variable. Male students have higher perceptions of school climate in terms of both school commitment and learning environment. This may be due to the fact that male students have a higher level of tolerance to the problems they encounter compared to female students. It is a noteworthy result that female students have a lower level of perception of school climate than male students. When the literature is examined, researchers (Jia et al., 2009; Sökmez et al., 2020) state that female students have a higher level of perception of school climate than male students.

The participants' perceptions of university school climate show significant differences in terms of the class variable. It was found that the school climate perceptions of the first-class students

were higher than those of the students studying in the foreign language preparatory class. It is noteworthy that although both groups are in their first year of university education, their perceptions of school climate differ. The students studying in the foreign language preparatory classes may have problems in adapting because they are subject to the course system applied in language teaching, which causes the student to change classes more than once in the same period of study according to his/her language level. For this reason, it can be stated that the school climate perceptions of the students studying in the foreign language preparatory class differ from those of the first-class students. When the literature is examined, no study was found that compares the school climate perceptions of the foreign language preparatory class and the first-class students at the university level.

The participants' perceptions of the university school climate show a significant difference only in the learning environment dimension according to the mother's education level variable. A significant difference was found between students whose mothers are illiterate and students whose mothers are undergraduates. In other words, students whose mothers are undergraduates have a higher positive school climate perception. This is an expected result because it can be stated that as the mother's education level increases, the student's academic success increases (Aslan, 2017; Shaheen & Awan, 2020) and that if the student's academic success increases, it is an expected situation that their positive feelings and thoughts about the university and learning environment will also increase.

The participants' perceptions of the university school climate show a significant difference only in the learning environment dimension according to the father's education level variable. A significant difference was found between students whose fathers are literate and students whose fathers are postgraduates. In other words, students whose fathers are postgraduates state that the university they study at has a student-centered education approach, that there is sufficient physical equipment for learning, and that if they want to learn, they definitely find an opportunity at the university they study at. This result is expected because the existence of a significant relationship between the father's education level and academic success (Chung, Phillips, Jensen & Lanier, 2020) is stated by researchers. It can be said that it is an expected situation that students with high academic success have high perceptions of positive school climate.

The participants' perceptions of school climate do not show any significant difference in terms of the average income level of the family. It can be said that the reason for this may be that the majority of the participants are in the low-income group. When the literature is examined, there are studies indicating that there is a significant relationship between the average income level of the family and the perception of school climate (Doğan, 2012; Hopson & Lee, 2011; Küsmez & Yeşilkayalı, 2020).

The perceptions of the participants regarding the school climate show a significant difference only in the learning environment dimension according to the number of siblings variable. A significant difference was found between students with two siblings and students with six or more siblings. In other words, students with two siblings have a higher level of positive school climate perception compared to students with six or more siblings. In other words, it can be stated that the perception of the school climate increases as the number of siblings decreases. As the number of individuals in the family increases, the family's income is divided among the individuals accordingly. Therefore, considering that the per capita income decreases as the number of siblings increases, it can be stated that students with fewer siblings perceive their learning environments more positively due to their greater access to physical facilities.

The perceptions of the participants regarding the school climate show a significant difference only in the communication dimension according to the place of residence variable. A significant difference was found between the students living in dormitories and those living at home. In other words, the perceptions of the school climate of the students living in dormitories differ in the communication dimension. In other words, it can be said that the perceptions of the students

living in dormitories regarding the school climate increase in the communication dimension. It can be said that this is an expected situation because the students living together in dormitories spend more time together than the students living at home, and it can be said that the students may have developed more positive attitudes towards communication due to this interaction.

The research results show that there is a positive and high level of correlation between the university school climate and the dimensions of learning environment, communication and school commitment. In other words, it can be stated that primarily the learning environment, and then communication and school commitment have a major role in the formation of students' perceptions of school climate. Since the positive perception of the learning environment ensures easier and stronger communication between students and academic staff, it can be stated that the communication perceptions of students who perceive the learning environment positively increase positively. If the communication established between students and academic staff is powerful, it can be said that there are powerful learning environments. Similarly, it can be said that students who perceive the environments they study in positively increase their commitment to the school. Therefore, it can be stated that the learning environment, communication and school commitment play a major role in the formation of university students' perceptions of school climate.

As a result of this research, which investigated the perceptions of students studying in the foreign language preparatory class and first class regarding the school climate of the university they studied, it was determined that the participants' perceptions of the university school climate were high in the communication dimension, while they were at a medium level in the learning environment and school commitment dimensions. In addition, it was found that the participants' perceptions of the university school climate showed significant differences according to the variables of gender, class, mother's education level, father's education level, number of siblings and place of residence. In line with the information obtained as a result of the research, suggestions for researchers and administrators are presented below.

The research results show that students' perceptions of the university school climate are at a moderate level in terms of school commitment and learning environment dimensions. In order to increase students' commitment to the school, that is, their sense of belonging, university administrations can conduct studies to determine the factors affecting students' belonging. Guidance services can be provided to students in line with the information obtained as a result of these studies. In order to increase students' perceptions of the learning environment in which they study, more comprehensive studies can be conducted by the department or program administrators to whom students are affiliated in order to determine the factors that reduce students' perceptions of the learning environment. Since there is a relationship between the variables of the mother's education level, the father's education level and the number of siblings and the student's perceptions of the learning environment, guidance services can be provided by university administrations to students whose mothers and fathers have low education levels and students who have many siblings in order to increase the positive perceptions of these students regarding the learning environment.

The results of the research show that although students of the same university study in different departments, the perceptions of school climate differ. In order to determine the underlying reasons for this, studies can be conducted by other researchers with different samples. In this study, students studying in the preparatory class and first class were included in the sample. In addition to this sample, students studying in upper classes can be included in the studies to be conducted. By conducting research on the perceptions of school climate of students studying in universities located in provinces with higher socioeconomic levels, comparisons can be made between universities and provinces. School climate research at the higher education level is quite limited. In order to close this gap and ensure that higher education institutions provide more qualified and effective education, qualitative research can be conducted to determine the variables affecting the perceptions of school climate of students studying in different

universities. The results of this research cannot be generalized to all university students since they are limited to the opinions of students studying at Munzur University in Tunceli city center.

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Millî Eğitim Bakanlığı Yönetici Seçme ve Görevlendirme Ölçütlerinin Değerlendirilmesi

Evaluation of the Criteria Utilized by the Ministry of National Education for Selection and Assignment of Administrators

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Atıf:
Berk, Ş., Ergül Z. (2025). Milli Eğitim Bakanlığı Yönetici Seçme ve Görevlendirme Ölçütlerinin Değerlendirilmesi. *Disiplinlerarası Eğitim Araştırmaları Dergisi,* 9(20), 301-328, DOI: 10.57135/jier. 1640874

Öz
Bu araştırma, 2021 Yönetici Seçme ve Görevlendirme Yönetmeliği ile getirilen ölçütlerin liyakatli yöneticileri belirlemedeki etkinliğini incelemektedir. Nitel yaklaşımlardan durum analizine uygun gerçekleştirilen bu araştırmada veriler yarı yapılandırılmış görüşme formu ile toplanmıştır. Araştırmaya İstanbul'da görev yapan 28 okul yöneticisi katılmış, elde edilen verilerin çözümlenmesinde betimsel analiz ve içerik analizi birlikte kullanılmıştır. Bulgular, mevcut ölçütlerin bazı yönlerden yetersiz, bazı yönlerden ise geliştirilmesi gerektiğini göstermektedir. Katılımcılar, sınav sisteminin eksikliklerine, yönetici adaylarının belirlenme sürecindeki adaletsizliklere ve ölçütlerin bölgesel farklılıklara uygun olmayışına dikkat çekmiştir. Sonuç olarak, eğitim kurumlarının daha liyakatli yöneticiler tarafından yönetilmesi için, yönetici seçim ölçütlerinin daha nesnel, adil ve etkili olması gerekmektedir. Ölçütlerin paydaş görüşleri doğrultusunda güncellenmesi ve bilimsel temellere dayandırılması, eğitim yönetiminde niteliği artıracaktır. Özellikle ediniminde yönetici adayının aktif katkısı olmayan ölçütlerin çıkarılması önerilmektedir.

Anahtar Kelimeler: ölçüt değerlendirme, yönetici seçme ölçütlerini değerlendirme, okul müdürü seçme ölçütlerini değerlendirme, yönetici seçme.

Abstract
This study evaluates the effectiveness of the criteria introduced by the 2021 Administrator Selection and Assignment Regulation in identifying qualified administrators. Conducted using a case study approach, a qualitative research method, the data were collected through a semi-structured interview form. The study involved 28 school administrators working in Istanbul, and the collected data were analyzed using descriptive and content analysis. The findings indicate that while some aspects of the existing criteria are insufficient, others need improvement. Participants highlighted deficiencies in the examination system, injustices in the selection process of administrator candidates, and the lack of adaptation of the criteria to regional differences. In conclusion, for educational institutions to be managed by more competent administrators, the selection criteria should be more objective, fair, and effective. Updating these criteria based on stakeholder feedback and grounding them in scientific principles will enhance the quality of educational administration. In particular, it is recommended to remove criteria that do not involve the active contribution of the principal candidate in their acquisition.

Keywords: criteria evaluation, evaluating administrator selection criteria, evaluating school principal selection criteria, selecting administrators.

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GİRİŞ

İnsanlık tarihinin toplumsal, ekonomik, bilimsel değişimle yeniden şekillendiği; bilişim ve iletişim çağına evrildiği günümüz dünyasının en önemli özelliği birçok alanda eşzamanlı, etkileşimli ve hızlı değişimdir. Bu değişime ayak uydurabilme düzeyi ile sahip olunan eğitim düzeyi arasında pozitif yönde korelasyon mevcuttur. İyi eğitim almış bireyler her zaman değişen koşullara daha kolay uyum sağlayabilmektedirler (Ereş, 2005; Millî Eğitim Bakanlığı, 2018). Eğitim, toplumlardaki her türlü hızlı değişime uyum sağlayabilmede önemli araç olmanın yanında, anayasal teminat altında olan temel bir insan hakkıdır. Toplumlar bir yandan kendi eğitim sistemini oluşturarak kültürlerinde var olan bilgi, deneyim ve değerleri gelecek nesillere aktarırken, diğer yandan aktarılan bu özellikler eğitimin sistemlerini şekillendirmektedir (Dinçer, 2003). Bu zaviyeden bakıldığında eğitimin amaçlarından biri belki de en önceliklisi ahlaki, insani, manevi ve kültürel değerlerden kopmadan evrensel kültürle uyum sağlayan; geçmişle gelecek arasında bağ kurarak toplumdaki birikimi gelecek nesillere aktaran, doğayla barışık, insan haklarına karşı görev ve sorumluluklarını davranış haline dönüştürmüş yurttaşlar yetiştirmektir. İnsanların bilişsel ihtiyaçları büyük oranda evrenseldir ve bu ihtiyaçların karşılanmasında eğitime muhtaçtırlar. Dolayısıyla yukarıda sayılan niteliklere sahip bireyler yetiştirmenin yolu eğitimden geçmektedir.

Bir sistem olarak eğitim girdi, süreç ve çıktılardan oluşmaktadır. Eğitim sisteminin istenilen niteliklere sahip bireyler yetiştirebilmesi için sistemin öğeleri olan girdi, süreç ve çıktı aşamalarında veli, öğretmen, öğrenci vb. birçok kilit paydaş ile iş birliği yapmak ve eşgüdüm içinde çalışması gerekmektedir. Eğitim sisteminin her üç öğesi üzerinde en çok etkiye sahip girdisi eğitim kurumlarında yönetici pozisyonunda olan kişilerdedir (Gupta ve Gupta, 2013). Bu bağlamda, okul müdürleri ve yönetici pozisyonundaki diğer kişiler, eğitim sisteminin en önemli aktörlerinden biri olarak hem öğretmenlerin hem de öğrencilerin akademik başarısını ve okul kültürünü doğrudan etkileyen liderlerdir. Sahip olduğu konumun gerektirdiği bilişsel, duyuşsal ve devinsel yetkinliklere sahip bir yönetici kadrosu, eğitimi toplumun gelişmesinde itici güç haline getirebilir.

Diğer toplumsal kurumlarla birlikte eğitim örgütleri de sürekli değişim ve gelişimden etkilenirler. Eğitim kurumlarının değişime uyum sağlayarak toplumsal gelişime katkı sağlamalarında kilit öğelerden biri de yöneticilerdir. Değişimi iyi yönetebilen, karşılaştıkları sorunlarla baş edebilen lider nitelikli yöneticiler eğitim örgütlerini ileri taşıyabilirler. Dolayısıyla okulun başarısındaki rol öncelikle okul müdürü olmak üzere okul yöneticilerinindir. Hatta okul yöneticisinin liderlik becerileri ile öğrenci başarısı arasında bağlantı olduğunu gösteren birçok çalışma mevcuttur (Robinson, Lloyd ve Rowe, 2008; Webster ve Litchka, 2020; Gurr, 2024). Okul yöneticisinin (müdür ve müdür yardımcıları) liyakatli ve ehliyetli kişilerden seçilmesi durumunda eğitim etkinliklerinden beklenen fayda en üst düzeyde elde edilebilir. Okul yöneticilerinin öğrencileri, öğretmenleri, memurları, hizmetlileri, güvenlik görevlilerini, dışarıdan alınan hizmetleri ve velilerle ilişkileri iyi biçimde yönetme; ılımlı ve sağlıklı bir okul iklimi oluşturma, öğrencilerin gelişimlerini takip etme, okulun fiziki şartlarını iyileştirme, yönetim becerisine sahip olma gibi sorumlulukları vardır. Yöneticilerin olumlu okul kültürü, iyi öğrenme, alt-üst birimlerle güçlü ve sağlıklı bağ kurma ortamı oluşturabilmeleri, sağlıklı ilişkiler kurmaları; tüm paydaşların beklentilerini göz önünde bulundurmaları ile mümkündür. Liderlikle ilgili yapılan araştırmalar, etkili okulların etkili öğretim liderleri tarafından yönetildiğini göstermektedir (Lipham, 1981; Griffin, 1993; Balcı, 2001; Gümüşeli, 2001; Akt. Gürbüz, Erdem ve Yıldırım, 2013). Sorumluluk sahibi, kendini sürekli güncelleyerek mesleki gelişimini sürdüren, teknolojiyi takip eden, toplumla, çevreyle ve çalışanlarıyla iyi ilişkiler kuran ve okulun her açıdan gelişimi için çaba gösteren güçlü bir liderin varlığı eğitim kurumları için hayati önem taşımaktadır. Anılan niteliklere sahip okul yöneticilerinin tüm yönetsel süreçlerde başarılı olabilmeleri için, iyi yetişmeleri yanında, okul yöneticilerini seçme ve atanma ölçütlerinin nesnel, mesleki bilgi ve becerilere dayandırılmasını zorunlu kılmaktadır (Özmen ve Kömürlü, 2010).

Ölçütler, belirli bir durumun, olgunun ya da bireyin karşılaştırılması, değerlendirilmesi ve seçiminde işe koşulan norm, standart ya da referans noktalarıdır. Ölçütler, karar verme süreçlerinde yönlendirici rol oynayarak seçimlerin belirli ilkelere uygun ve nesnel biçimde gerçekleştirilmesine katkı sağlarlar. Ölçütlerin kullanılmasının temel amacı, standartlaştırılmış bir değerlendirme yaparak nesnel sonuçlara ulaşmak ve sağlıklı karar verme süreçlerine destek olmaktadır (Berk, Topcan ve Özdemir, 2015; Bandalos, 2018). Ölçütlerin, kendisinden beklenen nesnelliği sağlamada yol göstericilik rolünü yerine getirebilmeleri için kullanıldığı alan için uygun, anlamlı ve ilgili alan için kullanılabilir kısacası "geçerli" olmalıdır. Aynı zamanda ölçüt, ölçtüğü niteliği doğru olarak ölçebilmeli yani "güvenilir" olmalıdır. Diğer tüm alanlarda olduğu gibi okul yönetimi bağlamında da bir okul yöneticisinin görevini etkili biçimde yapabilmesi için gerekli niteliklere sahip olup olmadığını belirlemek için çeşitli ölçütler geliştirilir. Bu ölçütler akademik yeterlilik, yöneticilik becerileri, liderlik özellikleri, iletişim yetkinliği, etik değerler ve karar verme kapasitesi gibi birçok farklı boyutu içerebilir (Northouse, 2016).

Geçerli ve güvenilir ölçütlerin belirlenmesi, seçim süreçlerinde objektif ve adil bir değerlendirme yapmayı mümkün kılar. Keyfi ve subjektif değerlendirmeler, liyakat yerine kişisel tercihlere dayalı seçimleri teşvik edebilir ve bu durum, eğitim kurumlarında yönetim etkinliğini olumsuz etkileyebilir. Doğru belirlenmiş ölçütler sayesinde adayların bilgi, beceri ve deneyimleri nesnel bir şekilde analiz edilir ve eğitim yönetimi için en uygun ve liyakatli bireylerin seçilmesi sağlanır (Bush, 2008; Leithwood ve Sun, 2017). Liyakat, bireylerin bilgi, beceri, yetenek, deneyim ve becerilerinin atandığı ya da atanmak istediği pozisyona uygunluğunu ifade eder. Liyakat ilkesine dayalı okul yöneticisi seçiminde ölçütlerin belirlenmesi, eğitim kurumlarının sürdürülebilir başarısını sağlamada kritik role sahiptir. Etkili bir okul müdürü, yalnızca akademik donanımı ile değil, aynı zamanda kriz yönetimi, iletişim becerileri, pedagojik liderlik ve toplumsal farkındalık gibi yetkinlikleriyle de değerlendirilmelidir (Hallinger, 2018). Doğru ölçütlerle yapılan yönetici seçimleri, okulun akademik başarı düzeyini artırmanın yanı sıra öğretmen ve öğrenci motivasyonunu da olumlu yönde etkileyebilir (Marzano et al., 2005). Liyakat esasına dayalı yönetim anlayışı, eğitim sisteminde fırsat eşitliği sağlarken, kurumsal güvenilirliği de artırmaktadır. Bu doğrultuda, müdür atamalarında nesnel ölçütlerin belirlenmesi ve bu ölçütlere dayalı değerlendirme süreçlerinin işletilmesi, eğitim kurumlarının yönetimsel kalitesini artırarak öğrencilerin daha iyi bir eğitim almasını destekler.

Türkiye'de yönetici seçme ve görevlendirmede işe koşulan ölçütler çeşitli dönemlerde değişegelmektedir. Bu değişimlerin arkasında yatan temel motivasyonun yöneticilik pozisyonu için daha liyakatli ve ehil adayların seçilebilmesi çabası olduğu değerlendirilmektedir. Bu yargıya en önemli kanıt olarak son üç (2017, 2018, 2021) yönetmelikte nesnelliği her zaman tartışma konusu olan sözlü sınavın ağırlığının giderek azalmış olması gösterilebilir. 2017 yönetmeliğinde sözlü sınavın ağırlığı %50 iken, 2018'de önce %40'a, sonra da %20'ye düşürülmüştür. 2021 Yönetmeliğinde ise sözlü sınavın ağırlığı %20 olarak devam etmiştir. Türkiye genelinde sözlü sınav jüri üyelerinin puanlarını yönetici adaylarının yazılı sınavlarına yakın ya da aynısını verme eğiliminde oldukları göz önüne alındığında sözlü sınavın işlevsiz hale geldiği düşünülebilir (Dilbaz ve Atış, 2021). Yazılı sınavdan alınan puanın ortalamaya etkisi yıllar içerisinde büyük oranda %50 olarak sabit kalmıştır (Millî Eğitim Bakanlığı, 2017; Millî Eğitim Bakanlığı, 2018; Millî Eğitim Bakanlığı, 2021).

Yönetici seçme ya da görevlendirmede yazılı ve sözlü sınavların dışında dikkate alınan diğer ölçütler eğitim, deneyim, ödüller, cezalar gibi ölçütlerdir. Süreç içerisinde bu kategoriler altındaki performans göstergelerine verilen puanlar değişse de bu kategoriler sabit kalmıştır. Örneğin eğitim yönetimi alanında doktora derecesine sahip olmak 2014 Yönetmeliğinde 10 puan getiren bir ölçüt iken, takip eden üç yönetmelikte (2015, 2017, 2018) sadece beş puan getiren bir ölçüt olmuştur (Millî Eğitim Bakanlığı, 2014). Aynı ölçüt 2021 yönetmeliğinde ise on beş puan gibi önceki yönetmeliklere göre oldukça yüksek bir puan getirisine sahip olmuştur

(Millî Eğitim Bakanlığı, 2021). Ölçütlere verilen puanların son on yıldaki değişimleri aşağıdaki Tablo 1'de gösterilmiştir.

