

VOL (5) NO:1
2023

JOURNAL OF
ADVANCED
EDUCATION
STUDIES

İLERİ EĞİTİM
ÇALIŞMALARI DERGİSİ

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Journal of Advanced Education Studies

Cilt 5 - Sayı 1 - Haziran 2023

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**THE RELATIONSHIP BETWEEN PRESCHOOL TEACHERS'
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CONFIDENCE AND THEIR ATTITUDE TOWARDS TECHNOLOGY**

Ezgi Düriye ÇÖREKÇİ¹

Muhammed ÜNAL²

Ahmet BORA³

Geliş Tarihi/Received: 31.03.2023 Elektronik Yayın/Online Published:20.06.2023

DOI: 10.48166/ejaes.1273919

ABSTRACT

This study aims to examine the relationship between preschool teachers' technological pedagogical content knowledge (TPACK) confidence and their attitude towards technology. In addition, it was aimed to determine whether preschool teachers' technological pedagogical content knowledge and its sub-dimensions predict teachers' attitudes towards technology. The study group consists of 200 preschool teachers who teach 36-72-month-old preschool children in the 2020-2021 academic year. This quantitative study is designed in the single and relational screening model, one of the general screening models. The data were collected using the "Technological Pedagogical Content Knowledge Self-Confidence Scale (TPACKACKS)", "Attitude Towards Technology Scale" and "Personal Information Form". The data obtained were analyzed with SPSS 26.0 and JASP 0.16 programs and the normality test, Pearson Correlation test, and multiple linear regression analysis methods were used. As a result of the study, a significant positive relationship was found when the relationship between preschool teachers' attitudes towards technology and technological pedagogical content knowledge and sub-factors of it was examined. When the other findings obtained from the research were discussed, it was concluded that the relationship between preschool teachers' attitude towards technology scores and technological content knowledge sub-dimension scores was relatively low compared to other sub-dimensions.

Keywords: Technological Pedagogical Content Knowledge (TPACK); attitude towards technology; preschool teachers

¹ Lecturer, Mersin University, Mersin, Turkey, ezgidcorekci@mersin.edu.tr, ORCID: 0000-0002-6807-1337

² Lecturer, Bitlis Eren University, Bitlis, Turkey, munal@beu.edu.tr, ORCID: 0000-0003-0907-6629

³ Lecturer, Suleyman Demirel University, Isparta, Turkey, ahmetbora@sdu.edu.tr, ORCID: 0000-0002-4312-8819

OKUL ÖNCESİ ÖĞRETMENLERİNİN TEKNOLOJİK PEDAGOJİK ALAN BİLGİSİ ÖZGÜVENİ İLE TEKNOLOJİYE YÖNELİK TUTUMU ARASINDAKİ İLİŞKİNİN İNCELENMESİ

ÖZET

Bu çalışmanın amacı okul öncesi öğretmenlerinin teknolojik pedagojik alan bilgisi (TPAB) özgüveni ile teknolojiye yönelik tutumu arasındaki ilişkinin incelenmesidir. Bunun yanı sıra okul öncesi öğretmenlerinin teknolojik pedagojik alan bilgisi ile alt boyutlarının öğretmenlerin teknolojiye yönelik tutumunu yordayıp yordamadığını incelemek amaçlanmıştır. Çalışma grubunu 2020-2021 eğitim ve öğretim yılı 36-72 aylık okul öncesi dönem çocuklarına eğitim veren 200 okul öncesi öğretmeni oluşturmaktadır. Bu çalışma, genel tarama modellerinden tekil ve ilişkisel tarama modelinde tasarlanmış nicel bir çalışma niteliğindedir. Araştırmanın verileri, “Teknolojik Pedagojik Alan Bilgisi Öz Güven Ölçeği (TPABÖGÖ)”, “Teknolojiye Yönelik Tutum Ölçeği” ve “Kişisel Bilgi Formu” kullanılarak toplanmıştır. Elde edilen veriler SPSS 26.0 ve JASP 0.16 programları ile analiz edilerek normallik testi, Pearson Correlation testi ve çoklu doğrusal regresyon analizi yöntemleri kullanılmıştır. Araştırmanın sonucunda okul öncesi öğretmenlerinin teknolojiye yönelik tutumu ile teknolojik pedagojik alan bilgisi ve teknolojik pedagojik alan bilgisi alt boyutları arasındaki ilişki incelendiğinde pozitif yönde anlamlı bir ilişki bulunmuştur. Araştırmadan elde edilen diğer bulgular incelendiğinde okul öncesi öğretmenlerinin teknolojiye yönelik tutum puanları ile teknolojik alan bilgisi alt boyutu puanları arasındaki ilişkinin diğer alt boyutlara göre nispeten düşük seviyede olduğu sonucuna ulaşılmıştır.

Anahtar Kelimeler: Teknolojik Pedagojik Alan Bilgisi (TPAB); teknolojiye yönelik tutum; okul öncesi öğretmenleri

1. INTRODUCTION

Educational reforms for the net generation emphasize the inclusion of information and communication technologies in teaching (Hsu, 2015). Interest in technology applications to improve teachers' pedagogical content knowledge (PCK) has increased in recent years (Campbell & Abd-Hamid 2013; National Research Council [NRC], 2012). Qualified teachers should structure learning opportunities for their students to access information most understandably and easily. In the structuring process, the teacher needs to know the subject he/she will teach and the methods, techniques, practices and methods he/she will use while transferring this knowledge (Ekici & Dereli, 2022). The concept of pedagogical content knowledge emerged from the intersection of the teacher's pedagogical knowledge and subject content knowledge (Yolcu, Kaya Durna, Akan, & Uluçınar Sağır, 2022).

The concept of pedagogical content knowledge was developed by Shulman (1986) and conceptualized by Pierson (2001) (Gökçearslan, Karademir, & Korucu, 2017). The concept of pedagogical content knowledge integrated with information communication technologies was named Technological Pedagogical Content Knowledge (TPACK) by Mishra and Koehler (2006). Technological Pedagogical Content Knowledge is an understanding of the technology, pedagogy and content components that underlie teaching with technology and the interactions between these components (Koehler & Mishra, 2009). The intersection and combination of these essential components

constitute the other components of the TPACK Model (Kabakçı Yurdakul, 2011). TPACK is a set of integrative knowledge such as technological knowledge (TK), pedagogical knowledge (PK), content knowledge (CK), technological pedagogical knowledge (TPK), technological content knowledge (TCK) and pedagogical content knowledge (PCK) (Angeli & Valanides, 2009; Doğru & Aydın, 2017; Koehler & Mishra, 2009).

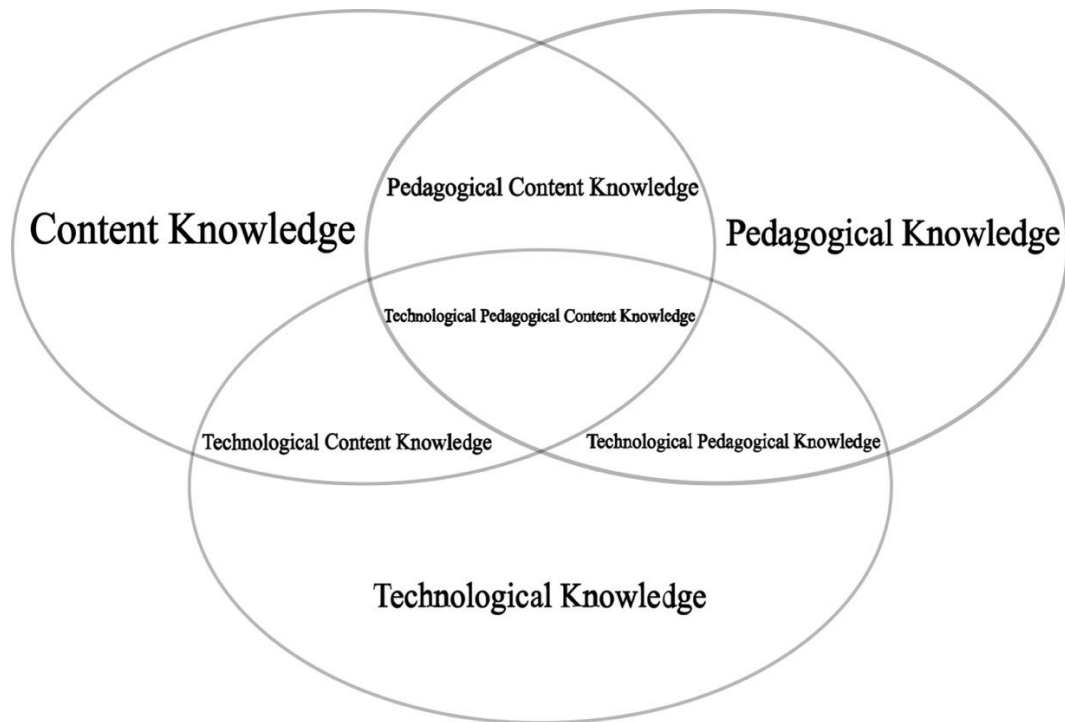


Figure 1. TPACK is focused on the complex, multifaceted nature of teacher knowledge (Mishra and Koehler 2006).

Mishra and Koehler (2005, 2007) explain the components of the TPACK Model in Table 1 below:

Table 1. Description Of TPACK And Its Sub-Factors

Pedagogical Knowledge (PK)	Teachers' deep knowledge of teaching and learning processes, practices or methods.
Content Knowledge (CK)	Teachers' knowledge of the subject to be learned or taught.
Technological Knowledge (TK)	Teachers' knowledge of standard technologies (blackboard, books, etc.) and digital technologies (video, storytelling, smartboard, educational software, etc.).
Pedagogical Content Knowledge (PCK)	Teachers' knowledge of the teaching approach for teaching the subject area.
Technological Pedagogical Knowledge (TPK)	Teachers' understanding of how technology can transform learning and teaching when used in specific ways.
Technological Content Knowledge (TCK)	The knowledge of teachers that emerges from the combination of technology and content knowledge.
Technological Pedagogical Content Knowledge (TPACK)	Teachers' knowledge of the technologies and instructional approaches they can use in the teaching process consists of the basic components of technology, pedagogy, and content area.