Tablo 1. Son beş yönetmelikte ortak olan ölçütler ve bu ölçütlere tekabül eden puanlar

	Ölçütler	Yıllar				
		2014	2015	2017	2018	2021
Eğitimler	Ön lisans ve lisans eğitiminin her bir yılı için (En fazla 4 yıl)	1	1	1	1	-*
	Diğer alanlarda yüksek lisans için	3	2	2	2	7
	Yönetim alanında yüksek lisans	5	3	3	3	8
	Diğer alanlardaki doktora	8	4	4	4	11
	Yönetim alanında doktora	10	5	5	5	15
Ödüller	Teşekkür Belgesi veya Başarı Belgesi (En fazla 1 adet)	1	1	1	1	1
	Takdir Belgesi veya Üstün Başarı Belgesi (En fazla 1 adet)	2	2	2	2	2
	Aylıkla Ödül (En fazla 1 adet)	3	3	3	3	-
	Ödül (En fazla 1 adet)	5	4	4	4	3
Cezalar	Her bir kınama cezası için (Affa uğramış olanlar hariç)	-1	-1	-1	-1	-1
	Her bir aylıktan kesme veya maaş kesilmesi cezası için (Affa uğramış olanlar hariç)	-3	-3	-3	-3	-2
	Her bir kademe ilerlemesinin durdurulması, kıdem indirilmesi ve derece indirilmesi cezası için (Affa uğramış olanlar hariç)	-5	-5	-5	-5	-3
Hizmet	Öğretmenlikte geçen her bir yıl için	0,36	0,36	0,36	0,36	1
	Kurucu Müdür, Müdür yardımcılığında ve Müdür yetkili öğretmenlikte geçen her bir yıl için	0,48	0,48	0,48	0,48	2
	Müdür başyardımcılığında geçen her bir yıl için	0,60	0,60	0,6	0,6	3
	Müdürlükte ve Bakanlığın Merkez ve Taşra Teşkilatlarında Şube Müdürü veya daha üst kademelerde geçen her bir yıl için	0,72	0,72	0,72	0,72	4

*2021 Yönetmeliğinde hizmet yılına puan verilmemekte ancak ikinci lisans için 4 puan verilmektedir.

Tablo 1'de görüldüğü gibi 2021 Yönetmeliğine kadar olan yönetmeliklerde ölçütlere verilen puanlar büyük oranda benzerlik gösterirken bu yönetmelikte ciddi oranda farklılaşma görülmektedir. Ayrıca, önceki yönetmeliklerden farklı olarak 2021 Yönetmeliğinde değişik kategoriler altında ilave ölçütler getirilmiştir. Bu kategoriler şunlardır: Akademik ve Mesleki Deneyim, Kurum Geliştirme Deneyimi, Okul Geliştirme Deneyimi Sadece 2021 yönetmeliğinin ekinde diğer yönetmeliklerdeki ölçütlere ek olarak üç kategori altında toplam 33 adet ölçüt olduğu görülmektedir. Kategoriler ve ölçütler tablo 2'de gösterilmiştir.

Tablo 2. Sadece 2021 Yönetmeliğinde olan ölçütler (Ek-2 yeniden görevlendirmeler için)

Kategori		Ölçüt	Puan
AKADEMİK ve MESLEKİ DENEYİM		Ulusal hakemli dergide makalesi yayınlanmak	2
		Uluslararası hakemli dergide makalesi yayınlanmak	3
		Üniversitede en az bir dönem ders okutmak ve değerlendirme yapmış olmak	2
		Öğretmen adaylarının yapacakları öğretmenlik uygulaması kapsamında uygulama okul müdürü olarak görev yapmış olmak	3
KURUM GELİŞTİRME DENEYİMİ	Kurumsal Yeterlik Çalışmaları	Yöneticisi olduğu eğitim kurumu adına marka tescili alanlar	3
		Yöneticisi olduğu eğitim kurumunun öğretmen ve öğrencileri Türk Patent ve Marka Kurumundan tasarım tescili alanlar	4
		Yöneticisi olduğu eğitim kurumunun öğretmen ve öğrencileri Türk Patent ve Marka Kurumundan faydalı model tescili alanlar	5
		Yöneticisi olduğu eğitim kurumunun öğretmen ve öğrencileri Türk Patent ve Marka Kurumundan patent tescili alanlar	6
	Proje çalışmaları	Yöneticisi olduğu eğitim kurumunda yürütülen ve sonuçlandırılan ulusal proje bulunmak	1
		Yöneticisi olduğu eğitim kurumunda yürütülen ve sonuçlandırılan uluslararası proje bulunmak	2
		Yürütülen ulusal projelerden sonuçlandırılanlarda danışman olarak görev almış olmak	2
		Yürütülen uluslararası projelerden sonuçlandırılanlarda danışman olarak görev almış olmak	4
		Yürütülen ulusal projelerden sonuçlandırılanlarda yürütücü olarak görev almış olmak	3
		Yürütülen uluslararası projelerden sonuçlandırılanlarda yürütücü olarak görev almış olmak	5
	Öğretmenin Güçlendirilmesi	Hizmetiçi eğitim faaliyetlerine kursiyer olarak katılmış olmak	1
		Hizmetiçi eğitim faaliyetlerine eğitim yöneticisi olarak katılmış olmak	2
		Hizmetiçi eğitim faaliyetlerine eğitim görevlisi olarak katılmış olmak	2
OKUL GELİŞTİRME DENEYİMİ	Başarı Farklarını Azaltma	İlkokullarda Yetiştirme Programı (İYEP) kapsamında yönetim görevini yürütmek	2
		Destekleme ve Yetiştirme Kursları (DYK) kapsamında yönetim görevini yürütmek	2
		Evde ve hastanede eğitim hizmetleri kapsamında yönetim görevini yürütmek	2
		Yöneticisi olduğu eğitim kurumunda destek eğitim odası açılmış olmak	2
		Ders dışı eğitim çalışmalarında yönetici olarak görev yapmış olmak	2
	Öğrenci Başarıları	Yöneticisi olduğu eğitim kurumunda ulusal düzeyde düzenlenen bilgi/beceri/spor/sanat/proje vb. yarışmalarda mansiyon alan öğrenci bulunmak	1
		Yöneticisi olduğu eğitim kurumunda ulusal düzeyde düzenlenen bilgi/beceri/spor/sanat/proje vb. yarışmalarda üçüncü olan öğrenci bulunmak	2
		Yöneticisi olduğu eğitim kurumunda ulusal düzeyde düzenlenen bilgi/beceri/spor/sanat/proje vb. yarışmalarda ikinci olan öğrenci bulunmak	3
		Yöneticisi olduğu eğitim kurumunda ulusal düzeyde düzenlenen bilgi/beceri/spor/sanat/proje vb. yarışmalarda birinci olan öğrenci bulunmak	4
		Yöneticisi olduğu eğitim kurumunda uluslararası düzeyde düzenlenen bilgi/beceri/spor/sanat/proje vb. yarışmalarda mansiyon alan öğrenci bulunmak	2
		Yöneticisi olduğu eğitim kurumunda uluslararası düzeyde düzenlenen bilgi/beceri/spor/sanat/proje vb. yarışmalarda üçüncü olan öğrenci bulunmak	4
		Yöneticisi olduğu eğitim kurumunda uluslararası düzeyde düzenlenen bilgi/beceri/spor/sanat/proje vb. yarışmalarda ikinci olan öğrenci bulunmak	6
		Yöneticisi olduğu eğitim kurumunda uluslararası düzeyde düzenlenen bilgi/beceri/spor/sanat/proje vb. yarışmalarda birinci olan öğrenci bulunmak	8

Tablo 2'de görülen önceki yönetmeliklerde olmayan yeni ve ilave ölçütlerden edinilen puanlar usulüne uygun edinildiği takdirde daha duyarlı ve güvenilir değerlendirme yaparak liyakatli yöneticilerin saptanmasına hizmet etmesi beklenebilir. Ancak 2021 Yönetmeliğinde ilk defa kullanılmaya başlayan ölçütlerin diğer ölçütlerle birlikte ne kadar amaca hizmet ettiği henüz paydaş görüşlerine göre değerlendirilmemiştir. 5 Şubat 2021 tarih ve 31386 sayılı Resmî Gazetede yayımlanarak uygulamaya konan "Millî Eğitim Bakanlığına Bağlı Eğitim Kurumlarına

Yönetici Seçme ve Görevlendirme Yönetmeliğindeki" ölçütlerin (Ek-2) iyi bir yönetici seçmek için katılımcılar tarafından değerlendirilmemiş olması bu araştırmanın problemini oluşturmaktadır. Dolayısıyla bu çalışmanın amacı 2021 Yönetmeliğinde işe koşulan ölçütlerin liyakatli yöneticileri belirlemede işlevsel olup olmadığının saptanmasıdır.

Yönetici görevlendirmelerinde ölçütler en temel araçlardır. Bu araç hazırlanırken paydaşların görüşlerinin alınması demokratik, insancıldır ve daha verimli sonuçlar vereceği yadsınamaz bir gerçektir. Yönetici seçmek için ortaya konan ölçütler, iyi bir yönetici seçmek için yeterli ve uygun olmalıdır. Liyakatli ve ehil ve yönetici seçmede yetersiz kalan ölçütler amacına hizmet etmemenin dışında kurumlar için zaman ve emek kaybından öte bir fayda sağlamayacağı açıktır. İyi bir yönetici ya da liyakatli ve ehil yöneticiden kastedilen, yaptığı işi kuramsal ve uygulamada çok iyi bilmenin yanında bu bilgilerinin toplam etkisini artıracak sosyal becerilere (etkili iletişim, problem çözme vb.) sahip olan, alandaki gelişmeleri takip edebilmek ve ayak uydurabilmek için bilgi okuryazarlığı ile birlikte bilişim okuryazarı da olan yöneticilerdir.

Bu araştırmanın liyakatli okul yöneticisi seçme ve görevlendirmede kullanılan ölçütlerin işlevselliğinin saptanmasında ve ilerde yapılacak ölçüt geliştirme çalışmalarında nesnel ölçütlerin tespitine katkı sağlayacağı düşünülmektedir.

YÖNTEM

Mevcut okul müdürü seçme ölçütlerinin liyakatli ve ehil yöneticiler belirlemedeki yeterliliğinin incelendiği bu araştırma, nitel araştırma yaklaşımlarından durum çalışması (case study) deseni ile gerçekleştirilmiştir. Nitel araştırma, bireylerin veya grupların bir olguya dair algılarını, deneyimlerini ve anlamlarını derinlemesine incelemeyi amaçlayan bir yaklaşımdır (Creswell & Poth, 2018). Bu tür araştırmalar, karmaşık sosyal olayları anlamak için araştırmacıya esneklik sağlar. Durum çalışması, bir olguyu veya olgu grubunu sınırlı bir bağlam içinde derinlemesine incelemek için kullanılan bir araştırma desenidir. Bu model, bağlama özgü bilgilerin elde edilmesi ve ilgili süreçlerin detaylı şekilde anlaşılması açısından özellikle kullanışlıdır (Yin, 2018). Bu çalışma, liyakatli ve ehil okul müdürü belirlemede kullanılan ölçütlerin yetkinlik durumunu incelediğinden *durum çalışması* kapsamında değerlendirilmiştir.

Katılımcılar

Araştırmanın katılımcıları, İstanbul'da görev yapmakta olan toplam 28 yöneticiden oluşmuştur. Katılımcıların belirlenmesinde, araştırma sorularını en iyi şekilde yanıtlayabilecek bilgi, deneyim veya özelliğe sahip bireylerden oluşan amaçlı örnekleme ve araştırmanın bağlamını temsil eden farklı özelliklere sahip bireylerin seçilmesini gerektiren (Patton, 2002) maksimum çeşitlilik örneklemesi tercih edilmiştir. Bu yöntemle okul türü (ilkokul, ortaokul, lise) ve mesleki deneyim gibi değişkenler açısından çeşitlilik sağlanmıştır. Katılımcılar arasında hem farklı yöneticilik deneyimine (müdür yardımcılığı yapmış olup olmama gibi) hem de süresine sahip kişiler yer almıştır. Bu çeşitlilik, seçme süreçlerine dair farklı perspektiflerin ve deneyimlerin ortaya konulmasını sağlamıştır. Katılımcıların demografik özellikleri Tablo 3'te gösterilmiştir.

Tablo 3. Katılımcıların demografik özellikleri

Cinsiyet	Öğretim Kademesi	Mesleki Kıdem	Yöneticilik Kıdemi	Branş	Eğitim düzeyi	Bir önceki Görev
E	İlkokul	39	32	Sınıf Öğrt.	Lisans	Müdür
E	Anadolu L.	27	24	Çoğrafya Öğrt.	Lisans	Müdür Başy.
K	Ortaokul	20	2	İngilizce Öğrt.	Lisans	Öğretmen
E	İlkokul	23	13	Din Kültürü Öğrt.	Yüksek L.	Müdür Y.
E	İlkokul	35	15	Sınıf Öğr.	Ön Lisans	Müdür
E	İlkokul	25	24	Sınıf Öğr.	Yüksek L.	Müdür Y.
E	İlkokul	24	18	Sınıf Öğr.	Yüksek L.	Müdür Y.
E	Anadolu L.	44	32	Biyoloji Öğrt.	Lisans	Müdür
E	İlkokul	28	8	Sınıf Öğr.	Yüksek L.	Müdür Y.
E	Fen Lisesi	20	7	İngilizce Öğrt.	Lisans	Müdür Y.
K	Ortaokul	13	3	Matematik Öğrt.	Lisans	Öğretmen
K	Fen Lisesi	12	5	Fizik Öğrt.	Yüksek L.	Müdür Y.
K	Ortaokul	26	8	Teknoloji Tas. Öğrt.	Lisans	Müdür Y.
K	İlkokul	30	26	Sınıf Öğr.	Lisans	Müdür Y.
E	İlkokul	24	8	Sınıf Öğr.	Lisans	Müdür Y.
E	Meslek L.	28	23	Felsefe Öğrt.	Lisans	Müdür Y.
K	Meslek L.	27	2	Biyoloji Öğrt.	Lisans	Öğretmen
E	İlkokul	28	22	Sınıf Öğr.	Yüksek L.	Müdür Y.
E	Meslek L.	32	25	Motor Öğrt.	Lisans	Müdür Y.
E	İlkokul	40	20	Sınıf Öğr.	Lisans	Müdür Y.
E	İlkokul	20	8	Sınıf Öğr.	Yüksek L.	Müdür Y.
K	Meslek L.	28	22	Felsefe Öğrt.	Lisans	Müdür Y.
K	Meslek L.	28	7	Tarih Öğrt.	Lisans	Müdür Y.
E	Meslek L.	28	12	Çoğrafya Öğrt.	Yüksek L.	Müdür
E	Fen Lisesi	29	23	Tarih Öğrt.	Yüksek L.	Müdür
E	İlkokul	18	4	Sınıf Öğr.	Yüksek L.	Öğretmen
E	Ortaokul	32	20	Türkçe Öğrt.	Yüksek L.	Müdür
E	Ortaokul	41	32	Matematik Öğrt.	3 Yıllık E.	Müdür Y.

Veri Toplama Aracı

Araştırmada, katılımcılardan derinlemesine bilgi toplama esnekliği sağlamak (Merriam & Tisdell, 2016) için yarı yapılandırılmış görüşme formu kullanılmıştır. Görüşme formu, mevcut alanyazın taraması ve alan uzmanlarının görüşleri doğrultusunda hazırlanmıştır. Görüşme formunun hazırlanmasında şu adımlar izlenmiştir:

İlgili alanyazın taranarak mevcut okul müdürü seçme süreçleriyle ilgili önemli temalar belirlenmiştir.

Görüşme formu taslağı oluşturulmuş ve eğitim yönetimi alanında uzman akademisyenlerin görüşlerine sunularak kapsam geçerliliği sağlanmıştır.

Pilot uygulama yapılarak soruların anlaşılabilirliği test edilmiş ve gerekli düzenlemeler yapılmıştır.

Formda, mevcut okul müdürü seçme ölçütlerinin uygunluğu/yeterliği üzerine yoğunlaşılmıştır. Formdaki sorular açık uçlu olarak hazırlanmış ve katılımcıların deneyimlerini, düşüncelerini ve önerilerini detaylı şekilde ifade edebilmeleri sağlanmıştır.

İşlem

Görüşmeler, yüz yüze ve çevrimiçi olarak gerçekleştirilmiştir. Görüşme süresi, katılımcıların yanıtlarına göre değişmekle birlikte, ortalama 30-45 dakika sürmüştür. Katılımcıların izni alınarak görüşmeler ses ya da ses ve görüntü kaydına alınmış ve ardından yazıya dökülmüştür. Veri toplama sürecinde, araştırmacı, katılımcıların özgürce düşüncelerini ifade edebileceği bir ortam oluşturmaya özen göstermiştir. Etik kurallara uygun olarak, katılımcılara araştırmanın amacı, süreçleri ve gizlilik ilkeleri hakkında bilgi verilmiş ve bilgilendirilmiş onam alınmıştır. Veriler 2023 Yılının Eylül-Aralık ayları arasında toplanmıştır.

Verilerin Analizi

Toplanan veriler, betimsel analiz ve içerik analizi yöntemleriyle çözümlenmiştir. Betimsel analizde, elde edilen veriler önceden belirlenmiş (Miles, Huberman & Saldana, 2014) okul müdürü seçme ölçütlerine göre kategoriler altında gruplandırılmıştır.

Verilerde yer alan örtük anlamları ve tekrar eden örüntüleri ortaya çıkarmak amacıyla kullanılan (Krippendorff, 2004) içerik analizinde, verilerde yer alan ifadeler, temalara ayrılmış ve temaları oluşturan kodlar saptanmıştır.

Analizler bulgularda sunulurken Tablo 2'de yer alan kategorilere esas alınmıştır. Analizde kullanılan ve Tablo 2'de yer alan kategoriler 2021 Yönetmeliğinde yönetici görevlendirmede esas alınan kategoriler olmasından betimsel analiz; katılımcı ifadelerinden kodların çıkarılması, kodlardan temaya gidilmesi ise içerik analizi kullanmayı gerektirmiştir.

Araştırmanın Geçerliliği ve Güvenirliği

Araştırmanın geçerlilik ve güvenirliği, aşağıdaki uygulamalarla sağlanmıştır:

Geçerlilik

Bu çalışmada, iç geçerliğin (inandırıcılık) sağlanmasına yönelik çok yönlü önlemler alınmıştır. Öncelikle, temel veri toplama aracı olan yarı yapılandırılmış görüşme formunun hazırlanmasında nitel araştırma yöntemlerine ve çalışma alanına hâkim (a) uzmanlardan görüş alınmış ve bu süreç aracılığıyla soruların içerik ve kapsam geçerliği güçlendirilmiştir. Bu kapsamda, iki tane eğitim programları ve öğretim alanından, iki tane eğitim yönetimi ve denetimi alanından en az doktor ünvanına sahip toplam dört öğretim üyesi ile yöneticilikte en az beş yıl deneyime sahip üç okul müdüründen veri toplama aracına ilişkin görüşler alınmıştır. Görüş alma sürecinde uzmanlardan yarı yapılandırılmış görüşme formunu; kapsamı, açıklık ve anlaşılırlığı, uygunluk ve uygulanabilirliği, önyargı ve yönlendirme içermemesi ve etik duyarlılığı yönleriyle incelemeleri istenmiştir. Uzmanlardan gelen geri bildirimler dikkate alınarak veri toplama aracına son şekli verilmiştir. Araştırma süreci boyunca, katılımcılarla (b) uzun süreli ve yoğun etkileşimler kurulmuş; böylece araştırmacının katılımcıları ve çalışma ortamını derinlemesine tanıması sağlanarak, elde edilen verilerin doğruluğu ve güvenilirliği artırılmıştır. Elde edilen bulguların katılımcılar tarafından onaylanmasına olanak tanıyan (c) **katılımcı teyidi (member check)** süreci işletilmiş, bu sayede yorumların ve bulguların doğruluğu katılımcı görüşleriyle desteklenmiştir. Araştırma bulgularının aktarılabilirliğini (dış geçerlik) güçlendirmek amacıyla, katılımcıların görüşlerinden (a) doğrudan alıntılar yapılmış ve okuyucunun kendi yorumlarını geliştirmesine imkân tanınmıştır. Ayrıca, (b) veri toplama aracının hazırlanış süreci ve kullanılan formlar detaylı biçimde sunulmuş, böylelikle çalışmanın şeffaflığı ve tekrarlanabilirliği artırılmıştır. (c) Çalışma grubuna ilişkin sosyodemografik ve mesleki özellikler açık biçimde raporlanmış, araştırmanın amacına uygun olarak **amaçlı örnekleme** yöntemi kullanılarak örneklem seçimi gerçekleştirilmiştir. Tüm bu uygulamalar, çalışmanın bulgularının benzer bağlamlara aktarılabilirliğini ve dış geçerliğini desteklemiştir.