It is essential for the construction of the future of society that teachers, who have the role of raising qualified individuals who can keep up with the information society, are trained as individuals who can adapt to innovations, think critically, think creatively, and learn to learn. In today's information and technology age, where innovations are rapidly advancing, for a developed society and a successful education, teachers should follow technological developments and use technology in a meaningful way to contribute to their student's learning, that is, they should have sufficient TPACK and continuously improve their TPACK throughout their professional lives (Kaya & Yılayaz, 2013; Siddiq, Scherer, & Tondeur, 2016). The "2023 Education Vision" document was published by the Ministry of National Education in 2018, under the title of digital content and skill-supported transformation in learning processes, it is aimed for children to use information communication technologies in the context of production, developing solutions to problems and realize their dreams. In addition, teacher competence is also examined in this document, and it is stated that for teachers to use digital content in the classroom, environments suitable for questioning, design thinking, and conceptual learning should be established (Millî Eğitim Bakanlığı [MEB][Turkish Ministry of National Education], 2018). In order to help teachers learn the content, pedagogy, and technology skills they will need throughout their careers and to develop curricula, the International Society for Technology in Education (ISTE®) has determined the ISTE® Standards for Teachers (ISTE-ST) (DeSantis, 2016). In this context, preschool teachers use methods such as STEAM education, algorithmic thinking skills, coding with or without computers,

robotics, 3D printers, digital games, and augmented reality to integrate technology into the educational environment (Canbeldek, 2020; Başaran, Nacar, Aksay, Tüfekçi, & Vural, 2022; Küçükkara & Aksüt, 2021; Uğraş, 2017). It is considered necessary to utilize technology in the preschool education period as children are introduced to technology at an earlier age, and their knowledge and skills in the use of technology increase (Öner, 2020). Teachers, whose guidance is needed to benefit from technology in preschool education, should have sufficient knowledge, skills, and positive attitudes towards using technology (Aksoy, 2021). Although it is known that the teaching process integrated with technology is more effective, it is thought that the number of teachers with the necessary skills is low (Judson, 2006; Kuzgun & Özdiñ, 2017; Usta & Korkmaz, 2010). In this context, gaining values such as knowledge, skills, positive attitudes, and perceptions towards effective and correct use of technology has become increasingly important (Öner, 2020). If teachers are trained on the effective use of information and communication technologies and adequate technological facilities are provided, technology will be a material that enables efficient use of time and realizes effective learning (Kuzgun & Özdiñ, 2017).

Since 2005, TPACK has been an emerging research focus, especially among teacher educators who want to work in or be interested in educational technology (Chai, Koh, Tsai, 2013). Despite the potential to integrate technology into education, research has shown that teachers rarely adopt technology in many educational systems (Fraillon, Ainley, Schulz, Friedman & Duckworth, 2020; Judson, 2006; Kuzgun & Özdiñ, 2017; Usta & Korkmaz, 2010). Teachers' lack of self-confidence, negative attitudes, and opinions about the use of technology were among the reasons for this situation (Ardıç, 2021). In this context, it has become increasingly important to gain values such as knowledge, skills, positive attitudes, and perceptions towards the effective and correct use of technology (Öner, 2020). In light of this information, it is essential to determine preschool teachers' technological pedagogical content knowledge, confidence, and attitudes towards technology. This study aims to determine preschool teachers' technological pedagogical content knowledge confidence and their attitude towards technology and to examine whether these variables predict each other. In line with this purpose, answers to the following questions were sought:

1. At what level is the relationship between preschool teachers' technological pedagogical content knowledge self-confidence, its sub-dimensions, and their attitudes towards technology?
2. To what extent do preschool teachers' technological pedagogical content knowledge, self-confidence, and its sub-dimensions predict attitudes towards technology?

2. METHOD

2.1. Research Design

This study is a quantitative study designed in the single and relational survey model, one of the general survey models. Research models that aim to determine the occurrence of variables individually, in terms of type or quantity, are called single survey models (Karasar, 2020: 111). Research that

examines relationships and connections is often referred to as relational research (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz, Demirel, 2021: 25). In this context, a single survey model was used to determine preschool teachers' technological pedagogical content knowledge confidence and attitudes towards technology. A relational survey model was used to determine the relationship between preschool teachers' technological pedagogical content knowledge confidence and attitudes towards technology.

2.2. Working Group

The study group of this research consists of 200 preschool teachers who teach 36-72-month-old preschool children in the 2020-2021 academic year. The study group was formed according to the simple random sampling method. All units in this sampling method have an equal and independent chance to be selected for the sample (Büyüköztürk et al., 2021: 88).