Güvenirlik

Kayıt cihazı ile veri kaybının önlenmesi ve bulguların yorum yapılmadan verilmesi suretiyle çalışmanın dış güvenirliği sağlanmıştır. Kodlama sürecinde, farklı bir araştırmacı ile bağımsız olarak kodlama yapılmış ve kodlayıcılar arası uyum oranı hesaplanmıştır Uyum oranı %80'in üzerinde bulunmuş ve bu şekilde araştırmanın dış güvenirliği sağlanmıştır.

BULGULAR

Bu kısımda Millî Eğitim Bakanlığına Bağlı Eğitim Kurumlarına Yönetici Seçme ve Görevlendirme Yönetmeliğindeki ölçütlerin *iyi bir yönetici* seçmek için yeterli olup olmadığına ilişkin katılımcı görüşlerine yer verilmiştir. Yönetici olarak görevlendirileceklerde aranan *genel şartların* iyi bir yönetici seçmek için yeterli ya da uygun olup olmadığına ilişkin katılımcı görüşleri Tablo 4'te özetlenmiştir.

Tablo 4. Yönetici Olarak Görevlendirileceklerde Aranan Genel Şartların Uygunluğuna/Yeterliğine İlişkin Katılımcı Görüşleri

Kategori	Tema (f)	Kod
Yönetici Genel Şartlar	Yeterli ya da Uygun (11)	Doğrudur, Uygun buluyorum (K1) Genel Şartlar Yeterli (K7, K10, K17, K24, K27, K28) Katılıyorum (K14)
	Kısmen Yeterli/Kısmen Uygun (7)	Yeterlidir; fakat ekleme yapılması gerekir (K3) Öğretmenlikte-müdür yardımcılığında en az 3-5 yıl çalışmış olma şartı eklenmeli (K9, K21) Yazılı sınav ve mülakat içeriklerinin tekrar düzenlenmesi (K11) Lisansüstü eğitim şartı konulmalı (K19, K22) Meslek okullarında şeflikten sonra müdürlüğe geçilmeli (K19)
	Yetersiz ya da uygun değil (10)	Eğitim yöneticileri ile ilgili üniversitede bir bölüm olmalı ve bu bölüm mezunları yönetici olmalı (K2) Çok ilgisiz konular var daha çok eğitimle ilgili kriterler konulmalı (K4) Yöneticiler tekrar sınava girmek için dört yıl beklememeli, istediği zaman tekrar girmeli (K6, K13) Sınavla yönetici olunmaz (K5, K8, K15, K20) Çok aşamalı ve duyarlı bir seçme yöntemi olmalı (K18)

Tablo 4'te görüldüğü gibi 28 katılımcıdan 11 tanesi genel şartları yeterli bulurken 10 tanesi yetersiz; yedi tanesi kısmen yeterli bulmuştur. Genel şartların yeterli olduğunu belirten katılımcıların bazılarının görüşleri şöyledir;

> *Tabii ki bu yönetmeliğin 5. Maddesi genel itibarıyla doğrudur, uygun buluyorum (K1). Genel şartlar bence yeterlidir (K7, K10, K17, K24, K27, K28). Katılıyorum, sadece eğitim sertifikasına sahip olmak ile ilgili bir madde var böyle bir belgemiz yok, almak için de bir eğitim seçeneğimiz olmadığı için orda bir boşluk var (K14).*

Yönetici görevlendirmede aranan genel şartları *kısmen yeterli* bulan katılımcılardan bazılarının görüşleri şöyledir;

> *Evet, kriterler yeterlidir; fakat ekleme yapılması gerekir(K3), Genel şart maddelerine öğretmenlikte-müdür yardımcılığında en az 3-5 yıl çalışmış olma şartı eklenmelidir (K9, K21). Kısmen katılıyorum (K7, K8). Yazılı sınav ve mülakat içeriklerinin tekrar düzenlenmesi gerekir örneğin 2019'da Türkçe, Matematik soruları vardı kaldırıldı sadece Tarih, Coğrafya, Genel Kültür, Anayasa kondu; bu konular o kadar yoğun olmamalı, Eğitim Bilimleri, Matematik, Türkçe, yazım kurallarının daha ağırlıklı olması gerektiğini düşünüyorum, mülakatı da anlamsız buluyorum(K11). Yüksek lisans mezunu olma şartı konulmalı artık lisans yetmiyor, hatta müdürlükte doktora şartı konulmalı, öğretmen olarak çalışılan süre uzun tutulmalı 1-2 yıl çok kısa, öğretmenlik, müdür yardımcılığı, meslek okullarında şeflik, sonrasında müdürlüğe geçilmeli bu kademelerden geçilerek gelinmezse aşağı kademeleri anlayamazsınız, meslek okullarındaki yöneticiler meslek dersi öğretmeni olmalı(K19.) En az yüksek lisans mezunu olma şartı eklenebilir kırsal bölgedeki okullarda çalışan yöneticilere yüksek lisans yapmaları zor olacağı için özel şartlar olabilir(K22).*

Genel şartları *yetersiz* bulan ya da *uygun* olmadığını düşünen katılımcıların bazılarının görüşleri ise şöyledir;

> *Yönetici görevlendirmedeki genel şartlar bölümünün tamamen kaldırılmasını, eğitim yöneticileri ile ilgili üniversitede bir bölüm olmasını, eğitim yönetimi alanı mezunlarının okullarda yönetici olmasını öneriyorum. Ben okul müdürü olarak muhasebeden, inşaattan*

psikolojiden anlamak zorundayım ama yaşayarak, deneyimleyerek öğreniyorum, böyle bir okulda böyle bir bölümden mezun olsam bunların okulda eğitimini alabilirim (K2). Hayır, yeterli görmüyorum çok ilgisiz konular var daha çok eğitimle ilgili ölçütler konulmalı(K4). Kanaatim sınav yapılmaması. Sınavı kazanıp atandıktan sonra 4 yıl boyunca sınava tekrar giremiyorsunuz bu büyük bir eksiklik, tekrar sınava girme hakkı verilmeli (K13). Uygun bulmuyorum. Sınavla yönetici atamaya karşıyım, hatta bir dönemde sınavda başarı elde eden yöneticilerin birçoğu yöneticiliği yapamadı, bıraktı. Asıl aranması gereken insan ilişkileri, öğretmen-öğrenci diyaloğunun kurulabilmesi olmalı. Bu yönden eksik olan bir kişinin mevzuatı ezberleyerek sınavda başarılı olması iyi bir yönetici olması için yeterli değildir (K5).

Müdür olarak görevlendirilecek adaylarda aranan *özel şartlara* ilişkin katılımcı görüşleri Tablo 5'te özetlenmiştir.

Tablo 5. Müdür Olarak Görevlendirileceklerde Aranacak "Özel Şartlara" İlişkin Katılımcı Görüşleri

Kategori	Tema	Kod
Müdür Özel Şartlar	Yeterli ya da Uygun (6)	Okul türüne göre müdür atanması çok uygun (K1) Uygundur (K3, K4, K15, K16, K17)
	Kısmen Yeterli/Kısmen Uygun (18)	Mesleki branşlarda da uygunluk aranmalı (K2) Müdür yetkili öğretmenlikten daha az puan alınmalı (K7) Üst düzey yöneticilikten direk müdürlüğe atama olmamalı (K8, K9, K11, K13, K21, K22, K23, K24, K27) Alt yönetim kadrolarında 5'er yıl çalışma şartı olmalı (K18) İngilizce, Din Kültürü branşları haksız avantajlı (K18)
	Yetersiz ya da uygun değil (4)	Mülakatları güvenilir bulmuyorum (K5, K25, K26) Sınav ve mülakat olmamalı, lider alttan pişerek gelmeli, okulda kendi branşının olma şartını olmamalı (K20)

Tablo 5'te görüldüğü gibi katılımcılardan altı tanesi müdür olarak görevlendirileceklerde aranan şartları *yeterli* bulurken dört tanesi *yetersiz*; 18 tanesi ise *kısmen yeterli* bulmuştur. Yönetici görevlendirmede müdür olarak görevlendirileceklerde aranan şartları *yeterli* olduğunu belirten katılımcıların bazılarının görüşleri şöyledir;

Burada okul türüne göre uygun olan müdürün atanması sağlanmış bu bence çok uygun (K1). Evet, uygundur (K3, K4, K15, K16, K17).

Müdür olarak görevlendirileceklerde aranacak özel şartları *kısmen yeterli* bulan katılımcılardan bazılarının görüşleri şöyledir;

Meslek liselerine atanma sırasında ilgili branşlara sahip olmak şartını uygun buluyorum ancak şöyle bir problem oldu orada ön muhasebe mezunu meslek dersi öğretmeni ama motor gibi bölümlerden oluşan bir meslek lisesine müdür olabildi, amacına ulaşmadı (K2). Müdür yetkili çalışan öğretmenlere hem de çok az sayılı öğrencilerle çalıştıkları halde puan veriliyor bu puanın haksız olduğunu düşünüyorum, bu bölümde müdür yetkili öğretmenlere daha az puan verilmeli, diğer kriterlere katılıyorum (K7). Öğretmenlik, müdür yardımcılığı, müdür başyardımcılığı sonrasında okul müdürlüğüne geçmesi gerekir, şube müdürü veya daha üst yöneticiliklerden direk okul müdürlüğüne atanması doğru değil (K27). Öğretmenlikten müdürlüğe geçilmemeli 5 yıl öğretmenlik, 5 yıl müdür yardımcılığı yaptıktan sonra mümkünse farklı farklı okullarda çalışıp okul müdürü olunabilmeli, atanmak istediği okulda alanında okutacağı ders olması şartı evet uygun ama bu durumda bazı branşlar çok şanslı oluyor örneğin İngilizce, Din Kültürü öğretmenleri her tip okula yönetici olabiliyorlar, burada sınıf öğretmenlerine artı puan verilmesi, durumu biraz kurtarıyor ama yine de bu artı puan daha fazla olmalıdır (K18).

Müdür olarak görevlendirileceklerde aranacak özel şartları *yetersiz* bulan ya da *uygun olmadığını düşünen* bazı katılımcıların görüşleri şöyledir;

Kendi alanı ile ilgili bir okula atanması konusunda da bir şarta gerek yok çok özel durumlar için geçerli olabilir, mülakat aşamasında da liyakate önem verilmesi gerektiğini düşünüyorum orada da farklı şeyler oluyor (K25). Sınav ve mülakat olmamalı, lider alttan pişerek gelmeli, liderliğini ispatlamış olması yeterli ayrıca daha önce yöneticilik yapmış kişilere neden bir daha sınav yapılıyor zaten bu kişi kendini ispatlamıştır. İlk kez atanacak yöneticilerin de liderliğe uygunluğu, alt kademelerde ne kadar piştiği, çalıştığı değerlendirilebilir. Atanacağı okulda kendi branşının olma şartını da uygun bulmuyorum yöneticilik farklı bir şeydir, her okulda her okul tipinde aşağı yukarı yapılan şeyler aynıdır böyle bir şart gerekli değildir(K20).

Müdür başyardımcısı ve müdür yardımcısı olarak görevlendirileceklerde aranacak özel şartlara ilişkin katılımcı görüşleri Tablo 6'da gösterilmiştir.

Tablo 6. Müdür Başyardımcısı ve Müdür Yardımcısı Olarak Görevlendirileceklerde Aranacak Özel Şartlara İlişkin Katılımcı Görüşleri

Kategori	Tema	Kod
Müdür Başyardımcısı ve Müdür Yardımcısı Özel Şartlar	Yeterli ya da Uygun (5)	Ölçütler yeterlidir (K3, K4, K12, K24, K28)
	Kısmen Yeterli/Kısmen Uygun (19)	Öğretmenlikte geçirilen süre şartı çok az (K2, K7, K9, K11, K13, K15, K17) Müdür vekilliği de kabul edilmeli (K10) Kendi branşının olduğu okula atanma şartı esnetilmeli (K10)
	Yetersiz ya da uygun değil (4)	Kendi branşının olduğu okula atanma şartı olmamalı (K6) Okulda hem kadın hem erkek müdür yardımcısı olmalı (K8) Müdür inhasıyla müdür yardımcısı atanmalı (K8, K25) Atamalar asaleten olmalı, iller arası atamalarda unvanıyla gidebilmeli (K8, K6).

Tablo 6'da görüldüğü gibi araştırmaya katılan 28 katılımcıdan 5 tanesi müdür başyardımcısı ve müdür yardımcısı olarak görevlendirileceklerde aranacak özel şartları *yeterli* bulurken, 4 tanesi *yetersiz*; 19 katılımcı ise *kısmen yeterli* bulmuştur. Müdür başyardımcısı ve müdür yardımcısı olarak görevlendirileceklerde aranacak özel şartların *yeterli* olduğunu belirten katılımcıların bazılarının görüşleri şöyledir;

Benim için uygundur, yeterli buradaki kriterler (K3, K4, K12, K24, K28).

Müdür başyardımcısı ve müdür yardımcısı olarak görevlendirileceklerde aranacak özel şartları *kısmen yeterli* bulan katılımcılardan bazılarının görüşleri şöyledir;

Burada en az 2 yıllık öğretmenlik süresi çok az, öğretmenlikte daha uzun süre çalışılmalı müdür yardımcılığında daha uzun süre çalışılmalı, müdür yardımcılığında da staj dönemi olmalı 5 seneye kadar düşünülebilir bu süreler (K2). Müdür vekilliğini kabul etmiyor; müdür yetkili öğretmeni kabul ediyor başıma geldiği için biliyorum müdür vekilliğinden değerlendirmeye alınması lazım. Kendi alanının olduğu okulda atanması doğru bir karar ancak özel durumdaki okullar için çok şart olmamalı anaokulu, meslek okulları gibi (K10).

Müdür başyardımcısı ve müdür yardımcısı olarak görevlendirileceklerde aranacak özel şartları *yetersiz* bulan ya da *uygun olmadığını düşünen* bazı katılımcıların görüşleri şöyledir;

Kendi alanı ile ilgili bir okula atanması konusunda da bir şarta gerek yok çok özel durumlar için geçerli olabilir (K6). Benim okulumda 3 tane bayan müdür muavini var erkek öğrenciler için erkek müdür yardımcısı olması gerekir, müdür yardımcısı müdür inhası ile atanmalı, müdür kendi ekibini kurmalı, bu durumun adam kayırmacılık sakıncası olabiliyor ancak sendikalar vb. kurumlar bunun önüne geçmeli. Müdür yardımcısı görevlendirilmesine de karşıyım asaleten olmalı iller arası atamalarda da unvanıyla gidebilmeli (K8).

Yönetici olarak görevlendirileceklerin aldıkları *eğitimlerden elde edilen puanlara* ilişkin katılımcı görüşleri Tablo 7'de gösterilmiştir.

Tablo 7. Eğitimlerden Elde Edilen Puanlara İlişkin Katılımcı Görüşleri

Kategori	Tema	Kod
Eğitimler	Yeterli ya da Uygun (7)	Aynen uygulanabilir (K3, K4, K13, K16, K19, K26) Yüksek lisans ve doktorayla ilgili puanlamaları uygun buluyorum (K11)
	Kısmen Yeterli/Kısmen Uygun (11)	Sadece kendi alanında ikinci bir üniversiteden puan almalı (K1, K10, K14, K15, K20) Coğrafi farklılıklardan kaynaklanan eşitsizlik giderilmeli (K5) Lisansüstü eğitimler alanında ve tezli olmalı (K18, K25) Doktoradan alınan puan daha yüksek olmalı (K24) Lisansüstü eğitimli yöneticiler de artırımlı ek ders ücreti almalı (K24)
	Yetersiz ya da uygun değil (10)	Lisansüstü eğitimler yöneticiliğe başlamadan tamamlanmalı (K2) Hitabet, diksiyon, liderlik özelliklerinin ölçüldüğü bir staj dönemi ardından yöneticiliğe geçilmeli (K2) Yüksek lisans diplomalarını güvenilir bulmuyorum (K2) Coğrafi farklılıklardan dolayı bu kriter olmamalı (K6) Müdür inhası yeterli olmalı (K23)

Tablo 7'de görüldüğü gibi yedi katılımcı eğitimlerden *alınan puanları yeterli* bulurken, 10 tanesi yetersiz, 11 tanesi *kısmen yeterli* bulmuştur. Yönetici görevlendirmede eğitimlerden elde edilen puanların *yeterli* olduğunu belirten katılımcıların bazılarının görüşleri şöyledir;

> *Bu bölüm uygun bence, aynen uygulanabilir (K13). Yüksek lisans ve doktora ile ilgili alınan puanlamaları uygun buluyorum (K11). Evet, katılıyorum, zaman içerisinde döneme göre güncelleme yapılmalı (K16).*

Eğitimlerden alınan puanları *kısmen yeterli* bulan katılımcılardan bazılarının görüşleri şöyledir;

> *İkinci bir üniversiteye puan veriliyor, burada sadece kendi alanında eğitimle ilgili ikinci bir üniversite okursa puan almalı. Kendi alanında yapılan yüksek lisanssa daha yüksek puan verilmeli kendi alanında ve eğitim yönetimi alanında yaptığı doktoraya daha yüksek puan verilmeli (K1). Buradaki puanlar yeterli teşvik görevini üstleniyor ancak dezavantajlı durumda olan yerler bu imkânlara sahip değiller kırsal bölgede çalışan arkadaşlarımızın bu eğitimleri alma şansları çok az, o kişilere de farklı puanlama başlığı altında artı puan verilerek dengelenebilir. Dezavantajlı bölgelerde, okullarda çalışan yöneticilere ek puan verilebilir, İstanbul içinde bile okul tiplerine göre bu imkânlar değişiyor(K5). Tezsiz yüksek lisanslardan puan almamalı çünkü para karşılığında, emek verilmeden, derslere katılmadan yapılabiliyor şu an, tezli yüksek lisans yapmak maddi olarak da emek olarak da daha zor çok daha yüksek puan almalı (K18). Doktora puanını çok az buluyorum daha yüksek olmalı (K24).*

Yönetici görevlendirmede eğitimlerden alınan puanları *yetersiz* bulan ya da *uygun olmadığını düşünen* bazı katılımcıların görüşleri ise şöyledir;

> *Hayır, uygun bulmuyorum, mevcut şartlar altında yöneticilikle, yüksek lisans-doktora birlikte yapılamıyor. Yöneticiliğe başlamadan önce yapılmalı bu çalışmalar. Hitabet, diksiyon, liderlik özelliklerinin ölçüldüğü bir staj dönemi ardından yöneticiliğe geçilmeli. Hemen ardından da yüksek lisans doktora yapılabilir, idari izin verilebilir iki iş birden olmaz (K2). Ben burayı uygun bulmuyorum bakanlık kendi bünyesinde yetiştirmeli, okul yöneticiliği eğitimlerini bakanlık kendisi verebilir Türkiye şartlarında bölgesel farklar var İstanbul'daki yöneticiler üniversitelere rahatlıkla ulaşırken Anadolu'da çalışan arkadaşlarımızın bu imkânlara ulaşma şansları yok (K6). Bu bölüme de karşıyım hatta isim vermeyeceğim bir üniversite bize öğrenci bulun yüksek lisans diploması verelim teklifinde bulundu, şimdi bu doğru mudur? 4-5 bin liraya bu diplomaları satın aldılar ve bundan puan elde edecekler (K28). İkinci bir üniversiteden puan alması uygun bulmuyorum lisans ve yüksek lisans ve doktora konusunda da kendi alanında yapılması gerektiğini düşünüyorum (K12). Böyle bir puanlama yapılmamalı yüksek lisans ya da*

doktora yapmış olup iyi bir lider olmayan çok kişi tanıyorum. Tecrübeyi önemsiyorum yüksek lisans doktora çok gerekli bulmuyorum (K27). Katılmıyorum. Kadın ve erkek açısından bir eşitsizlik söz konusu erkek arkadaşlarımız yüksek lisanslarını, doktoralarını yaparken ben kadın olduğum, çocuklarım olduğu ve evde de artı sorumluluklarım olduğu için çok istememe rağmen bunların hiçbirini yapamadım. Buradaki puanlamada kadınlar için pozitif ayrımcılık sağlanmalı. Ayrıca o zamanlarda şimdiki kadar kolay da değildi uzaktan eğitim yoktu buranın hiç puanlanmaması lazım(K23).