The characteristics of the teachers in the study group are presented in Table 2.

Table 2. Demographic Characteristics Of The Teachers İn The Study Group

Gender	Female		Male		Total	
	f	%	f	%	f	%
	188	94	12	6	200	100
Experiment of years	f	%	f	%	f	%
	0-4 years	65	32,5	8	4	73
5-9 years	46	23,0	2	1,0	48	24,0
10+years	77	38,5	2	1,0	79	39,5
Total	188	94,0	12	6,0	200	100

When Table 2 is analyzed in terms of gender, it is seen that 6% of the teachers are male and 94% are female; in terms of years of experience, 39.5% of the teachers have ten years or more, 36.5% have 0-4 years, and 24% have 5-9 years of experience.

2.3. Data Collection Tools

The data were collected using the "Technological Pedagogical Content Knowledge Self-Confidence Scale (TPACKACKS)", "Attitude Toward Technology Scale," and "Personal Information Form". Technological Pedagogical Content Knowledge Self-Confidence Scale (TPACKACKS): "Technological Pedagogical Content Knowledge Self-Confidence Scale" (TPACKACKS) developed by Graham, Burgoyne, Cantrell, Smith, and Harris (2009) was adapted into Turkish by Timur and Taşar (2011) and designed as a 5-category Likert-type scale. As a result of the confirmatory factor analysis of the scale consisting of 31 items, it was concluded that the scale has four sub-dimensions: Technological

Pedagogical Content Knowledge (TPACK), Technological Pedagogical Knowledge (TPK), Technological Content Knowledge (TCK), and Technological Knowledge (TK). While the Cronbach's Alpha reliability coefficient for the whole scale was .92, it was calculated as .89 in the TPACK dimension, .87 in the TPK dimension, .89 in the TAB dimension, and .86 in the TB dimension.

Personal Information Form: The "Personal Information Form" created by the researchers includes the variables of gender and seniority year, which are thought to affect preschool teachers' perceptions of TPACK self-confidence.

Attitude Toward Technology Scale: The scale developed by Aydın and Karaa (2013) consists of 17 items, 15 of which are positive and 2 of which are negative. The negative items of the 5- point Likert-type scale are calculated in reverse. The scale's Cronbach Alpha internal consistency coefficient consisting of one dimension was calculated as 0.87.

2.4. Data Analysis

Data collection tools were delivered to the teachers who agreed to participate in the study via "Google Forms". The data used in the study were analyzed with SPSS 26.0 and JASP 0.16 programs. In the data analysis process, a normality test was performed in the first stage. Normality test results are given in Table 3.

Table 3. Normality Test Results Of Scale Scores

SCALES	Median	\bar{X}	Skewness	Kurtosis
Technological Pedagogical Content Knowledge	29.00	29.22	-.182	.833
Technological Pedagogical Knowledge	27.00	26.75	-.282	-.030
Technological Domain Knowledge	15.00	14.27	-.619	-.680
Technological Knowledge	41.50	41.53	-.003	-.529
ATT	65.00	66.09	-.212	.459

The fact that the arithmetic mean and median values of the data are close to each other and the skewness and kurtosis coefficients are close to 0 within ± 1 limits shows that the data have a normal distribution (Büyüköztürk, Şekercioğlu, & Çokluk, 2014; McKillup, 2012). Accordingly, when the kurtosis, skewness coefficients, and descriptive statistics of the distribution are examined in Table 3, it is concluded that the data are normally distributed because the mode, median, and arithmetic mean values of the scale scores are close to each other, and the skewness and kurtosis values are within ± 1 . Since the data showed normal distribution as a result of the tests, parametric tests were utilized. Pearson Correlation test was used in the analyses comparing two normally distributed variables. Multiple linear

regression analysis was used to examine the prediction of the independent variable on the dependent variable.

3. FINDINGS

The data obtained were analyzed and explained in line with the sub-problems of the study. The findings are given in Table 4 and Table 5.

Table 4. Pearson Correlation Test Results For The Relationship Between ATT And TPACK

Relationship	N	R	p
Attitude Towards Technology- Technological Pedagogical Content Knowledge	200	0,46**	0.00
Attitude Towards Technology- Technological Pedagogical Knowledge	200	0,46**	0.00
Attitude Towards Technology- Technological Content Knowledge	200	0,20**	0.00
Attitude Towards Technology- Technological Knowledge	200	0,45**	0.00

**R>0.20, p<0.05 Significant Correlation

Table 4 shows that there is a significant positive correlation between teachers' attitudes towards technology and technological pedagogical content knowledge ($r (n=200) =0,46; p<,05$), technological pedagogical knowledge ($r (n=200) =0,46; p<,05$), technological content knowledge ($r (n=200) =0,20 p<,05$), technological knowledge ($r (n=200) =0,45; p<,05$).

Table 5. Multiple Regression Analysis Results For The Prediction Of ATT And TPACK Levels

Variable	B	SH β	β	T	p	Binary r	Partial r
Fixed	33.826	3.87	-	9.173	.00*	-	-
Technological Pedagogical Content Knowledge	.352	.153	.202	2.291	.02*	.460	.162
Technological Pedagogical Knowledge	.324	.166	.172	1.957	.05*	.457	.139
Technological Domain Knowledge	.156	.073	.131	2.134	.03*	.197	.151
Technological Knowledge	.267	.106	.206	2.516	.01*	.449	.177
	R=.538	A.R2= .275**					
	F ⁽⁴⁾ = 19,887	p=.000					

As indicated in Table 5, technological pedagogical content knowledge ($\beta=-0.202$; $t=-2.291$; $p=0.00$), technological pedagogical knowledge ($\beta=-0.172$; $t=-1.957$; $p=0.00$), technological content knowledge ($\beta=-0.131$; $t=-2.134$; $p=0.00$), technological knowledge ($\beta=-0.206$; $t=-2.516$; $p=0.00$) variables contributed significantly to the variance. However, a significant relationship was found with the level of attitude towards technology ($R= .538$; $A. R^2 = .275$; $p=.000$). When Table 5 is examined, the variables of technological pedagogical content knowledge, technological pedagogical knowledge, technological content knowledge, and technological knowledge explain 27.5% of the total variance in attitude towards technology levels. When this variance and its contribution to the analysis were examined; it was determined that preschool teachers' attitudes towards technology positively predicted their technological pedagogical content knowledge, self-confidence at the level of 27.5%.

4. DISCUSSION AND CONCLUSION

This study aims to determine the relationship between preschool teachers' technological pedagogical content knowledge self-confidence and their attitudes towards technology and to examine whether preschool teachers' attitudes towards technology predict their technological pedagogical content knowledge self-confidence. In light of the research findings, preschool teachers' attitude towards technology indicates their technological pedagogical content knowledge confidence. In addition, it was concluded that preschool teachers' attitude towards technology predicts TPACK sub-factors of technological pedagogical content knowledge, technological pedagogical knowledge, technological knowledge, and technological content knowledge self-confidence. When the relationship between

preschool teachers' attitudes towards technology and technological pedagogical content knowledge and its sub-dimensions was examined, a significant positive relationship was found.

Blackwell, Lauricella, and Wartella (2016) aimed to examine the effect of TPACK contextual factors on early childhood educators' use of technology. As a result of the study, they found that preschool teachers' technological pedagogical content knowledge levels had positive attitudes towards technology. The results obtained from this study support Porras-Hernandez and Salinas-Amescua's (2013) view that TPACK emerges in certain contexts. According to the results obtained, teachers' self-efficacy and attitude towards technology affected whether and how they integrated technological materials into activities. There was also a relationship between professional development performance and the frequency of teachers' use of technological materials.

In a similar study by Cheng and Xie (2018) examining the relationships between teachers' personal characteristics, values, and beliefs, and TPACK, teachers working in different schools from primary to high school took part. In this study, it was concluded that the variable that significantly predicted TPACK in both environments where the technological integration program was and was not implemented was teachers' values and beliefs. In this context, in another study conducted by Chai, Koh, and Teo (2019), teachers' technological design beliefs were examined with technological pedagogical content knowledge (TPACK), and it was concluded that teachers' technological design beliefs are essential predictors of technological pedagogical content knowledge.

Yang, Chan, and Gunn (2022) found that preschool teachers' pedagogical knowledge is an essential factor in shaping their attitudes towards technology. Yeh, Lin, Hsu, Wu, and Hwang (2014) examined science teachers' use of information and communication technologies in education and their technopedagogical content knowledge. Dong, Xu, Chai, and Zhai (2020) found that colleague support and teachers' TPACK levels predicted technology self-efficacy. Özgür (2020) stated that TPACK plays a vital role in coping with technology-induced psychological stress (technostress) caused by the technologies used by teachers in educational processes. It also reveals that teachers' competencies in the context of TPACK should be developed through administration, colleagues, parents and society or through in-service training. In addition, the decrease in TPACK levels indicates that teachers are inadequate in the education process.

When the other findings obtained from the research were examined, it was concluded that the relationship between preschool teachers' attitude towards technology scores and technological content knowledge sub-dimension scores was relatively low compared to other sub-dimensions. Teachers' negative views, attitudes, and lack of self-confidence towards technology use and innovations may be the reason for this result (Ardıç, 2021). In addition, the high number of preschool teachers with professional seniority of 10 years or more in the study group and the inadequacy of these teachers in terms of integrating technology and technology materials into education in the undergraduate education