Yönetici olarak görevlendirileceklerde *hizmet sürelerinden* elde edilen puanlara ilişkin katılımcı görüşleri Tablo 8'de gösterilmektedir.

Tablo 8. Hizmet Sürelerinden Elde Edilen Puanlara İlişkin Katılımcı Görüşleri

Kategori	Tema	Kod
Hizmet Süreleri	Yeterli ya da Uygun (4)	Evet, orantılı, doğru buluyorum, katılıyorum (K11, K16, K21, K26)
	Kısmen Yeterli/Kısmen Uygun (13)	Öğretmenlikte geçen surenin tamamı değerlendirilmeli (K1) 4 yıldan sonra puanlar %50 düşürülmemeli, tam puan almalı (K3, K4, K9, K13, K14, K27) Stajyer öğretmenler puanlamasından her okul yararlanamıyor (K20)
	Yetersiz ya da uygun değil (11)	Tecrübe arttıkça dezavantajlı duruma düşürüyor (K2, K5, K6, K8, K10) İkili eğitim yapılmasına puan verilmemeli (K7) Bu kriterler hiç olmamalı (K12)

Tablo 8'de görüldüğü gibi katılımcıdan dört tanesi hizmet sürelerinden elde edilen puanları *yeterli* bulurken, 11 tanesi *yetersiz*, 13 tanesi *kısmen yeterli* bulmuştur. Yönetici görevlendirmede hizmet sürelerinden elde edilen puanları *yeterli* ya da uygun bulan katılımcıların bazılarının görüşleri şöyledir;

Evet, orantılı, doğru buluyorum, katılıyorum (K11, K16, K21, K26).

Hizmet sürelerinden elde edilen puanları *kısmen yeterli* bulan katılımcılardan bazılarının görüşleri şöyledir;

İlk 4 yıl tam puan verilip; sonrasında %50 düşürülerek verilmesi genç arkadaşlarımızın önünü açmak için uygulanıyor ama öğretmenlikte geçen surenin tamamı değerlendirilmeli (K1). Bence 4 yıldan sonra puanların %50 düşürmesini kesinlikle karşıyım çalıştığı süre kadar kısma tam puan almalı (K3). Kendi alanında yaptığı çalışmaların ek puan getirmesi gerektiğini düşünüyorum, okuldaki stajyer öğretmenlerle ilgili de okul yöneticilere puan verilmesine gerek yok, adil değil, her okul bu fırsattan yararlanamayabilir (K20).

Hizmet sürelerinden elde edilen puanları *yetersiz* bulan ya da *uygun olmadığını düşünen* bazı katılımcıların görüşleri şöyledir;

Bu bölümü kesinlikle uygun bulmuyorum, tecrübe arttıkça dezavantajlı duruma düşürüyor, bunun tam tersi olmalı çalıştığı her yıl için tam puan olmalı, kişinin yetersizliği varsa zaten o görevden alınmaları gerekir (K10). Hizmet süreleri ilgili puan alınmamalı, yeni mezun olup genç öğretmenler de çok başarılı olabilir onların önünün kesilmemesi lazım (K12).

Katılımcıların *akademik ve mesleki deneyimden* alınan puanlara ilişkin görüşleri Tablo 9'da gösterilmiştir.

Tablo 9. Akademik ve Mesleki Deneyimlerden Elde Edilen Puanlara İlişkin Katılımcıların Görüşleri

Kategori	Tema	Kod
Akademik ve Mesleki Deneyim	Yeterli ya da Uygun (6)	Kriterler olmalı, puanlamaları da uygun buluyorum (K3, K10, K11, K17, K18) Katılıyorum (K12)
	Kısmen Yeterli/Kısmen Uygun (16)	Uygun ama yeterli zaman verilmeli (K3) Puanlamada tüm hizmet-içi eğitimler dikkate alınmalı (K4) Coğrafi konum ve eğitim kademesi farkı (K6) Makalelere güven sorunu (K6, K7, K14, K16, K24) Yöneticiliğe katkısının ve ilgilisinin olmaması (K7, K14, K16, K24, K10, K20, K21)
	Yetersiz ya da uygun değil (6)	Haksız rekabete neden olması (K1, K23) Bölgesel farklılıklar ve adaletsizlik (K5) Yöneticilik niteliği ile ilgili olmaması (K8) Kapsam sorunu (K26)

Tablo 9'da görüldüğü gibi altı katılımcı akademik ve mesleki deneyimlerden elde edilen puanları *yeterli* bulurken 6 tanesi *yetersiz;* 16 tanesi *kısmen yeterli* bulmuştur. *Puanların yeterli* olduğunu belirten katılımcıların bazılarının görüşleri şöyledir;

> *Evet, akademik çalışmalara yönlendiren kriterler olmalı, puanlamaları da uygun buluyorum (K11). Bu bölüme katılıyorum, puanlamaları da uygun buluyorum(K12).*

Yönetici görevlendirmede akademik ve mesleki deneyimlerden elde edilen puanları *kısmen yeterli* bulan katılımcılardan bazılarının görüşleri şöyledir;

> *Uygun buluyorum ama işi yürütürken zaman ihtiyacı olacak, kolaylıklar sağlanmalı(K3). Evet, bu bölümü uygun buluyorum, ama hizmet içi eğitimle ilgili 30 tane hizmet içi eğitim almışsınız bir tanesine puan veriyor en az yarısına verilmeli (K4). Buna kısmen katılıyorum, ama bazı okullarda hiçbir şekilde stajyer öğretmen olma şansı yok kurum türüne göre bir puanlama yapılmalı. Makalelerle ilgili de gerçekten kişinin kendisini yazıp yazmadığı konusunda tereddütlerim var çünkü çeşitli şeyler duyuyoruz örneğin para karşılığında hiç emek vermeden başkasına yazdırılan makaleler var(K6). Makaleyi kendi yazarsa emek isteyen bir durumdur, buradan puan alabilir. Üniversitede ders okutmasından puan alınmamalı bunun yöneticilikle bir alakası yok. Yine okulda stajyer öğretmen okul yöneticilerinin başarısı ile ilgili bir durum değil buradan da puan alınmamalı (K16). Eğitim yöneticiliğinden puan almanın anlamlı olduğunu düşünmüyorum okul müdürünün ya da müdür yardımcısı bir çabası yok burada yani ilçeyle aranız iyi değilse okulunuzda seminer verilmiyor, adil değil (K21). Stajyer öğretmenin bulunduğu okullarda sadece müdürüne puan verilmesi konusunda kararsızım, eğitim görevlisi olmuşsak buradan puan alınabilir; hizmet içi eğitimlerimizden puan alınabilir…(K20).*

Akademik ve mesleki deneyimlerden elde edilen puanları *yetersiz* bulan ya da *uygun olmadığını düşünen* bazı katılımcıların görüşleri ise şöyledir;

> *Adaletsiz buluyorum çünkü müdürün başarısıyla okulda stajyer öğretmen olamıyor bazı okullarda oluyor bazıları da olamıyor, bu haksız bir rekabet bu bölümden hiç puan verilmemeli. Mesleki deneyim ile ilgili kitap yazma yok bu bölümde eğitim alanında yazılan kitaba, çıkarılan dergiye gazeteye ek puan verilmeli(K1). Sosyal kültürel yapı bölgelere göre değiştiğinden bazı yönetici arkadaşımız bu imkânları ulaşamadığı için adaletsizlik oluyor, dezavantajlı okullarda çalışan öğretmenler yöneticiler bu imkânlara ulaşamayabilirler (K5). Bu bölüme de karşıyım makale yazmak yöneticilikte kaliteyi arttırmaz(K8). Okuldaki stajyer öğretmenler konusunda da okul müdürüne hiç puan verilmemeli buradaki bütün iş yükünü müdür yardımcılarım yükleniyor öğretmenler yükleniyor(K23). Yetersiz buluyorum makale tamam ama kongrelerde bildiri sunmak, katıldığı kongreler, çalıştaylar değerlendirmeye alınmalı stajyer öğretmenlerle ilgili sadece müdüre puan verilmemeli müdür yardımcısına da puan verilmeli (K26).*

Yönetici olarak görevlendirileceklerde *kurum geliştirme deneyiminden* elde edilen puanlara ilişkin katılımcı görüşleri Tablo 10'da gösterilmiştir.

Tablo 10. Kurum Geliştirme Deneyiminden Elde Edilen Puanlara İlişkin Katılımcı Görüşleri

Kategori	Tema	Kod
Kurum Geliştirme Deneyimi	Yeterli ya da Uygun (7)	Katılıyorum (K13, K16, K23, K26, K27) Başarılı buluyorum, özellikle patent alma konusunda (K24)
	Kısmen Yeterli/Kısmen Uygun (10)	Marka tescili tüm okul tiplerine uygun değil (K2, K7, K21) Dezavantajı okullara da farklı bir alandan puan eklenebilir (K3) Patent almak çok zor ve masraflı tümüne puan verilmeli (K19, K17) Puanlama uygulanırken ilçe ve iller arasında farklılıklar oluyor (K18)
	Yetersiz ya da uygun değil (11)	Eşitlik ilkesine aykırı (K25) Çevresel faktörler nedeniyle bu imkândan bazı okullar faydalanamıyor (K6, K9, K11) Adaletli bulmuyorum (K8)

Tablo 10'da görüldüğü gibi katılımcılardan yedisi kurum geliştirme deneyiminden elde edilen puanları *yeterli* bulurken, 11 tanesi *yetersiz;* 10 tanesi ise *kısmen yeterli* bulmuştur. Kurum geliştirme deneyiminden elde edilen puanların *yeterli* olduğunu belirten katılımcıların bazılarının görüşleri şöyledir;

> *Katılıyorum (K13, K16, K23, K26, K27). Uygun buluyorum (K22). Bu bölümü başarılı buluyorum özellikle patent alma konusunda (K24).*

Kurum geliştirme deneyiminden elde edilen puanları *kısmen yeterli* bulan katılımcılardan bazılarının görüşleri şöyledir;

> *Kısmen uygun buluyorum marka tescili meslek liselerini ilgilendiriyor. Anadolu liselerine uygun değil. Projelerle ilgili de işin temelini öğretmen oluşturuyor, okul müdürünün bir emeği yok. Proje okullarındaki öğretmenler seçilerek alındığı için oradaki okul müdürü avantajlı duruma geçiyor (K2). Burada adaletsizlik olduğunu düşünüyorum, örneğin meslek liselerinde çalışanlarla genel liselerde çalışanlar arasında adaletsiz bir puanlama oluyor ya da ilkokullardakiler ile ortaokullardakilerle. Şartları eşitlemek adına dezavantajı okullara da farklı bir alandan puan getirilebilir (K3). Uygulanması zor, patent almak çok masraflı…. (K19).*

Kurum geliştirme deneyiminden elde edilen puanları *yetersiz* bulan ya da *uygun olmadığını düşünen* bazı katılımcıların görüşleri ise şöyledir;

> *Bazı maddeler özellikle meslek liselerini, fen liselerini, güzel sanatlar lisesine ilgilendiriyor, temel eğitimde yöneticilere katkı sağlayamıyor. (K1). Bu bölüme de katılmıyorum örneğin bizim okulumuzda, merkezi bir okul olduğu için, eğitimler sürekli bizde yapılıyor. Biz eğitim yöneticiliği ya da eğitmenlik görevi yaptığımız için puan alıyoruz ama birçok okul çevresel faktörler nedeniyle bu imkândan faydalanamıyor yani burada adalet yok patent ve proje konusunda da kurumlar arasında bir çevresel faktörler nedeniyle adaletsizlik olduğunu düşünüyorum (K9). Bu bölümü de yanlış buluyorum, adaletli bulmuyorum, her okul buradaki imkânlara ulaşamıyor okullar arasında fırsat eşitliği yok. Proje konusunda da o kadar basit çalışmalar yapılabiliyor ki bunlar proje olmaz burada kayda değer gerçekten önemli bir durumu ortaya konmadığı sürece yapılan projelere proje olarak görmüyorum ve bundan da puan alınmamalı işi gücü bıraktık öğretmenlere baskı yapıyoruz proje hazırla, proje hazırla (K8).*

Okul geliştirme deneyiminden elde edilen puanlara ilişkin katılımcı görüşleri Tablo 11'de gösterilmiştir.

Tablo 11. Okul Geliştirme Deneyiminden Elde Edilen Puanlara İlişkin Katılımcıların Görüşleri

Kategori	Tema	Kod
Okul Geliştirme Deneyimi	Yeterli ya da Uygun (2)	Katılıyorum (K19, K26)
	Kısmen Yeterli/ Kısmen Uygun (8)	Puan amaçlı öğrenci transferleri oluyor (K3) Öğrencinin kendisinin yaptığı projelerden puan alınmalı (K16) Yöneticinin başarısını göstermez (K20) İş yüküne göre puanlama değiştirilmeli (K23)
	Yetersiz ya da uygun değil (17)	Okullar arası eşitsizlik vardır (K1, K6, K7, K14) Sadece son 4 yıl için puan verilmemeli, suiistimale açık (K4, K12, K27) Coğrafi eşitlik yok (K5) Kurslar maaş kapsamında olmalı (K8) Projelerden tüm yöneticiler puan almalı (K15)
	Kararsız	Kararsızım (K13)

Tablo 11'de görüldüğü gibi katılımcıdan iki tanesi okul geliştirme deneyiminden elde edilen puanları *yeterli* bulurken; 17 tanesi *yetersiz;* sekiz tanesi ise *kısmen yeterli* bulmuştur. Bir katılımcı ise *kararsız* kalmıştır. Yönetici görevlendirmede okul geliştirme deneyiminden elde edilen puanların *yeterli* olduğunu belirten katılımcıların bazılarının görüşleri şöyledir;

Katılıyorum (K19, K26).

Okul geliştirme deneyiminden elde edilen puanları *kısmen yeterli* bulan katılımcılardan bazılarının görüşleri şöyledir;

DYK çalışmaları her okulda olmuyor, adaletli değil. Yarışmalarda ilk üçe girmiş öğrenciler üzerinden de puan alıyoruz yine proje okullarının avantajlı olduğu bir durum var burada. (K2). Dereceye girmiş öğrencilerin transferleri oluyor. Aynı çocuk yıl içerisinde 5-6 tane okula nakil gidip geliyor bunları duyuyoruz, suistimale açık bir bölüm burası, dezavantajlı okullarda bu tarz öğrenciler bulmak zordur (K3). Yönetici bu çalışmalarda görev alıyorsa evet ek puan alınmalı, kısmen katılıyorum yönetici dereceye giren öğrenciler de bilfiil görev almışsa puan almalı ailenin çabası ile olan başarılardan puanlama olmamalı (K16). Dereceye giren öğrencilerde de bir adaletsizlik var sosyoekonomik olarak üst düzey bir ilçedeki okulda çalıştığınızda bu tarz öğrencilere çok kolay ulaşabiliyorsunuz burada da bu anlamda bir adaletsizlik var (K18). İYEP, DYK, evde - hastanede eğitim, ders dışı eğitim her okulda bunlara öğrenci çıkmayabilir yöneticinin başarısına göstermez böyle bir puanlama yapılmamalı dezavantajlı okullar buradan zararlı çıkar (K20). Buradaki puanlamalar çok az ve neden birer tanelerine puan veriliyor her yıl için verilmeli eğitim verene neden yöneticisine de aynı puan veriliyor burada da iş yüküne göre puanlama değiştirilmeli (K23).

Okul geliştirme deneyiminden elde edilen puanları *yetersiz* bulan ya da *uygun olmadığını düşünen* bazı katılımcıların görüşleri ise şöyledir;

İYEP-DYK örneğin bizde uygulaması yok çocuklarımızın tamamı başarılı biz buradan puan alamayacağız demektir. Bence İYEP'te öğrencisi olan müdürün puanını düşürmesi gerekir niye bu kadar öğrenciye daha önceden altyapı oluşturup bu çocukların sınıf seviyesinde yetişmesini sağlamadınız? Yarışmalarda eğer bir okul kendi takımını kurumuşsa kendi takım ile yerel ya da uluslararası başarı almışsa okul yöneticilerine puan verilmelidir. Ama kişi kendi bireysel gelişimi sonunda bir başarı elde diyorsa bu durumda okul yöneticilerine kesinlikle puan verilmemelidir. Destek eğitim çalışmasından puan alınmamalı, burada öğretmenin emeği vardır (K14). İYEP, DYK, evde eğitim, hastanede eğitim suiistimale açık aslında. Okulunda İYEP öğrencisi çıkmadığında zorlamayla bir tane çıkartıp onayları alıp kursu açıyor sonra kapatıyor. Dereceye girmiş öğrencilerle ilgili de suiistimaller var (K10). Her okulda uygulanacak bir proje değil, adaletli olmuyor, uluslararası yarışmalarda dereceye giren ya da ulusal öğrencilerde de çeşitli hileli konular duyuyoruz derecesi olan bir öğrencinin okullar arasında nakil olarak

gezmesi gibi dezavantajlı okullardan bu tarz derece yapan öğrenciler çıkmaz burada da bir dezavantajı durum var (K12). Bu bölüme katılmıyorum dezavantajlı bölgelerde çalışan yöneticilerin bu başlık altından puan almaları imkânsız velilerin kültürel yapıları ekonomik yapıları yüksek olan bölgelerde velinin çabasıyla öğrenciler çeşitli yarışmalarda derece alabiliyorlar bu tarz okullarda çalışan yöneticilerde haksız bir şekilde öne geçmiş oluyor (K5). Mesai saatinde sabah 8.00 akşam 17.00 eğitim öğretim saatleri dışında, öğretmenler kurs vermemeli, bunu mesai saati içindeki maaşının karşılığında yapmalı, öğretmenler şimdiki uygulamada kursu kapanmasın diye öğrenciye yalvarır duruma düşüyorlar şu an yapılan uygulamalar öğretmene para kazandırma dışında hiçbir işe yaramıyor (K8).

Yönetici görevlendirmede okul geliştirme deneyiminden elde edilen puanların uygunluğuna *kararsızım* cevabı veren katılımcının görüşü şöyledir;

Kararsızım (K13)

Ödüllerden elde edilen puanlara ilişkin katılımcıların görüşleri Tablo 12'de gösterilmiştir.

Tablo 12. Ödüllerden Elde Edilen Puanlara İlişkin Katılımcı Görüşleri

Kategori	Tema	Kod
Ödüller	Yeterli ya da Uygun (11)	Uygun buluyorum (K3, K10, K11, K16, K18, K22, K26, K27, K28) *Adaletli olduğun sürece uygun buluyorum (K7)*
	Kısmen Yeterli/ Kısmen Uygun (6)	Tüm meslek hayatı değerlendirilmelidir (K4, K9, K14, K15, K19, K20)
	Yetersiz ya da uygun değil (11)	Uygun değildir *(K1, K5, K6, K17, K21)* *Ödüllerin adaletli verildiğini düşünmüyorum (K2, K12)* Politikanın etkileri olmamalı *(K8, K23, K24, K25)*

Tablo 12'de görüldüğü gibi 28 katılımcıdan 11 tanesi ödüllerden elde edilen puanları *yeterli* bulurken, 11 tanesi *yetersiz*; Altı tanesi ise *kısmen yeterli* bulmuştur. Ödüllerden elde edilen puanları *yeterli* ya da uygun bulan katılımcıların bazılarının görüşleri şöyledir;

Uygun buluyorum (K3, K10, K11, K16, K18, K22, K26, K27, K28). Adaletli olduğun sürece uygun buluyorum (K7).

Ödüllerden elde edilen puanları *kısmen yeterli* bulan katılımcının görüşleri şöyledir;

Son 4 yıldaki belgelerin değerlendirmeye alınmasını eleştiriyorum, neden 4 yıl önceki başarılarımızın hiçbir önemi yok mu? Bir kişi 13-15 yıl idarecilikte kalabilmişse bu kişinin bir kapasitesi var demektir bunun da bir değeri olmalıdır (K4).

Ödüllerden elde edilen puanları *yetersiz* bulan ya da *uygun olmadığını* düşünen bazı katılımcıların görüşleri ise şöyledir;

Bireyin meslek hayatının başından sonuna kadar aldığı tüm başarı belgeleri değerlendirmeye tabi tutulmalıdır; kişi her birini alırken emek etmiştir her emeğinin karşılığında puan almalıdır (K1). Verilen ödüllerin adaletli verildiğini düşünmüyorum son iki sene MEB herkese başarı belgesi verdi, gerçekten başarı göstermiş teklif ettiğimiz kişilere de bazen başarı belgesi verilmeyebiliyor. Yani adaleti bulmuyorum (K12). Pandemiden dolayı hatta izinde olanlara, yurt dışında olanlara dahi başarı belgesi verildi son 2 yıl tüm öğretmenlere başarı belgesi verildi, kriterler yanlış, başarı belgeleri benim iktidarım dönemin de aldıysan geçerli daha önce de aldıklarım geçerli değil (K25).

Yönetici olarak görevlendirileceklerde *cezalar* nedeniyle düşülen puanlara ilişkin katılımcıların görüşleri Tablo 13'te gösterilmiştir.

Tablo 13. Cezalar Nedeniyle Düşülen Puanlara İlişkin Katılımcı Görüşleri

Kategori	Tema	Kod
Cezalar	Yeterli ya da Uygun (15)	Evet, ceza almışsa uygun buluyorum (K1, K2, K3, K9, K10, K19, K27) Ödüle puan veriliyorsa cezaya da eksi puan verilmeli (K4)
	Kısmen Yeterli/ Kısmen Uygun (7)	Uyarı, kınama cezalarından puan kesilmemeli (K7, K12, K25) Tüm cezalar değerlendirilmeli (K14) Daha yüksek puanlar düşürülmeli (K20) Cezalar hakkaniyetle verilmiyor (K20)
	Yetersiz ya da uygun değil (6)	Haksız cezalar olabilir bunun analizi yapılmalı (K5) Aylıktan kesme almış biri idareciliğe devam etmemeli (K6, K16, K17, K24) CIMER üzerinden şikâyetlere çok kolaylıkla cezalar veriliyor başarı belgesi almayı da engelliyor (K8)

Tablo 13'te görüldüğü gibi 28 katılımcıdan 15 tanesi cezalar nedeniyle düşülen puanları *yeterli* bulurken, altı tanesi *yetersiz;* yedi katılımcı ise *kısmen yeterli* bulmuştur. Cezalar nedeniyle düşülen puanların *yeterli* ya da *uygun* olduğunu belirten katılımcıların bazılarının görüşleri şöyledir;

> *Evet, ceza almışsa uygun buluyorum (K1, K2, K3, K9, K10, K19, K27). Olabilir ödüle puan veriliyorsa cezaya da eksi puan verilmeli (K4).*

Yönetici görevlendirmede cezalar nedeniyle düşülen puanları *kısmen yeterli* bulan katılımcılardan bazılarının görüşleri şöyledir;

> *Uyarı, kınama cezalarından puan kesilmemeli, çünkü çok kolaylıkla verilen bir ceza, büyük cezalar için uygulanabilir (K7). Kesilmeli ama neden 1 tane? Birden fazla cezası varsa değerlendirilmeli (K14). Cezalar hakkaniyetli verilmişse daha yüksek puanlar düşürülmeli (K20).*

Cezalar nedeniyle düşülen puanları *yetersiz* bulan ya da *uygun olmadığını düşünen* bazı katılımcıların görüşleri ise şöyledir;

> *Günümüzde haksız bir şekilde o kadar çok şikâyetler oluyor ve kolaylıkla cezalar alınabiliyor ki burada verilen cezaların ne kadar adaletli olduğuna bakmak gerekir, haksız cezalar olabilir bunun analizinin yapılması lazım (K5). Puanlar çok yüksek bunlar biraz düşürülmeli, aylıktan kesme cezası almış bir idareci zaten idareciliğe devam etmemeli (K16). Şu an öğretmenler ve yöneticiler, velilerin önüne atılmıştır CIMER üzerinden şikâyet yapıyor ve çok kolaylıkla hepimize cezalar veriliyor başarı belgesi almayı da engelliyor (K8).*

Yönetici olarak görevlendirileceklere ilişkin *ortak hükümler* hakkında katılımcıların görüşleri Tablo 14'te gösterilmiştir.

Tablo 14. Yönetici Olarak Görevlendirileceklerde "Ortak Hükümlere" İlişkin Katılımcıların Görüşleri

Kategori	Tema	Kod
Ortak Hükümler	Yeterli ya da Uygun (3)	Doğru buluyorum (K3, K24, K28)
	Kısmen Yeterli/ Kısmen Uygun (11)	Asaleten atama olmalı (K1, K14, K15, K27) Okullardaki farklı cinsiyette müdür yardımcılarının olmasını uygun buluyorum (K2, K5, K10, K11, K12) Rotasyon isteğe bağlı olmalı (K9, K18)
	Yetersiz ya da uygun değil (13)	Rotasyon süreleri uzatılarak asil atama olmalı *(K25, K26)*
	Kararsızım	Kararsızım (K6)

Tablo 14'te görüldüğü katılımcılardan üç tanesi ortak hükümleri *yeterli,* 11 tanesi *yetersiz* 13 tanesi *kısmen yeterli* bulmuş; 1 tanesi kararsız kalmıştır. Yönetici görevlendirmede ortak hükümlerin *yeterli* ya da *uygun* olduğunu belirten katılımcıların bazılarının görüşleri şöyledir;

> *Doğru buluyorum (K3, K24, K28).*

Ortak hükümleri *kısmen yeterli* bulan katılımcılardan bazılarının görüşleri şöyledir;

> *Okullardaki farklı cinsiyette müdür yardımcılarının olmasını uygun buluyorum (K10). Unvan görevlendirmeyle değil asaleten olmalı, rotasyon olmalı ama süre az, kendi branşı ile ilgili okullarda görev yapmasını uygun buluyorum. (K14). 4 + 4 süre sınırı olmamalı, isteğe bağlı olmalı 4 yılı bitirdikten sonra kalmak istiyorsa direkt kalmalı. İlkokullarda, anaokullarında, kız meslek liselerinde okutabileceği ders olması önemli ama tüm okullar için gerekli değil. İlkokullarda yabancı dil, din kültürü öğretmenlerinin müdür olmasına kesinlikle karşıyım sınıf öğretmenliği yapmış olmalı ki müdür okuldaki öğretmenleri anlayabilmeli (K9). 4+4'ü çok eksik buluyorum, ilk yıl alışmakla geçiyor, son yıl ben gideceğim diye işleri aksatmakla geçiyor geriye 2 yıl kalıyor bu da bir okul için çok yetersiz, kuruma zarar veriyor. Burada süre olmamalı isteğe bağlı atanma olmalı başka bir şehre de tayinle üzerimdeki unvanıyla gidebilmeli, yöneticinin okulunda uzun süre kalması kurum kültürü oluşturur (K18).*

Ortak hükümleri *yetersiz* bulan ya da *uygun olmadığını düşünen* bazı katılımcıların görüşleri ise şöyledir;

> *8 yıllık tek parça halinde süre uygulanabilir, müdürlük ya da müdür yardımcılığı görevlilere unvanları asil olarak üstlerinde olmalı, iller arası tayinlerden de yararlanabilmeli, 8 yıldan fazla aynı okulda kalmamalı. Unvanlarımız kadrolu olarak verilmeli, iller arası tayinde isteyebilmeliyiz, il emrinde verilmememiz gerekiyor yani müdür yardımcılığı da kadro görevi olmalı (K26).*

Yönetici görevlendirmede ortak hükümler konusunda *kararsız* olduğunu belirten katılımcının görüşü şöyledir; *Kararsızım (K6)*

SONUÇ, TARTIŞMA ve ÖNERİLER

Yönetici olarak görevlendirileceklerde aranan *genel şartlar* uygundur. Az sayıda yapılan eleştirilerin odağında yöneticiliğin özel bir eğitim ve akademik altyapı gerektirdiği, bunun için çok aşamalı ve duyarlı bir seçme yönteminin olması gerekliliği vardır. Bu sonuç genel şartların uygunluğu yönüyle Berk, Topcan ve Özdemir'in (2015) sonuçları ile örtüşmektedir. Berk, Topcan ve Özdemir (2015) de çalışmalarında genel şartların liyakatli yönetici görevlendirme için uygun olduğu sonucuna varmışlardır. Çok aşamalı ve duyarlı bir seçme yönteminin olması gerekliliği sonucu ise Eğitim Birsen (2019) ve Uygur'un (2021) sonuçları ile benzerlik göstermektedir. Anılan çalışmalarda da yönetici olarak görevlendirileceklerde bazı ön koşulların (süreleri ve nitelikleri tartışılmakla birlikte) olması gerekliliği vurgulanmakta ancak yöneticilik için özel bir eğitim ve akademik altyapıya ihtiyaç duyulduğuna dikkat çekilmektedir. Dolayısıyla, çok aşamalı, duyarlı bir seçme yönteminin geliştirilmesi konusunda geniş bir uzlaşı vardır. Genel Şartların uygunluğu kabul edilse de, uluslararası standartlarda bir yönetici görevlendirme ölçütlerine ulaşmak için adayların profesyonel yöneticilik eğitimine alınması uygun olacaktır. Aslında genel şartlarda olmakla birlikte mevcut durumda uygulanmayan (aranmayan) "Eğitim yönetimi sertifikasına sahip olmak" şartı süre ve içerik açısından uygun bir zemine oturtulursa hem hizmet-öncesi yoğun yöneticilik eğitimi hem de duyarlı bir seçme süreci ihtiyacını kısmen karşılayabilir.

Müdür olarak görevlendirileceklerde aranacak özel şartlar kısmen yeterlidir. Özellikle mesleki branşlara uygunluk, deneyim süresi ve alt yönetim kademelerinden geçiş gibi ölçütlerin yetersizliği söz konusudur. Örneğin, üst düzey yöneticilikten müdürlüğe doğrudan görevlendirmelerin doğru olmaması; alt yönetim kadrolarında çalışma şartının yıl olarak az olması; tüm eğitim kademelerine atanabilen yabancı dil ve din kültürü branşlarına haksız avantaj sağlanması gibi. Okul müdürlüğü sahada olmayı ve tüm paydaşlarla temas halinde olmayı gerektiren bir konum olduğundan, bakanlık merkez teşkilatında ya da il-ilçe milli eğitim müdürlüklerinde çalışmış kişilerin diğer şartlara bakılmaksızın okul müdürlüğüne görevlendirilmesi uygun değildir. Okul müdürlüğüne yapılacak görevlendirmelerde Bozkurt (2005), Aktepe (2014) ve Uygur'un (2021) da vurguladığı gibi deneyim süresi konusundaki eleştiriler titizlikle dikkate alınarak yeniden gözden geçirilmeli yöneticiliğe katkı sağlayan ve temel oluşturan eğitim ve deneyimler önceliklendirilmelidir. Alt yönetim kademelerinde geçirilen sürelerin azlığı sonucu Seçkin'in (2019) sonuçlarıyla benzeşmektedir. Seçkin (2019) de yaptığı çalışmasında kurucu müdür, müdür başyardımcısı, müdür yardımcısı ve müdür yetkili öğretmen olarak ayrı ayrı veya toplam en az bir yıl görev yapmış olmak ölçütünün gerekli deneyim ve tecrübe açısından yetersiz olduğu sonucuna varmıştır.

Müdür Başyardımcısı ve Müdür Yardımcısı Olarak Görevlendirileceklerde Aranacak Özel Şartlar kısmen yeterlidir. Yetersiz görülen ölçütler; öğretmenlikte geçen sürenin azlığı, kendi branşının olduğu okula atanma şartının katı olması ve iller arası nakillerde de mevcut pozisyonun korunmamasıdır. Benzer bir sonucu Dilbaz ve Atış'ın (2021) çalışmasında da görmekteyiz. Dilbaz ve Atış (2021) da müdür yardımcılığına ya da müdür baş yardımcılığına atanmada branş önceliğinin yerine daha bağlayıcı olan ön koşul olarak ortaya konmasını katı bir tutum olarak değerlendirmişlerdir.

Yönetici olarak görevlendirileceklerin *eğitimlerinden elde edilen puanlar genel olarak yeterlidir. Bununla birlikte* ikinci lisans eğitimine puan verilmesi doğru değildir. Lisansüstü eğitimden alınan puanlar yeniden gözden geçirilmeli ve coğrafi farklardan kaynaklı eşitsizlikler için de tedbir alınmalıdır. Yönetici adaylarının eğitimlerine verilen puanların yeterlik durumu Berk, Topcan ve Özdemir (2015) ve Demirer ve Ergezen'in (2022) sonuçlarıyla benzerlik göstermektedir. Berk, Topcan ve Özdemir'in (2015) çalışmasında da eğitimlerden alınan puanların uygun ancak eğitim yönetimi alanında doktora derecesine verilen puanın daha yüksek olması gerektiği vurgulanmıştır. 2021 Yönetmeliğinde, 2014 yönetmeliğine göre doktora derecesine daha fazla puan verildiği (10'dan 15'e) düşünüldüğünde eğitimlerden elde

edilen sonuçlar benzerlik göstermektedir. Benzer şekilde Demirer ve Ergezen (2022) de doktora dereceli okul yöneticisi adaylarına daha fazla fırsat tanınması gerektiğini vurgulamaktadır. Bununla birlikte Türkiye'de özellikle lisansüstü eğitime erişimde coğrafi eşitsizlikler çok belirgindir. Büyükşehirde görev yapan bir yönetici adayıyla, ücra bir köyde görev yapan yönetici adayının aynı şartlarda lisansüstü eğitim imkanına erişemeyeceği aşikardır. Lisansüstü eğitim imkanlarına erişimdeki eşitsizliklere ilişkin sonuç Ayral'ın (2016) çalışmasında da dikkat çekmektedir. Aktepe (2014) ile Konan, Bozanoğlu ve Çetin (2017) ise lisansüstü eğitimin puan getirmekten öte okul yöneticiliği için önkoşul olması gerektiğini savunmaktadır. Eğitim Bir-Sen (2019) ile Demirer ve Ergezen (2022) doktora derecesine sahip yönetici adaylarının atamada dikkate alınan diğer bir kısım şartlardan (sınav, mülakat vb gibi) muaf olması gerektiğini vurgulamaktadır. Bununla birlikte tarihsel süreçte eğitim yönetimi alanında lisansüstü dereceye sahip olmak tercih nedeni olmaktan öteye geçememiştir (Çamur, 2003).

Yönetici görevlendirmede hizmet süreleri için belirlenen puanlar kısmen yeterlidir. Tüm görevlerde, özellikle de öğretmenlikte, geçen sürelerin dört yıldan sonra puanın yarı yarıya azalması doğru değildir. Demirer ve Ergezen (2022) hizmet süresi ile yöneticilik performansı arasında güçlü bir ilişki olmadığını belirterek bu çalışmanın sonucunu kısmen desteklemektedir. Bununla birlikte süreleri farklı olmakla birlikte ABD ve Japonya gibi gelişmiş ülkelerin bazılarında (Akın, 2012) ve Avrupa Birliği Ülkelerinde (Bozkurt, 2005; Pelit, 2013) kıdem olarak adlandırılan hizmet süresinin yönetici atamada dikkate alınması da bu ölçütteki puanlamalarda bazı düzenlemeler yapılsa da göz ardı edilemeyeceğini ortaya koymaktadır. Bununla birlikte yönetici adaylarının hayatın olağan akışında öğretmenlik mesleklerini icra ederken topladıkları puanların; özel çaba, emek ve maddi külfetle elde edilebilen doktora derecesini geçecek şekilde puan getirmesi puanlama kısımlarına bütüncül bakıldığında doğru bir ölçüt olmayacaktır. Doktora derecesi ile kıdemin gerektirdiği performansların çok farklı olduğu alanda çalışanlar tarafından koşulsuz kabul edilen bir gerçektir.

Akademik ve mesleki deneyimden alınan puanlar kısmen uygundur. Makalelerden ve akademik çalışmalardan elde edilen puanların doğruluğu, yöneticilikle ilgisi ve yöneticiliğe katkısı konusunda ciddi endişeler vardır. Aktepe (2014) de akademik çalışmaların uygulamaya dönük yönlerinin güçlendirilmesi gerektiğini belirterek bu çalışmanın sonuçlarını desteklemektedir.

Kurum ve okul geliştirme deneyiminden elde edilen puanlar uygun değildir. Kurumlar ve bölgeler arası eşitsizlikler ve ölçütlerin tamamına yakınının yöneticilerin çabalarının dışında olması en önemli gerekçelerdir. *Kurum ve okul geliştirme deneyimi* altındaki tüm ölçütler yönetici adayının bireysel çabalarının dışında olan ölçütlerdir. Recepoğlu ve Kılınç (2014) ve Eğitim-Bir-Sen (2019) de yönetici görevlendirmede adayın çabalarının/performansının ölçülebilir standartlara bağlanması gerektiğini vurgulamakta ve çevresel faktörlerin eşitlik ilkesini ihlal ettiğini ve bu konuda düzenlemelerin gerektiğini savunmaktadır. Adı geçen çalışmaların bulguları bu yönüyle bu araştırmanın sonuçlarıyla örtüşmektedir.

Yönetici görevlendirmede hakkaniyete dikkat edilerek verilen *Ödül ve Cezalardan Elde Edilen Puanlar* büyük oranda uygundur. Uygun olmayan taraflar ise adil olmaması ve yönetici adaylarının tüm meslek hayatlarını kapsamamasında yoğunlaşmaktadır. Bu sonuç Özmen ve Kömürlü (2010); Akçadağ (2014); Berk, Topcan ve Özdemir (2015) ve Ergin'in (2016) sonuçlarıyla örtüşmektedir. Özmen ve Kömürlü (2010) ödül ve cezaların yönetici görevlendirmede dikkate alınması gerektiğini vurgularken liyakat, nesnellik ve puan durumlarının her zaman tartışma konusu olduğuna dikkat çekmektedir. Akçadağ (2014) ise rasyonel olan ve haksız rekabete sebebiyet vermeyecek şekilde tevcih edilen ödüllerin yönetici atamada niteliği artırdığını vurgulamaktadır. Berk, Topcan ve Özdemir (2015) ödül ve cezaların gerekliliğine vurgu yaparken eklenen ve çıkarılan puanlar konusunda bu çalışma sonuçlarıyla farklılaşmaktadır. Ergin'de (2016) ödül ve cezanın yönetici görevlendirmelerde dikkate alınmasını önermekle birlikte şeffaf ve objektif bir yaklaşımla ele alınması gereken önemli ölçütler olduğunun üzerinde durmaktadır. Konan, Çelik ve Çetin (2018) liyakat ve

ehliyet sahibi yöneticilerin ancak liyakati önceliklendiren ölçütlerle seçilebileceğine dikkat çekmektedir. Diğer yandan yönetici adayının öğretmenlik yaparken aldığı ödüller, yöneticilik değil öğretmenlikteki başarısıyla ilgilidir. Öğretmenlikte başarılı bir yönetici adayının, öğretmenlikte sergilediği başarıyı yöneticilikte de sergilemesi mümkün olmayabilir. Dolayısıyla ödüller değerlendirilirken öğretmenlik üzerine verilen ödüllerin yeniden gözden geçirilmesi faydalı olacaktır.

Yönetici görevlendirmedeki ortak hükümlerden "farklı cinsiyette müdür yardımcılarının olması" ölçütü uygun görülse de genel itibariyle iyi yönetici seçmek için gerekli bir ölçüt değildir. Özellikle sürelerin; azami süreler sonrası yeniden atamaların yeniden gözden geçirilmesi gerekmektedir. Yöneticilik görevlendirmeyle değil kadroyla olmalı ve bu kadro il dışı tayinlerinde de dikkate alınmalıdır. Her ne kadar 4+4 toplam sekiz yıl aynı okulda müdür olarak görev yapma uygulaması Güney Kore (Korea Ministry of Education, 2024; Öztürk ve Akkuş) de görülse de Türkiye'de her iki süreye de temkinli yaklaşılmaktadır.

Öneriler

Yönetici adayının başarısı ile doğrudan ilgili olmayan ya da yönetici adayının aktif katkı sağlamadığı, sadece görev yapılan okul/kurum türü ya da bölgeden kaynaklı puanlar dikkate alınmamalıdır.