they received during their undergraduate education can be shown as inadequate. Considering the new generation of teachers and prospective teachers, it can be said that their technological knowledge (TK) and technological content knowledge (TCK) are gradually improving (Masoumi, 2021). However, based on past studies, Enoschsson (2010) underlines that being familiar with and using digital technologies does not automatically ensure the utilization of these technologies in the preschool education environment (Masoumi, 2021). Preservice teachers' knowledge of technology and technology use does not guarantee that they have technological pedagogical content knowledge (Sancar-Tokmak, Yavuz Konokman, Yanpar Yelken, 2013). For this reason, TPACK-based activities should be planned to integrate technology and the educational process (Soong & Tan, 2010); a positive perception of the usefulness of digital technologies and past experiences should be created (Nikolopoulou & Gialamas, 2015). In another study, in parallel with the results obtained from this study, Koh and Chai (2016) examined the technological pedagogical content knowledge of primary school teachers by examining their views on the integration of information and communication technologies into education. According to the results obtained, they concluded that teachers know about seven sub-dimensions as TK, PCK, CK, TPK, PCK, TCK and TPACK and mainly use PCK and TPACK dimensions. In a similar study Boschman, McKenney, and Voogt (2015) focused on using teachers' TPACK domains in a collaborative education design enriched with technology in early literacy activities. According to the findings of the study, it was concluded that teachers' current technology-enriched orientations towards early literacy were transferred into the classroom. When the teachers' views on using TPACK were analyzed according to the sub-dimensions, the number of explanations reflecting the TK, PCK, and CK domains was quite low. In contrast, the teachers frequently included the PCK and TPACK domains. As a result, in this study conducted with preschool teachers, the relationship between their technological pedagogical content knowledge, self-confidence and their attitudes towards technology is in line with the literature.

RECOMMENDATIONS

The fact that preschool teachers' attitudes towards technology predict their technological pedagogical content knowledge self-confidence contributes to the literature. In the future, the complex relationship between TPACK and self-efficacy, self-regulation, beliefs, or attitudes towards educational technology should be examined in more detail as it is an essential factor for the discrimination of related constructs (Schmid, Brianza & Petko, 2020).

According to the research findings, different plans should be made to improve preschool teachers' TPACK self-confidence and attitudes towards technology. Teachers should be supported through in-service trainings and professional communities to follow new technologies and incorporate them into the learning process. According to Dong et al. (2020), school administrative staff should support teachers in their TPACK levels and technology self-efficacy and create professional learning communities. The relatively low level of the relationship between teachers' attitudes towards technology

and technological content knowledge sub-dimension compared to other sub-dimensions should be examined in depth.

In today's world of rapid technological developments, preschool teachers are expected to integrate current and new technologies in educational environments, activity plans and programs. Based on this necessity, an in-service training program should be prepared for preschool teachers to integrate technology into the early childhood education environment. There is also a need for online resources, forum platforms and communities of practice where teachers can discuss with each other (Sıngın & Gökbulut, 2020). New studies are needed to determine how preschool children learn with the integration of technology and technology materials and to determine the roles of teachers in this process. In addition, considering that quantitative data were collected and analyzed in this study, it can be stated that the literature can be supported by studies in different research designs where qualitative data are collected.

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GENİŞLETİLMİŞ TÜRKÇE ÖZET

OKUL ÖNCESİ ÖĞRETMENLERİNİN TEKNOLOJİK PEDAGOJİK ALAN BİLGİSİ ÖZGÜVENİ İLE TEKNOLOJİYE YÖNELİK TUTUMU ARASINDAKİ İLİŞKİNİN İNCELENMESİ

GİRİŞ

Nitelikli öğretmen, öğrencisinin bilgiye en anlaşılır ve kolay yolla ulaşması için öğrenme fırsatları yapılındır. Yapılandırma sürecinde öğretmenin öğreteceği konu hakkındaki bilgisi ile bu bilgiyi aktarırken kullanacağı yöntem, teknik ve uygulama bilgisine sahip olması gerekmektedir (Taşkın Ekici ve Dereli, 2022). Öğretmenin pedagojik bilgisi ile konu içerik bilgisinin kesişiminden pedagojik alan bilgisi kavramı doğmuştur (Yolcu vd, 2022). Bilgi iletişim teknolojileri ile bütünleşmiş pedagojik alan bilgisi kavramı Mishra ve Koehler (2006) tarafından Teknolojik Pedagojik Alan Bilgisi (TPAB, [TPACK]) olarak adlandırılmıştır.

TPAB, teknoloji ile öğretimin temelinde yer alan teknoloji, pedagoji ve alan (içerik) bileşenleri ve bu bileşenler arasındaki etkileşimlerin ortaya çıktığı bir anlayıştır (Mishra ve Koehler, 2009). Bu temel bileşenlerin kesişim ve birleşimi ise TPAB modelinin diğer bileşenlerini oluşturur (Kabakçı Yurdakul, 2013). TPAB, teknolojik bilgi (TB), pedagojik bilgi (PB), alan (içerik) bilgisi (AB), teknolojik pedagojik bilgi (TPB), teknolojik alan bilgisi (TAB) ve pedagojik alan bilgisi (PAB) gibi bir dizi bütünleştirici bilgi kümesidir (Angeli ve Valanides, 2009; Doğru ve Aydın, 2017; Mishra ve Koehler, 2009).