Son görevlendirme sonrası alınan belgeler, ödüller cezalar vb değerlendirmeye alınmalı. Bir başarım birden çok atamada geçerli olmamalıdır.

Her kısım için alınacak puanlarda üst sınır olmalı, mevcut üst sınırlar gözden geçirilmelidir.

Bölgesel eşitsizlikleri giderici tedbirler alındıktan sonra EYD'de lisansüstü eğitim ön-koşul olabilir.

Yönetici olarak atananlar kendi hallerine bırakılmamalı, farklı eğitimlerle liderlik yetkinliklerinin geliştirilmesine çalışılmalıdır.

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Çıkar Çatışması Beyanı

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Evaluation of the Criteria Utilized by the Ministry of National Education for Selection and Assignment of Administrators

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Abstract
This study evaluates the effectiveness of the criteria introduced by the 2021 Administrator Selection and Assignment Regulation in identifying qualified administrators. Conducted using a case study approach, a qualitative research method, the data were collected through a semi-structured interview form. The study involved 28 school administrators working in Istanbul, and the collected data were analyzed using descriptive and content analysis. The findings indicate that while some aspects of the existing criteria are insufficient, others need improvement. Participants highlighted deficiencies in the examination system, injustices in the selection process of administrator candidates, and the lack of adaptation of the criteria to regional differences. In conclusion, for educational institutions to be managed by more competent administrators, the selection criteria should be more objective, fair, and effective. Updating these criteria based on stakeholder feedback and grounding them in scientific principles will enhance the quality of educational administration. In particular, it is recommended to remove criteria that do not involve the active contribution of the principal candidate in their acquisition.

Keywords: criteria evaluation, evaluating administrator selection criteria, evaluating school principal selection criteria, selecting administrators.

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INTRODUCTION

The most important feature of today's world, in which the history of humanity has been reshaped by social, economic, and scientific change and evolved into the age of information and communication, is simultaneous, interactive, and rapid change in many fields. There is a positive correlation between the level of keeping up with this change and the level of education. Well-educated individuals can always adapt to changing conditions more easily (Ereş, 2005; Ministry of National Education, 2018). Education is not only an important tool in adapting to all kinds of rapid changes in societies but also a fundamental human right under constitutional guarantee. While societies create their education systems and transfer the knowledge, experience, and values that exist in their culture to future generations, on the other hand, these transferred characteristics shape the systems of education (Dinçer, 2003). From this point of view, one of the primary objectives of education is to raise citizens who are in harmony with universal culture without breaking away from moral, humanitarian, spiritual, and cultural values; who transfer the current accumulation in society to future generations by establishing a link between the past and the future; who are at peace with nature; and who have transformed their duties and responsibilities towards human rights into behavior. People's cognitive needs are largely universal, and they need education to meet these needs. Therefore, the way to raise individuals with the qualities listed above is through education.

Education as a system consists of inputs, processes, and outputs. In order for the education system to raise individuals with the desired qualifications, it is necessary to cooperate and work in coordination with many key stakeholders such as parents, teachers, students, etc. in the input, process, and output stages, which are the elements of the system. The input that has the most impact on all three elements of the education system is the people in the position of administrators in educational institutions (Gupta & Gupta, 2013). In this context, as one of the most important actors in the education system, school administrators and other people in managerial positions are leaders who directly affect the academic success of both teachers and students and the school culture. An administrative staff with the cognitive, affective, and kinesthetic competences required for their position can turn education into a driving force in the development of society.

Along with other social institutions, educational organizations are also affected by continuous change and development. One of the key elements for educational institutions to contribute to social development by adapting to change is administrators. Qualified administrators who can manage the change successfully and cope with the problems they face can carry educational organizations forward. Therefore, the role in the success of the school belongs to school administrators, primarily the school principal. Many studies show that there is a link between the leadership skills of school administrators and student achievement (Robinson, Lloyd, & Rowe, 2008; Webster & Litchka, 2020; Gurr, 2024). If school administrators (principals and vice principals) are selected from meritorious and competent people, the expected benefit from educational activities can be obtained at the highest level. School administrators have responsibilities such as managing students, teachers, civil servants, servants, security guards, outsourced services, and relations with parents in a good way; creating a moderate and healthy school climate; following the development of students; improving the physical conditions of the school; and having management skills.

It is possible for administrators to create a positive school culture, good learning, a strong and healthy bonding environment with subordinate and superior units, establish healthy relationships, and consider the expectations of all stakeholders. Research on leadership shows that effective schools are managed by effective instructional leaders (Lipham, 1981; Griffin, 1993; Balcı, 2001; Gümüşeli, 2001; cited in. Gürbüz, Erdem, & Yıldırım, 2013). The presence of a strong leader who is responsible and continuously updates himself/herself and continues his/her professional development follows the technology, establishes good relations with society, environment, and employees, and strives for the development of the school in every aspect is vital for educational institutions. In order for school administrators with the aforementioned qualities to be successful in all managerial processes, in addition to being well-trained; it is imperative that

the criteria for selecting and appointing school administrators should be based on objective, professional knowledge and skills (Özmen & Kömürlü, 2010).

Criteria are norms, standards, or reference points that are used in the comparison, evaluation, and selection of a particular situation, phenomenon, or individual. Criteria play a guiding role in decision-making processes and contribute to making choices objectively and in accordance with certain principles. The main purpose of using criteria is to reach objective results by making a standardized evaluation and to support healthy decision-making processes (Berk, Topcan, & Özdemir, 2015; Bandalos, 2018). In order for the criteria to fulfill their guiding role in providing the objectivity expected from them, they should be appropriate, meaningful, and usable for the relevant field, in short, they should be "valid". At the same time, the criterion should be able to accurately measure the quality, in other words, it should be "reliable". In the context of school administration, as in all other fields, various criteria are developed to determine whether a school administrator has the necessary qualifications to perform his/her duties effectively. These criteria may include many different dimensions such as academic competence, managerial skills, leadership qualities, communication competence, ethical values, and decision-making capacity (Northouse, 2016).

Establishing valid and reliable criteria enables objective and fair evaluation in selection processes. Arbitrary and subjective evaluations may encourage selections based on personal preferences rather than merit, and this may negatively affect the effectiveness of management in educational institutions. Well-defined criteria allow candidates' knowledge, skills, and experience to be objectively analyzed and ensure that the most suitable and meritorious individuals are selected for educational administration (Bush, 2008; Leithwood & Sun, 2017). Merit refers to the suitability of individuals' knowledge, skills, abilities, experience, and skills for the position they are appointed to or want to be appointed to. Determining the criteria for the selection of school administrators based on the principle of merit has a critical role in ensuring the sustainable success of educational institutions. The selection of administrators with the right criteria can positively affect teacher and student motivation as well as increase the academic achievement level of the school (Marzano et al., 2005). A merit-based management approach provides equal opportunity in the education system and increases institutional reliability. In this respect, determining objective criteria for administrator appointments and operating evaluation processes based on these criteria increases the administrative quality of educational institutions and supports students to receive a better education.

The criteria for selecting and appointing administrators in Turkey have been changed in various periods. It is considered that the main motivation behind these changes is the effort to select more meritorious and competent candidates for managerial positions. The most important evidence for this conclusion is that the weight of the oral exam, whose objectivity has always been a matter of debate, has gradually decreased in the last three regulations (2017, 2018, 2021). While the weight of the oral exam was 50% in the 2017 regulation, it was first reduced to 40% and then to 20% in 2018. However, the weight of the oral exam continued as 20% in the 2021 Regulation. Considering that the oral exam jury members throughout Turkey tend to give scores close to or identical to the written exam scores of administrator candidates, it can be considered that the oral exam has become dysfunctional (Dilbaz and Atış, 2021). The effect of the score obtained from the written exam on the average has remained largely constant at 50% over the years (Ministry of National Education, 2017; Ministry of National Education, 2018; Ministry of National Education, 2021).

In selecting or appointing administrators, other criteria taken into consideration apart from written and oral exams are education, experience, awards, and penalties. Although the scores given to the performance indicators under these categories have changed over time, these categories have remained constant. For example, while having a doctorate degree in Educational Administration was a criterion that brought 10 points in the 2014 regulation, it became a criterion that brought only five points in the following three regulations (2015, 2017, 2018) (Ministry of National Education, 2014). The same criterion had a much higher score in the 2021 regulation,

with fifteen points, compared to previous regulations (Ministry of National Education, 2021). The changes in the scores given to the criteria over the last ten years are shown in Table 1 below.

Table 1. Common criteria in the last five regulations and the corresponding scores

	Criteria	Years				
		2014	2015	2017	2018	2021
Training	For each year of associate and undergraduate education (maximum 4 years)	1	1	1	1	-*
	For master's degree in other fields	3	2	2	2	7
	Master's degree in Management	5	3	3	3	8
	PhD in other fields	8	4	4	4	11
	PhD in Management	10	5	5	5	15
Awards	Certificate of Appreciation or Certificate of Achievement (maximum 1)	1	1	1	1	1
	Certificate o f Appreciation or Certificate of Outstanding Achievement (maximum 1)	2	2	2	2	2
	Salary Award (maximum 1)	3	3	3	3	-
	Award (maximum 1 award)	5	4	4	4	3
Penalties	For each reprimand (excluding those pardoned)	-1	-1	-1	-1	-1
	For each penalty of salary deduction or salary cut (excluding those pardoned)	-3	-3	-3	-3	-2
	For each penalty of suspension of rank advancement, demotion in seniority, and grade demotion as a penalty (excluding those pardoned)	-5	-5	-5	-5	-3
Service	For each year of teaching	0,36	0,36	0,36	0,36	1
	For each year of service as Founding Principal, Vice Principal, and Acting Principal Teacher	0,48	0,48	0,48	0,48	2
	For each year in the position of Deputy Principal	0,60	0,60	0,6	0,6	3
	For each year spent as a Branch Manager or in a higher position in the Directorate and the Central and Provincial Organizations of the Ministry	0,72	0,72	0,72	0,72	4

*In the 2021 Regulation, no points are given for years of service, but 4 points are given for the second undergraduate degree.

As seen in Table 1, while the scores given to the criteria in the regulations up to the 2021 Regulation are largely similar, there is a significant difference in this regulation. In addition, unlike the previous regulations, additional criteria have been introduced under different categories in the 2021 Regulation. These categories are as follows: Academic and Professional Experience, Institution Development Experience, and School Development Experience. There are a total of 33 criteria under three categories only in the annex of the 2021 Regulation in addition to the criteria in the other regulations. The categories and criteria are shown in Table 2.

Table 2. Criteria only in the 2021 Regulation (Annex-2 for reassignments)

Category		Criterion	Point
ACADEMIC and ROFESSIONAL EXPERIENCE		Publishing an article in a national refereed journal	2
		Publishing an article in an international refereed journal	3
		Having taught and evaluated at least one semester at the university	2
		Having served as a practice school principal within the scope of the teaching practice of prospective teachers	3
ORGANIZATION DEVELOPMENT EXPERIENCE	Institutional Competence Practices	Obtaining trademark registration on behalf of the educational institution they manage	3
		Administrators of educational institutions whose teachers and students have received design registration from the Turkish Patent and Trademark Office	4
		Administrators of educational institutions whose teachers and students have received utility model registration from the Turkish Patent and Trademark Office	5
		Administrators of educational institutions whose teachers and students have received patent registration from the Turkish Patent and Trademark Office	6
	Project work	Administrators of educational institutions have had a national project carried out and concluded	1
		Administrators of educational institutions have had an international project carried out and concluded	2
		Having served as a consultant on the completed national projects	2
		Having served as a consultant on the completed international projects	4
		Having served as an executive on the completed national projects	3
		Having served as an executive on the completed international projects	5
	Teacher Empowerment	Having participated in in-service training activities as a trainee	1
		Having participated in in-service training activities as an education administrator	2
		Having participated in in-service training activities as an educator	2
SCHOOL DEVELOPMENT EXPERIENCES	Reducing Achievement Gaps	Carrying out management duties within the scope of Primary School Education Program (İYEP)	2
		Carrying out management duties within the scope of Supporting and Development Courses (DYK)	2
		To carry out management duties within the scope of education services at home and in hospital	2
		Administrators who created a support education room in their educational institutions	2
		Having served as an administrator in extracurricular education activities	2
	Student Achievements	Having students who received honorable mentions in national competitions such as knowledge/skills/sports/art/projects, etc. in their educational institution	1
		Having a student who ranks third in nationally organized competitions such as knowledge/skills/sports/arts/projects, etc. in their educational institutions	2
		Having a student who ranks second in national competitions such as knowledge/skill/sports/art/projects, etc. in their educational institutions	3
		Having a student who ranks first in national competitions such as knowledge/skill/sports/art/projects, etc. in their educational institutions	4
		Having students who received honorable mentions in international competitions such as knowledge/skills/sports/arts/projects, etc. in their educational institutions	2
		Having a student who ranks third in international competitions such as knowledge/skills/sports/arts/projects, etc. in their educational institutions	4
		Having a student who ranks second in international competitions such as knowledge/skills/sports/arts/projects, etc. in their educational institutions	6
		Having a student who ranks first in international competitions such as knowledge/skills/sports/arts/projects, etc. in their educational institutions	8

If the scores obtained from the new and additional criteria in Table 2, which were not included in the previous regulations, are obtained properly, they can be expected to serve for the identification of meritorious administrators by making more sensitive and reliable assessments. However, the extent to which the criteria used for the first time in the 2021 Regulation serve the purpose together with other criteria has not yet been evaluated according to stakeholder views. The fact that the criteria (Annex-2) in the "Regulation on Selection and Appointment of

Administrators to Educational Institutions Affiliated to the Ministry of National Education", which was published in the Official Gazette dated February 5, 2021, and numbered 31386, have not been evaluated by the participants to select a good administrator constitutes the problem of this study. Therefore, this study aims to determine whether the criteria in the 2021 Regulation are functional in determining meritorious administrators.

Criteria are the most basic tools in administrative appointments. Taking the views of stakeholders into consideration while preparing this tool is democratic and humane, and it is an undeniable fact that it will yield more efficient results. The criteria determined for selecting a manager must be sufficient and appropriate to select a good administrator. Administrators who are defined as good, competent, or meritorious administrators, besides knowing the work they do very well in theory and practice, have social skills (effective communication, problem-solving, etc.) that will increase the total impact of this information, and they are also information and IT literate to be able to follow and keep up with the developments in the field.

This research will contribute to determining the functionality of the criteria used in selecting and appointing meritorious school administrators and to determining objective criteria in future criteria development studies.

METHOD

This study, which examines the sufficieny of current school administrator selection criteria in determining competent and meritorious administrators, was conducted using a case study design, one of the qualitative research approaches. Qualitative research is an approach that aims to examine the perceptions deeply, experiences, and meanings of individuals or groups regarding a phenomenon (Creswell & Poth, 2018). This type of research provides flexibility to the researcher to understand complex social phenomena. A case study is a research design used to examine a phenomenon or group of phenomena deeply within a limited context. This model is particularly useful for obtaining context-specific information and a detailed understanding of the relevant processes (Yin, 2018). This study is a case study since it examines the competence of the criteria used in determining competent and meritorious school administrators.

Participants

The participants of the study consisted of 28 administrators working in Istanbul. Purposeful sampling to select the individuals with the knowledge, experience, or characteristics that can best answer the research questions, and maximum diversity sampling, which requires selecting individuals with different characteristics that represent the context of the study (Patton, 2002), were preferred to determine the participants. With this method, diversity was achieved in terms of variables such as school type (primary school, middle School, secondary school) and professional experience. Participants included individuals with different managerial experience (such as whether they had been vice principal or not) and duration. This diversity enabled different perspectives and experiences to emerge regarding manager selection processes. The demographic characteristics of the participants are shown in Table 3.

Table 3. Demographic characteristics of the participants

Gender	Teaching level	Experience (Year)	Management Experience (Year)	Branch	Education level	Previous Task
M	Primary School	39	32	Class Teacher	Bachelor	Principal
M	Anatolian Sec. S.	27	24	Geography Teacher.	Bachelor	Deputy Principal
F	Middle School	20	2	English Teacher	Bachelor	Teacher
M	Primary School	23	13	Religious Culture T.	Master	Vice Principal
M	Primary School	35	15	Class Teacher	Associate D.	Principal
M	Primary School	25	24	Class Teacher	Master	Vice Principal
M	Primary School	24	18	Class Teacher	Yüksek L.	Vice Principal
M	Anatolian Sec. S.	44	32	Biology Teacher	Bachelor	Principal
M	Primary School	28	8	Class Teacher	Yüksek L.	Vice Principal
M	Science Sec.S.	20	7	English Teacher	Bachelor	Vice Principal
F	Middle School	13	3	Math Teacher	Bachelor	Teacher
F	Science Sec.S.	12	5	Physics Teacher	Master	Vice Principal
F	Middle School	26	8	Technology and Design Teacher	Bachelor	Vice Principal
F	Primary School	30	26	Class Teacher	Bachelor	Vice Principal
M	Primary School	24	8	Class Teacher	Bachelor	Vice Principal
M	Vocational Sec.S	28	23	Philosophy Teacher	Bachelor	Vice Principal
F	Vocational Sec.S	27	2	Biology Teacher	Bachelor	Teacher
M	Primary School	28	22	Class Teacher	Master	Vice Principal
M	Vocational Sec.S	32	25	Motor Vehicles Technology Teacher	Bachelor	Vice Principal
M	Primary School	40	20	Class Teacher	Bachelor	Vice Principal
E	Primary School	20	8	Class Teacher	Master	Vice Principal
M	Vocational Sec.S	28	22	Philosophy Teacher	Bachelor	Vice Principal
F	Vocational Sec.S	28	7	Tarih Öğrt.	Bachelor	Vice Principal
M	Vocational Sec.S	28	12	Geography Teacher	Master	Principal
M	Science Sec.S.	29	23	History Teacher	Master	Principal
M	Primary School	18	4	Class Teacher	Master	Teacher
M	Middle School	32	20	Turkish Teacher	Master	Principal
M	Middle School	41	32	Math Teacher	Bachelor	Vice Principal

Data Collection Tool

A semi-structured interview form was used to provide flexibility to collect in-depth information from the participants (Merriam & Tisdell, 2016). The interview form was prepared in line with the literature review and the views of experts. The following steps were followed in the preparation of the interview form:

By reviewing the relevant literature, important themes related to the current school principal selection processes were identified.

The interview form was drafted, and the content validity was ensured by presenting it to the views of academicians specialized in the field of Educational Administration.

The comprehensibility of the questions was tested by conducting a pilot study and necessary adjustments were made.

The form focused on the appropriateness/sufficiency of the current school principal selection criteria. The questions in the form were prepared as open-ended and the participants were enabled to express their experiences, opinions and suggestions in detail.

Process

Interviews were conducted face-to-face and online. The duration of the interviews varied depending on the participants' responses, but averaged 30-45 minutes. With the permission of the participants, the interviews recorded as audio or video with audio, and then transcribed. During the data collection process, the researcher paid attention to create an environment where the participants could freely express their opinions. In accordance with ethical rules, participants were informed about the purpose, processes and confidentiality principles of the research and informed consent was obtained. The data was collected between September and December of 2023.

Data Analysis

The collected data were analyzed using descriptive analysis and content analysis methods. In the descriptive analysis, the data were grouped under categories according to the previously determined school principal selection criteria (Miles, Huberman & Saldana, 2014).

In the content analysis, which is used to reveal the implicit meanings and repetitive patterns in the data (Krippendorff, 2004), the expressions in the data were divided into themes, and the codes that formed the themes were determined.

The analysis was based on the categories in Table 2 while presenting the findings. Since the categories used in the analysis and included in Table 2 are the categories taken as the basis for the appointment of administrators in the 2021 Regulation, descriptive analysis was preferred. Coding of participant statements and developing themes from codes required content analysis.

Validity and Reliability of the Study

The validity and reliability of the study were ensured through the following practices:

Validity

In this study, multifaceted measures were taken to ensure internal validity (credibility). Firstly, in the preparation of the semi-structured interview form, which is the primary data collection tool, the views of (a) experts who are familiar with qualitative research methods and the field of study were obtained. Thus, the content and content validity of the questions were strengthened. In this context, the views of four faculty members, two from the field of Curriculum and Instruction and two from the field of Educational Administration and Supervision with at least a doctorate, and three school principals with at least five years of experience in administration were obtained. The experts were asked to examine the semi-structured interview form in terms of its scope, clarity and comprehensibility, suitability and applicability, absence of bias and guidance, and ethical sensitivity. The data collection tool was finalized by considering the feedback from the experts. Throughout the research process, long-term and intensive interactions were established with the participants (b). Since the researcher was able to get to know the participants and the study environment in-depth, the accuracy and reliability of the data obtained were increased. The participant confirmation (member check) process (c), which allows the findings to be approved by the participants, was carried out, and thus the accuracy of the interpretations and findings was supported by the participants' views. To strengthen the transferability (external validity) of the research findings, (a) the participants' views were quoted verbatim, allowing the reader to develop their interpretations. In addition, (b) the preparation process of the data collection tool and the forms used were presented in detail. Hence, the transparency and reproducibility of the study were increased. (c) Socio-demographic and professional information about the study group was clearly reported, and the sample selection was carried out using the purposive sampling method in compliance with the purpose of the study. All these practices supported the transferability of the findings of the study to similar contexts and external validity.

Reliability

External reliability of the study was ensured by preventing data loss with the recording device and presenting the findings without interpretation. During the coding process, coding was

performed independently with a different researcher, and the agreement rate between the coders was calculated. The agreement rate was found to be above 80%, and thus the external reliability of the study was ensured.

FINDINGS

In this section, participants' views on whether the criteria in the Regulation on Selection and Appointment of Administrators for Educational Institutions Affiliated to the Ministry of National Education are sufficient to select a good administrator are given. Table 4 summarizes the participants' views on whether the general conditions required for those to be appointed as administrators are sufficient or appropriate for selecting a good administrator.

Table 4. Participants' Views on the Appropriateness/Sufficiency of the General Conditions Required for Those to be Appointed as Administrator

Category	Theme (f)	Code
Administrator General Conditions	Sufficient or Appropriate (11)	It is true, I find it appropriate (P1) General conditions are sufficient (P7, P10, P17, P24, P27, P28) Agree (P14)
	Partially Sufficient/Partially Appropriate (7)	Sufficient, but additions are needed (P3) The condition of working at least 3-5 years as a teacher-vice principal should be added (P9, P21) Readjustment of the content of written exams and interviews (K11) Graduate education should be required (P19, P22) Chiefs should be promoted to principal positions in vocational high schools (P19)
	Insufficient or inappropriate (10)	There should be a program in the university related to educational administrators, and graduates of this program should be administrators (P2) There are too many irrelevant topics, there should be more criteria related to education (P4) Managers should not wait four years to retake the exam, they should retake it whenever they want (P6, P13) You cannot become an administrator with an exam (P5, P8, P15, P20) There should be a multi-stage and sensitive selection method (P18)

As seen in Table 4, 11 of the 28 participants find the general conditions sufficient, while 10 find them insufficient and 7 find them partially sufficient. The views of some of the participants who stated that the general conditions are sufficient are as follows:

> *Of course, Article 5 of this regulation is generally correct, I find it appropriate (P1). I think the general conditions are sufficient (P7, P10, P17, P24, P27, P28). I agree, there is a condition regarding having an education certificate and we do not have such a certificate, and since we do not have an education option to get it, there is a gap there (K14).*

The views of some of the participants who find the general conditions required for the appointment of administrators *partially sufficient* are as follows:

> *Yes, the criteria are sufficient, but additions should be made (P3). The condition of having worked for at least 3-5 years as a teacher-vice principal should be added to the general conditions (P9, P21). Partially agree (P7, P8). The written exam and interview contents should be readjusted. For example, there were questions on Turkish and Mathematics in 2019, but they were removed, and History, Geography, General Culture, and Constitution topics were included. These subjects should not be so intense. I think Educational Sciences, Mathematics, Turkish, and spelling rules should be more weighted, and I find the interview meaningless (P11). There should be a requirement to have a master's degree; a bachelor's degree is not enough anymore, and even a doctorate should be required for the principalship. The period of working as a teacher should be longer; 1-2 years is too short. Teaching, vice-principalship, chiefship in vocational schools, and then principalship. If you do not pass through these levels, you cannot understand the lower levels. Administrators in vocational schools should be teachers of vocational courses (P19.) The requirement of having at least a master's degree can be added, but there may be special conditions for administrators working in schools in rural areas because it will be difficult for them to get a master's degree (P22).*

The views of some of the participants who found the general conditions *insufficient* or inappropriate are as follows:

I suggest that the general conditions section in the appointment of administrators should be completely removed, that there should be a department in the university related to educational administrators, and that Educational Administration graduates should be administrators in schools. As a school principal, I have to understand accounting, construction, and psychology, but I learn by living and experiencing. If I graduated from such a department in the university, I could receive this education at the university (P2). No, I don't think it is enough; there are too many irrelevant subjects. There should be more education-related criteria (P4). My view is that there should not be an exam. After winning the exam and being appointed, you cannot take the exam again for 4 years. This is a big disadvantage; you should be given the right to take the exam again (P13). I do not find it appropriate. I am against appointing administrators with exams, even for a while many of the administrators who succeeded in the exam could not manage and quit. What should be sought is human relations and the ability to establish a teacher-student dialog. It is not enough for a person who is deficient in this aspect to memorize the legislation and succeed in the exam to be a good administrator (P5).

Participants' views on *the special conditions required* for candidates to be appointed as principals are summarized in Table 5.

Table 5. Participants' Views on the "Special Conditions" required for candidates for Principal Appointments

Category.	Theme	Code
Special Conditions of Principalship	Sufficient or Appropriate (6)	Appointing principals according to school type is very appropriate (P1) Appropriate (P3, P4, P15, P16, P17)
	Partially Sufficient/Partially Appropriate (18)	Compliance should also be sought in professional branches (P2) Fewer points should be taken from teachers who are acting principal teachers(P7) There should be no direct appointments from senior management to principalship (P8, P9, P11, P13, P21, P22, P23, P24, P27) There should be a requirement to work in lower management positions for 5 years (P18) English and Religious Culture branches have unfair advantages (P18)
	Insufficient or not appropriate (4)	I do not find the interviews reliable (P5, P25, P26) There should be no exams and interviews, the leader should come from lower positions, and there should be no requirement to have their branches in their schools (P20)

As seen in Table 5, 6 of the participants find the conditions required for those to be appointed as principals *sufficient*, 4 of them find them *insufficient*, and 18 of them find them *partially sufficient*. The views of some of the participants who stated that the conditions required for those who will be appointed as principals *are sufficient* are as follows:

In this case, it is ensured that the appropriate principal is appointed according to the type of school, which I think is very appropriate (P1). Yes, it is appropriate (P3, P4, P15, P16, P17).

The views of some of the participants who find the special conditions to be sought in those who will be appointed as principals *partially sufficient* are as follows:

I find the condition of having the relevant branches appropriate when being appointed to vocational high schools, but there was such a problem, there was a vocational course teacher who graduated from pre-accounting, but he was able to become a principal in a vocational high school consisting of departments such as motor, and it did not achieve its goal (P2). Acting principal teachers are given points even though they have very few students, and I think this point is unfair. Acting principal teachers should be given fewer points in this section, I agree with the other criteria (P7). After being a teacher, vice-principal, and deputy principal, they should be transferred to school principalship; it is not right to be appointed directly to school principalship from a branch manager or higher administrative positions (P27). After working as a teacher for 5 years and as a vice

principal for 5 years, if possible, they should be able to work in different schools and become a school principal. It is appropriate that the school they want to be appointed to should have the course they teach. Yet in this case, some branches are very lucky; for example, English and Religious Culture teachers can become administrators of any type of school. The fact that classroom teachers are given extra points here saves the situation a little bit, but this extra point should be more (P18).

The views of some of the participants who find the special conditions to be sought in those who will be appointed as principals *insufficient* or *inappropriate* are as follows:

There is no need for a condition about being assigned to a school related to his/her field, it may be valid for very special cases. I think that merit should also be emphasized at the interview stage, as different things happen there (P25). There should not be an exam and interview, the leader should come from the bottom. It is enough if they have proven their leadership. In addition, why should people who were administrators before be tested again, this person has already proven himself/herself. The appropriateness of the administrators, how competent they have become, and how much they have worked at lower levels can also be evaluated on who will be appointed for the first time. I do not find the condition of having their branches in the school to which they will be appointed appropriate. Administration is a different thing, the things done in every school and school type are the same. This condition is not necessary (P20).

Participants' Views on the Special Conditions to be sought for those to be Assigned as Vice and Deputy Principals are shown in Table 6.

Table 6. Participants' Views on the Special Conditions to be sought for those to be Assigned as Vice and Deputy Principals

Category	Theme	Code
Vice Principal and Deputy Principal Special Conditions	Sufficient or Appropriate (5)	Criteria are sufficient (P3, P4, P12, P24, P28)
	Partially Sufficient/Partially Appropriate (19)	The condition of years of teaching is too little (P2, P7, P9, P11, P13, P15, P17) The acting principal should also be accepted (P10) The condition of being appointed to the school of one's own branch should be more flexible (P10)
	Insufficient or inappropriate (4)	There should not be a condition to be appointed to the schools which have their branches (P6) The school should have both male and female vice principals (P8) A vice principal should be appointed at the discretion of the principal (P8, P25) Appointments should be as principals, and they should be able to go with their title in inter-provincial appointments (P8, P6).

As seen in Table 6, 5 of the 28 participants in the study find the special conditions to be sought in those to be appointed as deputy and vice principals *sufficient,* 4 find them *insufficient*, and 19 participants find them *partially sufficient*. The views of some of the participants who stated that the special conditions to be sought for those who will be appointed as deputy and vice principals *are sufficient* are as follows:

It is appropriate for me, the criteria here are sufficient (P3, P4, P12, P24, P28).

The views of some of the participants who find the special conditions to be sought for those to be appointed as deputy and vice principal principals *partially sufficient* are as follows:

At least 2 years of teaching time is too little, one should work longer as a teacher. There should be a longer period of work in vice principalship, and there should be an internship period in vice principalship. Up to 5 years can be considered (P2). They do not accept acting principals; they accept acting principal teachers. I know this because it happened to me; they should be evaluated as acting principals. It is the right decision to appoint principals in the school that has courses related to the principal's branch, but there should not be too many

conditions for schools with special conditions, such as kindergartens and vocational schools (P10).

The views of some participants who think that the special conditions to be sought for those who will be appointed as deputy and vice principals *are insufficient* or *inappropriate* are as follows:

There is no requirement for a candidate to be appointed to a school related to his/her field, it may be valid for very special cases (P6). In my school there are 3 female vice principals, there should be a male vice principal for male students. The vice-principal should be appointed by the principal and the principal should establish his/her team. This may have the disadvantage of favouritism, but institutions such as unions should prevent this. I am also against the appointment of vice-principals. They should be permanent, and they should be able to go with their title in inter-provincial assignments (P8).

Participants' views on the scores obtained from the training received by those who will be assigned as administrators are shown in Table 7.

Table 7. Participants' Views on the Scores Obtained from Training

Category	Theme	Code
Training	Sufficient or Appropriate (7)	Exactly applicable (P3, P4, P13, P16, P19, P26) I think the grading for master's and doctorate degrees is appropriate (P11)
	Partially Sufficient/Partially Appropriate (11)	They should get a score for a second university degree only related to their branch (P1, P10, P14, P15, P20) Inequality due to geographical differences should be eliminated (P5) Graduate education should be in their branches and with thesis (P18, P25) The score obtained from the doctorate should be higher (P24) Administrators with graduate education should also receive increased additional course fees (P24)
	Insufficient or inappropriate (10)	Graduate education should be completed before starting administration (P2) They should be promoted to administrative positions after an internship period in which oratory, diction, and leadership qualities are measured (P2) I think master's diplomas aren't reliable (P2) This criterion should not exist due to geographical differences (P6) The principal's nomination should be sufficient (P23)

As seen in Table 7, 7 participants find *the scores obtained* from the training *sufficient*, 10 find them insufficient, and 11 find them *partially sufficient*. The views of some of the participants who stated that the scores obtained from the training *were sufficient* for the appointment of administrators are as follows:

I think this section is appropriate, it can be applied as it is (P13). I find the scores for master's and doctoral programs appropriate (P11). Yes, I agree; it should be updated from time to time (P16).

The views of some of the participants who find the scores obtained from the training *partially sufficient* are as follows:

Points are given for studying at a second university, but they should only get points if they study at a second university related to their branch. If it is a master's degree in their branches, higher points should be given. A higher score should be given for a doctorate in their branch and in Educational Administration (P1). The points here provide sufficient incentives, but disadvantaged places do not have these opportunities. Our colleagues working in rural areas have very few chances to receive this training, which can be balanced by giving them extra points under a different scoring heading. Additional points can be given to administrators working in schools in disadvantaged areas. Even within Istanbul, these opportunities vary according to school type (P5). Non-thesis master's degrees should not receive points because they can be done for money, without any effort, and without attending classes. It is more difficult to do a master's degree with a thesis both financially and in terms of effort, and it should get a much higher score (P18). I find the doctorate score very low; it should be higher (P24).

The views of some participants who find the scores obtained from the trainings *insufficient* or *inappropriate* in the appointment of administrators are as follows:

> *No, I do not find it appropriate. Under the current conditions, administration cannot be done with a master's degree and a doctorate together. These studies should be done before starting administration. After an internship period in which oratory, diction, and leadership qualities are measured, one should progress to management. Master's degrees and doctorates can be done afterward, and administrative leave can be given, but these two cannot be done together (P2). I do not find this section appropriate. The ministry should train them within its organization, the ministry itself can provide school administration training. There are regional differences in Turkey, and while administrators in Istanbul can easily access universities, our friends working in Anatolia do not have the chance to reach these opportunities (P6). I am also against this part. I will not say its name, but a university offered us to find students to give them a master's degree diploma, is this right? They bought these diplomas for 4-5 thousand Turkish liras, and they will get points from this (P28). I do not find it appropriate to get points from a second university, I think that bachelor's, master's, and doctorate degrees should be done in their branches (P12). Such scoring should not be done. I know many people who have a master's degree or a doctorate but are not good leaders. I care about experience; I do not find a master's degree and doctorate very necessary (P27). I disagree. There is an inequality between men and women. While our male friends were doing their master's degrees and PhDs, I could not do any of these, although I wanted to, because I was a woman, I had children and I had additional responsibilities at home. Positive discrimination should be provided for women in the scoring here. In addition, at that time it was not as easy as it is now; there was no distance education, and it should not be scored at all (P23).*

Participant's views on the scores obtained from *the length of service* of those to be assigned as administrators are shown in Table 8.

Table 8. Participants' Views on the Scores Obtained from Length of Service

Category	Theme	Code
Service Periods	Sufficient or Appropriate (4)	Yes, proportionate, I find it right, I agree (P11, P16, P21, P26)
	Partially Sufficient/Partially Appropriate (13)	All the time spent as a teacher should be evaluated (P1) After 4 years, points should not be reduced by 50%; they should be full points (P3, P4, P9, P13, P14, P27) Not all schools can benefit from the trainee teachers rating (P20)
	Insufficient or inappropriate (11)	As experience increases, it puts you at a disadvantage (P2, P5, P6, P8, P10) No points should be given for dual education (P7) These criteria should not exist at all (P12)

As seen in Table 8, four of the participants find the scores obtained from the length of service *sufficient*, 11 find them *insufficient*, and 13 find them *partially sufficient.* The views of some of the participants who find the scores obtained from the length of service in the appointment of administrators *sufficient* or appropriate are as follows:

> *Yes, proportionate, I find it right, I agree (P11 P16, P21, P26).*

The views of some of the participants who find the scores obtained from their length of service *partially sufficient* are as follows:

> *Giving full points for the first 4 years and then reducing them by 50% is implemented to pave the way for our young friends, but the entire period of teaching should be evaluated (P1). I strongly oppose the 50% reduction of the points after 4 years; they should receive full points for the time they have worked (P3). I think that the work done in their branches should bring additional points. There is no need to give points to school administrators regarding the trainee teachers in the school. It is not fair, not every school can benefit from this opportunity (P20).*

The views of some participants who find the scores obtained from their length of service *insufficient* or in*appropriate* are as follows:

> *I find this section absolutely inappropriate. The more experience, the more disadvantaged. It should be the opposite; there should be full points for each year of service, and if the person is incompetent, they should be dismissed from that position (P10). There should not be points for length of service, young teachers who have just graduated can also be very successful, they should not be prevented (P12).*

Participants' views on the scores obtained *from academic and professional experience* are shown in Table 9.

Table 9. Participants' Views on the Scores Obtained from Academic and Professional Experience

Category	Theme	Code
Academic and Professional Experience	Sufficient or Appropriate (6)	There should be criteria, and I find the scoring appropriate (P3, P10, P11, P17, P18) Agree (K12)
	Partially Sufficient/Partially Appropriate (16)	Appropriate but sufficient time should be given (P3) All in-service trainings should be considered in scoring (P4) Difference in geographical location and level of education (P6) Problem of trust in written articles (P6, P7, P14, P16, P24) Lack of contribution and relevancy in administration (P7, P14, P16, P24, P10, P20, P21)
	Insufficient or inappropriate (6)	Causing unfair competition (P1, P23) Regional differences and injustice (P5) Not related to administrative qualifications (P8) Scope issue (P26)

As seen in Table 9, 6 participants find the scores obtained from academic and professional experiences *sufficient*, while 6 find them *insufficient and* 16 find them *partially sufficient.* The views of some of the participants who stated that *the scores were sufficient* are as follows:

> *Yes, there should be criteria that guide academic studies, and I find the scoring appropriate (P11). I agree with this section; I find the scoring appropriate (P12).*

The views of some of the participants who find the scores obtained from academic and professional experiences *partially sufficient* in the appointment of administrators are as follows:

> *I find it appropriate, but there will be a need for time while carrying out the administration; conveniences should be provided (P3). Yes, I find this section appropriate, but in terms of in-service training, if you have received 30 in-service trainings, it gives points for one of them; at least half of them should be given points (P4). I partly agree with this, but in some schools, there is no chance for trainee teachers to be there. There should be a scoring according to the type of institution. Regarding the articles, I am hesitant about whether the person actually writes them or not, because we hear various things. For example, some articles are written by someone else without any effort in exchange for money (P6). If they write the article themselves, it is an effort-intensive task, and they can get points here. Points should not be taken for teaching a course at the university; this has nothing to do with administration. Also, having trainee teachers in the school is not a situation related to the success of school administrators; points should not be taken from this issue (P16). I don't think it is meaningful to get points from being an educational administrator. There is no effort from the school principal or vice principal here. If you are not on good terms with the district directorate, seminars are not given in your school; it is unfair (P21). I am indecisive about giving points only to the principal in schools with trainee teachers. If we become an educator, we can get points here; we can get points from our in-service trainings... (P20).*

The views of some participants who find the scores obtained from academic and professional experiences *insufficient* or *inappropriate* are as follows:

I find it unfair because having a trainee teacher at school is not related to the success of the principal. Some schools have them, some do not, and this is an unfair competition, and no points should be given in this section. There is no book writing related to professional experience in this section. Additional points should be given to books, journals, and newspapers written in the field of education (P1). Since the sociocultural structure varies according to regions, there is an injustice because some of our fellow administrators cannot access these opportunities. Teachers and administrators working in disadvantaged schools may not have access to these opportunities (P5). I am also against this section; writing articles does not increase the quality of administration (P8). The school principal should not be given any points about trainee teachers at school. My deputy principals and teachers take all the workload here (P23). I find it insufficient; the article is good, but the congresses and workshops they attend, and presenting papers in congresses should be evaluated. Regarding trainee teachers, not only should the principal be given points, but also the vice principal should be given points (P26).

Participants' views on the scores obtained *from institution development experience* for those to be appointed as administrators are shown in Table 10.

Table 10. Participants' Views on the Scores Obtained from the Institution Development Experience

Category	Theme	Code
Institution Development Experience	Sufficient or Appropriate (7)	Agree (P13, P16, P23, P26, P27) I find it successful, especially in patenting (P24)
	Partially Sufficient /Partially Appropriate (10)	Trademark registration is not suitable for all school types (P2, P7, P21) Points from a different area can be added to disadvantaged schools (P3) Trademark registration is not suitable for all school types (P19, P17) Points from a different area can be added to disadvantaged schools (P18)
	Insufficient or inappropriate (11)	Some schools cannot benefit from this opportunity due to environmental factors (P6, P9, P11) I think it is unfair (P8)

As seen in Table 10, 7 of the participants find the scores obtained from the institution development experience *sufficient*, 11 find them *insufficient, and* 10 find them *partially sufficient*. The views of some of the participants who stated that the scores obtained from the institution development experience were *sufficient* are as follows:

I agree (P13, P16, P23, P26, P27). I find it appropriate (P22). I find this section successful, especially in patenting (P24).