2005'ten beri, TPAB eğitim teknolojisi konusunda öğretmenler ve eğitimciler arasında popüler bir araştırma alanı haline gelmiştir (Chai, Koh, Tsai, 2013). Bu alandaki çalışmalar, pek çok eğitim sisteminde öğretmenlerin teknoloji kullanımını yeterince benimsemediklerini ortaya koymaktadır (Kuzgun ve Özdiç, 2017; Fraillon vd., 2020). Öğretmenlerin teknoloji kullanımına ilişkin özgüven eksikliği ve olumsuz düşünceleri (Ardıç, 2021) bağlamında, etkili ve doğru teknoloji kullanımı için bilgi, beceri, olumlu tutum ve algılarını geliştirmeleri önem kazanmaktadır (Öner, 2020). Bu noktada, okul öncesi öğretmenlerinin teknolojik pedagojik alan bilgisi özgüveni ve teknolojiye yönelik tutumlarını belirlemek büyük önem taşımaktadır.

Araştırmada, okul öncesi öğretmenlerinin TPAB özgüveni ve teknoloji tutumlarına dair ulusal ve uluslararası çalışmalar ele alınmıştır. Çeşitli veri tabanları ve dijital kütüphaneler (ör. ERIC, ScienceDirect, Google Scholar) kullanarak "okul öncesi öğretmenleri", "teknolojik pedagojik alan bilgisi", "özgüven" ve "teknolojiye yönelik tutumlar" anahtar kelimeleriyle yapılan tarama, okul öncesi öğretmenlerinin teknolojik pedagojik alan bilgisi ve teknoloji tutumlarıyla ilgili çalışmaları kapsamaktadır. Bu süreçte, öğretmenlerin özgüven ve tutumlarına ilişkin eğilimleri incelenmiştir.

Okul öncesi öğretmenlerinin teknolojiye yönelik tutumu ile TPAB ve alt boyutları arasında pozitif yönde anlamlı bir ilişki bulunması ile ilgili alanyazındaki çalışmalar incelendiğinde, TPAB bağlamsal faktörlerinin erken çocukluk eğiticilerinin teknoloji kullanımı üzerindeki etkisini inceleyerek okul öncesi öğretmenlerinin TPAB düzeylerini yüksek ve teknolojiye yönelik tutumlarının olumlu olduğunu tespit edilmiştir (Blackwell, Lauricella ve Wartella, 2016; Porras-Hernandez ve Salinas-Amescua, 2013; Yang, Chan ve Gunn, 2022). Cheng ve Xie (2018) çalışmasında, öğretmenlerin değer ve inançlarının teknolojik pedagojik alan bilgisi (TPAB) üzerinde önemli bir etkiye sahip olduğunu belirtmektedir. Benzer şekilde, Chai, Koh ve Teo (2019) tarafından yapılan bir çalışmada da öğretmenlerin teknolojik tasarım inançlarının TPAB üzerinde önemli yordayıcılar olduğunu ortaya koymaktadır.

Bu çalışmanın amacı okul öncesi öğretmenlerinin teknolojik pedagojik alan bilgisi özgüvenleri ile teknolojiye yönelik tutumlarını belirlemek ve bu değişkenlerin birbirini yordayıp yordamadığını incelemektir. Bu amaç doğrultusunda aşağıdaki sorulara cevap aranmıştır:

1. Okul öncesi öğretmenlerinin teknolojik pedagojik alan bilgisi özgüvenleri ve alt boyutları ile teknolojiye yönelik tutumları arasındaki ilişki hangi düzeydedir?
2. Okul öncesi öğretmenlerinin teknolojik pedagojik alan bilgisi özgüvenleri ve alt boyutları, teknolojiye yönelik tutumu ne düzeyde yordamaktadır?

YÖNTEM

Araştırmanın Deseni

Bu çalışma, genel tarama modelleri içerisinde tekil ve ilişkisel tarama modeline dayalı, değişkenlerin bireysel olarak, tür veya miktar açısından belirlenmesi amacıyla tasarlanan nicel bir araştırmadır (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz, Demirel, 2021; Karasar, 2020). Bu kapsamda, okul öncesi öğretmenlerinin teknolojik pedagojik alan bilgisi öz güveni ve teknolojiye yönelik tutumlarını belirlemek amacı ile tekil tarama modeli; bu değişkenlerin arasındaki ilişkiyi belirlemek için ise ilişkisel tarama modeli kullanılmıştır.

Çalışma Grubu

Bu araştırmanın çalışma grubunu 2020-2021 eğitim ve öğretim yılı 36-72 aylık okul öncesi dönem çocuklarına eğitim veren 200 okul öncesi öğretmeni oluşturmaktadır. Çalışma grubu basit seçkisiz örnekleme yöntemine göre oluşturulmuştur (Büyüköztürk vd., 2021).