The views of some of the participants who find the scores obtained from the institution development experience *partially sufficient* are as follows:

I find it partially appropriate; trademark registration concerns vocational secondary schools. It is not suitable for Anatolian secondary schools. Regarding the projects, the teachers form the basis of the work; the school principal does not have any labor. Since the teachers in the project schools are selected, the school principal of these schools has an advantage (P2). I think there is injustice here; for example, there is unfair grading between those working in vocational secondary schools and those working in general secondary schools, or between those in primary schools and those in secondary schools. In order to equalize the conditions, disadvantaged schools can be given points from a different area (P3). It is difficult to implement; patenting is very costly... (P19).

The views of some participants who find the scores obtained from the organization development experience *insufficient* or *inappropriate* are as follows:

Some of the items concern especially vocational secondary schools, science secondary schools, and fine arts secondary schools; they cannot contribute to administrators in basic education (P1). For example, since our school is a central school, trainings are held at our school all the time. We get points for being educational administrators or educators, but

many schools cannot benefit from this opportunity due to environmental factors, so there is no justice here. I think there is injustice between institutions regarding patents and projects due to environmental factors (P9). I also find this section wrong; I don't find it fair. Not every school can access the opportunities here, there is no equality of opportunity between schools. In terms of projects, there can be such simple works that these are not projects. I don't see the projects done here as projects unless a significant and critical situation is put forward, and no points should be awarded for this. We have left all our work, we put pressure on teachers to prepare projects (P8).

Participants' views on the scores obtained from the school development experience are shown in Table 11.

Table 11. Participants' Views on the Scores Obtained from School Development Experience

Category	Theme	Code
School Improvement Experience	Sufficient or Appropriate (2)	Agree (P19, P26)
	Partially Sufficient / Partially Appropriate (8)	There are student transfers for points (P3) Points should be taken from the projects done by the students themselves (P16) It does not show the success of the administrator (P20) Scoring should be changed according to workload (P23)
	Insufficient or inappropriate (17)	There is inequality between schools (P1, P6, P7, P14) Points should not be given only for the last 4 years, open to abuse (P4, P12, P27) There is geographical inequality (P5) Courses should be covered by salary (P8)
	Neutral	I'm undecided (P13)

As seen in Table 11, 2 of the participants find the scores obtained from the school development experience *sufficient*, 17 find them *insufficient, and* 8 find *them partially sufficient.* One participant remained *undecided.* The views of some of the participants who stated that the scores obtained from the school development experience are *sufficient* for the appointment of administrators are as follows:

I agree (P19, P26).

The views of some of the participants who find the scores obtained from the school development experience *partially sufficient* are as follows:

DYK activities are not in every school, it is not fair. We also get points based on the students who ranked in the top three in competitions, project schools have an advantage here (P2). There are transfers of ranked students. We hear that the same child transfers to 5-6 schools during the year. This is a part open to abuse, it is difficult to find such students in disadvantaged schools (P3). I partially agree that administrators should receive additional points if they participate in these activities. The administrator should receive points if he/she has taken part in the students who are ranked. There should be no points for achievements that are the result of the efforts of the family (P16). There is also injustice in the ranking of students. When you work in a school in a district with a high socioeconomic level, you can reach such students very easily, and there is an injustice in this sense (P18). IEP, DYK, home-hospital teaching, and extracurricular education may not be available in every school. It does not show the success of the administrator; such scoring should not be done. Disadvantaged schools will suffer from this (P20). The scoring here is too few, and why is only one of them given points? The educator should be given points for each year. Why is the administrator of the educator given the same points? The scoring should be changed according to the workload (P23).

The views of some participants who find the scores obtained from the school development experience *insufficient* or *inappropriate* are as follows:

For example, we do not have IYEP-DYK, which means that all of our children are successful, and we will not get points here. In my view, the score of the principal who has

students in IEP should be reduced. Why didn't you create an infrastructure for so many students beforehand and ensure that these children are trained at the classroom level? If a school has established its own team and they have achieved local or international success with its own team in competitions, school administrators should be given points. But if a person says that he/she has achieved success as a result of his/her own individual development, then school administrators should definitely not be given points. No points should be given for support education, there is the teacher's labor here (P14). IYEP, DYK, home education, and hospital teaching are actually open to abuse. When there is no IYEP student in their school, they force one out, get approvals, open the course, and then close it. There are also abuses related to the top ranked students (P10). It is not a project that can be implemented in every school, it is not fair. We hear about various fraudulent issues related to students who are ranked in international or national competitions, such as a student with a degree being constantly transferred between schools. Disadvantaged schools do not have students with such degrees, there is a disadvantage here (P12). It is impossible for administrators working in disadvantaged areas to get points under this heading. In districts with high socioeconomic structures, students can get degrees in various competitions with the efforts of parents. Administrators working in such schools have an unfair advantage (P5). Teachers should not give courses outside the 8.00 a.m. and 5.00 p.m. teaching hours. Teachers should do this within the scope of their salary during working hours; teachers beg students not to close their courses in the current practice. The current practices do not do anything except make money for the teacher (P8).

The view of the participant who answered *"Neutral"* about the appropriateness of the scores obtained from school development experience in the appointment of administrators is as follows:

I'm undecided (P13)

Participants' views on the points obtained from the awards are shown in Table 12.

Table 12. Participants' Views on the Points Obtained from Awards

Category	Theme	Code
Awards	Sufficient or Appropriate (11)	I find it appropriate (P3, P10, P11, P16, P18, P22, P26, P27, P28) *I find it appropriate as long as you are fair (P7)*
	Partially Sufficient / Partially Appropriate (6)	The whole professional life should be evaluated (P4, P9, P14, P15, P19, P20)
	Insufficient or inappropriate (11)	*It's not appropriate* (*P1, P5, P6, P17, P21)* *I do not think that the rewards are given fairly (P2, P12)* Politics should not have an impact *(P8, P23, P24, P25)*

As seen in Table 12, 11 of the 28 participants find the points obtained from the rewards *sufficient*, 11 find them *insufficient*, and 6 find them *partially sufficient*. The views of some of the participants who find the points obtained from the awards *sufficient* or appropriate are as follows:

I find it appropriate (P3, P10, P11, P16, P18, P22, P26, P27, P28). I find it appropriate as long as you are fair (P7).

The views of the participants who find the points obtained from the awards *partially sufficient* are as follows:

I object to evaluating only the documents from the last four years—do our achievements from earlier years count for nothing? If a person can stay in administration for 13-15 years, it means that this person has a capacity, and this should have a value (P4).

The views of some participants who find the points obtained from the awards *insufficient* or *inappropriate* are as follows:

All certificates of achievement received from the beginning to the end of one's professional life should be evaluated; the person has worked hard for each one and should receive

points for each effort (P1). I don't think that the awards are given fairly. MoNE has given certificates of achievement to everyone in the last two years, and sometimes the people we propose who have shown real success may not be given certificates of achievement. So, I don't find it fair (P12). Even those who were on leave due to the pandemic and who were abroad were given certificates of achievement. All teachers have been given certificates of achievement in the last 2 years, the criteria are wrong. The certificates of achievement are valid if you received them during my period of power, the ones received before are not valid (P25).

The views of the participants on the points deducted from those to be appointed as administrators due to *penalties* are shown in Table 13.

Table 13. Participants' Views on Points Deducted Due to Penalties

Category	Theme	Code
Penalties	Sufficient or Appropriate (15)	Yes, I find it appropriate if they were punished (P1, P2, P3, P9, P10, P19, P27) If points are given for rewards, minus points should be given for punishments (P4)
	Partially Sufficient/ Partially Appropriate (7)	Points should not be deducted from warning and reprimand penalties (P7, P12, P25) All penalties should be evaluated (P14) Higher scores should be lowered (P20) Punishments are not given fairly (P20)
	Insufficient or inappropriate (6)	There may be unfair penalties, this should be analyzed (P5) A person who has received a salary cut should not continue to be an administrator (P6, P16, P17, P24) Complaints through CIMER are very easily penalized, this also prevents receiving a certificate of achievement (P8)

As seen in Table 13, 15 of the 28 participants find the points deducted due to penalties *sufficient*, 6 find them *insufficient, and* 7 find them *partially sufficient*. The views of some of the participants who stated that the points deducted due to penalties *were sufficient* or *appropriate* are as follows:

Yes, I find it appropriate if they were punished (P1, P2, P3, P9, P10, P19, P27). Maybe, if points are given for the reward, minus points should be given for the punishment (P4).

The views of some of the participants who find the points deducted due to penalties in the appointment of administrators *partially sufficient* are as follows:

Points should not be deducted from warning and reprimand penalties, because it is a penalty that is very easily given, it can be applied for big penalties (P7). Points should be deducted, but why only one? If there is more than one punishment, it should be evaluated (P14). Higher points should be deducted if the penalties are fair (P20).

The views of some participants who find the points deducted due to penalties *insufficient* or *inappropriate* are as follows:

Nowadays, there are so many unjust complaints and punishments can be taken easily that it is necessary to look at how fair the punishments are. There may be unfair punishments, this needs to be analyzed (P5). The scores are too high, they should be lowered a bit. An administrator who has received a salary deduction should not continue to be an administrator anyway (P16). Currently, teachers and administrators are thrown in front of parents. They make complaints through CIMER, and we are all given penalties very easily, this also prevents us from receiving certificates of achievement (P8).

The views of the participants on the common provisions for those to be appointed as administrators are shown in Table 14.

Table 14. Participants' Views on "Common Provisions" for Those to be Appointed as Administrators

Category	Theme	Code
Common Provisions	Sufficient or Appropriate (3)	I find it right (P3, P24, P28)
	Partially Sufficient/Partially Appropriate (11)	There should be an appointment as acting administrator (P1, P14, P15, P27) I find it appropriate to have vice principals of different genders in schools (P2, P5, P10, P11, P12) Rotation should be optional (P9, P18)
	Insufficient or inappropriate (13)	Rotation periods should be extended, and appointments should be made as principal *(P25, P26)*
	Neutral	I'm undecided (P6)

As seen in Table 14, 3 of the participants find the common provisions *sufficient,* 11 of them find them *insufficient*, 13 of them find them *partially sufficient,* and 1 of them is neutral. The views of some of the participants who stated that the common provisions are *sufficient* or *appropriate* in the appointment of administrators are as follows:

I find it right (P3, P24, P28).

The views of some of the participants who find the common provisions *partially sufficient* are as follows:

I find it appropriate to have vice principals of different genders in schools (P10). The title should not be by assignment but as an administrator. There should be rotation, but the duration is short. I find it appropriate for them to work in schools related to their branches (P14). There should be no time limit as 4+4, it should be optional. If they want to stay after completing 4 years, they should stay directly. It is important to have courses that they can teach in primary schools, kindergartens, and girl's vocational high schools, but it is not necessary for all schools. I am definitely against foreign language and religious culture teachers becoming principals in primary schools, they should have worked as classroom teachers so that the principal can understand the teachers in the school (P9). I find 4+4 very incomplete, the first year is spent getting used to it, and the last year is spent disrupting the work because they will leave. There are 2 years left, which is very insufficient for a school, it harms the institution. There should be no time limit here, there should be optional appointments. They should be able to go to another city with the title they hold. The administrator staying at the school for a long time creates an institutional culture (P18).

The views of some participants who find the common provisions *insufficient* or *inappropriate* are as follows:

The 8-year practice can be applied as a whole. Principals or vice principals should be given the title of primary principal or vice principal. They should be able to benefit from inter-provincial transfers and should not stay in the same school for more than 8 years. Our titles should be given as permanent, and we should be able to request inter-provincial transfers. We should not be assigned to the provincial order; in other words, assistant principalship should also be a permanent position (P26).

The view of the participant who stated as *neutral* about the common provisions in the appointment of managers is as follows:

I am undecided (P6)

CONCLUSION, DISCUSSION and RECOMMENDATIONS

The general requirements for those to be appointed as managers are appropriate. The few criticisms focus on the fact that administration requires special training and academic background and that there should be a multi-stage and sensitive selection method for this. This result overlaps with the results of Berk, Topcan, and Özdemir's (2015) studies in terms of the appropriateness of the general requirements. Berk, Topcan, and Özdemir (2015) also concluded that the general conditions are appropriate for the appointment of meritorious administrators. The conclusion that there should be a multi-stage and sensitive selection method is similar to the results of Eğitim-Bir-Sen (2019) and Uygur (2021). In the aforementioned studies, it is emphasized that there should be some prerequisites (although the duration and qualifications of these prerequisites are discussed) for those who will be appointed as administrators, but it is pointed out that special training and academic background are needed for administration. Therefore, there is a broad consensus on the development of a multi-stage, responsive selection process. Although the General Conditions are accepted as appropriate, it would be appropriate for candidates to undergo professional executive training to reach international standards for the appointment of administrators. In fact, the requirement of "having a certificate in Educational Administration", which is included in the general conditions but not currently applied (not required), can partially meet the need for both pre-service intensive administrator training and a sensitive selection process if it is placed on an appropriate basis in terms of duration and content.

The special conditions to be sought for those to be appointed as managers are partially sufficient. In particular, criteria such as appropriateness for professional branches, length of experience, and transition from lower administrative levels are insufficient. For example, direct appointments from senior management to principalships are not right, the duration condition for working in lower management positions is low, and foreign language and religious culture branches, which can be appointed to all levels of education, are given an unfair advantage. Since school principalship is a position that requires being in the field and being in contact with all stakeholders, it is not appropriate to assign people who have worked in the central organization of the ministry or provincial-district national education directorates to school principalship regardless of other conditions. As emphasized by Bozkurt (2005), Aktepe (2014), and Uygur (2021), the criticisms regarding the length of experience should be carefully considered and reviewed in the principalship assignments, and the training and experiences that contribute to and form the basis for administration should be prioritized. The result of the limited number of years spent in lower management levels is similar to those of Seçkin (2019). In his study, Seçkin (2019) concluded that the criterion of having served as founding principal, deputy principal, vice principal, and acting principal teacher separately or in total for at least one year is insufficient in terms of the necessary experience and expertise.

The Special Conditions for the appointment of deputy and vice principals are partially sufficient. The criteria that are deemed insufficient are the low number of years spent as a teacher, the strict condition of being appointed to the school that has their branches, and the fact that the current position is not protected in inter-provincial transfers. A similar result is seen in the study by Dilbaz and Atış (2021). Dilbaz and Atış (2021) also evaluated the priority of branches as a more binding prerequisite for appointment to the position of vice principal or deputy principal as a strict attitude.

The points obtained from the education of those to be appointed as administrators *are generally sufficient. However*, it is not right to give points for a second undergraduate education. The points obtained from postgraduate education should be reviewed, and measures should be taken for inequalities arising from geographical differences. The sufficiency of the scores given to the training of administrator candidates is similar to the results of Berk, Topcan, and Özdemir (2015) and Demirer and Ergezen (2022). In Berk, Topcan, and Özdemir's (2015) study, it was emphasized that the scores received from the trainings were appropriate, but the score given to the doctorate degree in Educational Administration should be higher. Considering that in the 2021 regulation, more points are given to the doctoral degree (from 10 to 15) compared to the 2014 regulation,

the results obtained from the trainings are similar. Likewise, Demirer and Ergezen (2022) emphasize that more opportunities should be given to school administrator candidates with doctoral degrees. However, geographical inequalities are very evident in Turkey, especially in access to graduate education. It is obvious that a school administrator candidate working in a metropolitan city and a school administrator candidate working in a remote village cannot access graduate education under the same conditions. The result regarding inequalities in access to postgraduate education opportunities is also noteworthy in Ayral's (2016) study. Aktepe (2014) and Konan, and Bozanoğlu and Çetin (2017) argue that postgraduate education should be a prerequisite for school administration rather than bringing points. Eğitim-Bir-Sen (2019) and Demirer and Ergezen (2022) emphasize that administrator candidates with a doctorate degree should be exempt from some other conditions (such as exams, interviews, etc.) considered in the appointment. However, in the historical process, having a postgraduate degree in Educational Administration has not gone beyond being a reason for preference (Çamur, 2003).

The points set for length of service in administrator appointments are partially sufficient. It is not right that the score decreases by half after four years in all positions, especially in teaching. Demirer and Ergezen (2022) partially support the results of this study by stating that there is not a strong relationship between length of service and administrative performance. However, the fact that the length of service, which is called seniority in some developed countries such as the USA and Japan (Akın, 2012) and European Union countries (Bozkurt, 2005; Pelit, 2013), is considered in the appointment of administrators, although the duration is different, reveals that this criterion cannot be ignored even if some adjustments are made in the scoring. However, it would not be correct criteria when the scores that administrator candidates collect while performing their teaching professions in the ordinary course of life exceed the doctorate degree, which can be obtained with special effort, labor, and financial burden, when the scoring section are considered holistically. It is an unconditionally accepted fact by professionals that the doctorate degree and the performance required by seniority are very different.

Scores from academic and professional experience are partially appropriate. There are serious concerns about the accuracy of the scores obtained from articles and academic studies, their relevance, and their contribution to administration. Aktepe (2014) also supports the results of this study by stating that the practical aspects of academic studies should be strengthened.

The scores obtained from institution and school development experience are not appropriate. The inequalities between institutions and regions and the fact that almost all of the criteria are beyond the efforts of the administrators are the most important reasons. All criteria under the *institution and school development experience* are beyond the individual efforts of the administrator candidate. Recepoğlu and Kılınç (2014) and Eğitim-Bir-Sen (2019) also emphasize that the candidate's efforts/performance should be linked to measurable standards in the appointment of administrators and argue that environmental factors violate the principle of equality, and some regulations are needed in this regard. In this respect, the findings of these studies overlap with the results of this study.

The Points Obtained from Awards and Punishments, which are given by paying attention to fairness in the appointment of administrators, are largely appropriate. The inappropriate aspects are concentrated on the fact that it is not fair and that it does not cover the entire professional life of the administrator candidates. This result coincides with the results of Özmen and Kömürlü (2010), Akçadağ (2014), Berk, Topcan, and Özdemir (2015), and Ergin (2016). Özmen and Kömürlü (2010) emphasize that awards and punishments should be considered in the appointment of administrators while pointing out that merit, objectivity and scoring are always a matter of debate. On the other hand, Akçadağ (2014) emphasizes that awards that are rational and conferred in a way that does not cause unfair competition increase the quality of administrative appointments. While Berk, Topcan, and Özdemir (2015) emphasized the necessity of awards and punishments, they differed from the results of this study in terms of added and subtracted points. Ergin (2016) suggests that awards and punishments should be taken into consideration in administrative assignments but also emphasizes that they are important criteria that should be

handled with a transparent and objective approach. Konan, Çelik, and Çetin (2018) point out that administrators with merit and competence can only be selected with criteria that prioritize merit. On the other hand, the awards received by the administrator candidates while teaching are related to their success in teaching, not in administration. It may not be possible for an administrator candidate who is successful in teaching to exhibit the same success in administration as he/she exhibited in teaching. Therefore, while evaluating the awards, it would be useful to reconsider the awards given for teaching.

Although the criterion of "having vice principals of different genders" among the common provisions in the appointment of administrators is considered appropriate, it is not a necessary criterion for selecting good principals in general. Especially term durations and reappointments after the expiration of maximum time limits need to be reconsidered. Administrative positions should be based on appointments, not on assignments, and this appointment should also be considered in out-of-province transfers. Although the practice of serving as a principal in the same school for a total of eight years (4+4) is also seen in South Korea (Korea Ministry of Education, 2024; Öztürk and Akkuş), both term durations are approached cautiously in Turkey.

Recommendations

Scores that are not directly related to the success of the administrator candidate or to which the administrator candidate does not actively contribute and that are only based on the type of school/institution or region where they are working should not be considered.

Certificates, awards, penalties, etc. received after the last assignment should be taken into consideration. An achievement should not be valid for more than one appointment.

There should be a maximum limit on the points to be obtained for each section, and the existing maximum limits should be reviewed.

Postgraduate education in Educational Administration and Supervision can be a prerequisite after measures are taken to eliminate regional inequalities.

Those appointed as managers should not be left alone, and their leadership competencies should be developed through various trainings.

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Conflict of Interest Statement

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Ethics Committee Permission

We, the author(s), declare that this study was conducted within the framework of ethical rules. Within the scope of our study, research requiring ethics committee permission was conducted and the necessary approval was obtained from the Ethics Committee of Marmara University Institute of Educational Sciences on 26.09.2023.