Veri Toplama Araçları

Araştırmanın verileri, “Teknolojik Pedagojik Alan Bilgisi Öz Güven Ölçeği (TPABÖGÖ)”, “Teknolojiye Yönelik Tutum Ölçeği” ve “Kişisel Bilgi Formu” kullanılarak toplanmıştır. TPABÖGÖ: Graham, Burgoyne, Cantrell, Smith ve Harris (2009) tarafından geliştirilen bu ölçme aracı Timur ve Taşar (2011) tarafından Türkçe’ye uyarlanarak 5 kategorili Likert tipi ölçek olarak tasarlanmıştır. Ölçek,

Teknolojik Pedagojik Alan Bilgisi (TPAB), Teknolojik Pedagojik Bilgi (TPB), Teknolojik Alan Bilgisi (TAB), Teknolojik Bilgi (TB) olmak üzere 31 maddeden oluşmaktadır. Ölçeğin tümü için Cronbach Alfa güvenilirlik katsayısı .92 iken alt faktörlerden TPAB boyutunda .89, TPB boyutunda .87, TAB boyutunda .89 ve TB boyutunda .86 olarak hesaplanmıştır.

Teknolojiye Yönelik Tutum Ölçeği: Aydın ve Karaa (2013) tarafından geliştirilen 5'li likert tipi ölçek 17 maddeden oluşmaktadır. Tek boyuttan oluşan ölçeğin Cronbach Alpha iç tutarlık katsayısı 0.87 olarak hesaplanmıştır. Kişisel Bilgi Formu: Araştırmacılar tarafından oluşturulan form okul öncesi öğretmenlerinin cinsiyet ve kıdem yılını içermektedir.

Verilerin Analizi

Veri toplama araçları çevrimiçi anket aracılığı ile toplanmıştır. Araştırmada kullanılan veriler uygun istatistik programıyla analiz edilmiştir.

TARTIŞMA, SONUÇ ve ÖNERİLER

Araştırma bulgularına bakıldığında, okul öncesi öğretmenlerinin teknolojiye yönelik tutumları, hem teknolojik pedagojik alan bilgisi özgüvenini hem de TPAB alt faktörlerindeki özgüvenlerini yordamaktadır. Öğretmenlerin teknolojiye yönelik tutumu ile TPAB ve alt boyutları arasındaki ilişki incelendiğinde pozitif yönde anlamlı bir ilişki bulunmuştur. Araştırmanın diğer bulgularına göre okul öncesi öğretmenlerinin teknolojiye yönelik tutum puanları ile TAB alt boyutu puanları arasındaki ilişkinin diğer alt boyutlara göre nispeten düşük seviyede olduğu sonucuna ulaşılmıştır. Öğretmenlerin teknoloji kullanımına yönelik tutum ve özgüven yetersizliğine sahip olmalarından kaynaklandığı söylenebilir (Ardıç, 2021). Ayrıca mesleki kıdemi 10 yıl ve üzeri olan öğretmenlerin sayısı fazla olduğu için, bu öğretmenlerin lisans eğitimi teknoloji entegrasyonu konusunda yetersiz kaldığı söylenebilir. Okul öncesi öğretmenlerinin teknolojiye yönelik tutumlarının TPAB özgüvenlerini yordama durumu alanyazına katkı sağlamaktadır. Gelecekte TPAB ile öz yeterlilik, öz düzenleme, inançlar veya eğitim teknolojilerine ilişkin tutumlar arasındaki karmaşık ilişki ilgili yapıların ayırt ediciliği için önemli bir faktör olması nedeniyle daha ayrıntılı olarak incelenmelidir (Schmid, Brianza & Petko, 2020). Öğretmenlerin teknolojiye yönelik tutumları ile teknolojik alan bilgisi alt boyutu arasındaki ilişkinin diğer alt boyutlara göre nispeten düşük seviyede olması derinlemesine incelenmelidir. Teknolojik gelişmelerin hızla yaşandığı günümüzde okul öncesi öğretmenlerinden eğitim ortamlarında, etkinlik planlarında, programlarda güncel ve yeni teknolojileri entegre etmeleri beklenmektedir. Bu gereklilikten hareketle okul öncesi öğretmenlerine yönelik teknolojiyi erken çocukluk eğitimi ortamına entegre etmeleri amacıyla hizmet içi eğitim programı hazırlanmalı ve mesleki topluluklar aracılığıyla öğretmenlerin deneyimlerini birbirine aktarmaları sağlanmalıdır. Ayrıca bu çalışmada nicel verilerin toplandığı göz önünde bulundurularak, nitel verilerin toplandığı çalışmalarla alanyazına destek sağlanabilir.

INCIDENTAL VOCABULARY ACQUISITION IN SLA: DOES AURAL INPUT FACILITATE VOCABULARY ACQUISITION WHILE READING?

Esra ÇAM¹

Geliş Tarihi/Received: 12.04.2023

Elektronik Yayın/Online Published:20.06.2023

DOI: 10.48166/ejaes.1282272

ABSTRACT

Vocabulary acquisition is essential to achieve fluency in the target language; however, it is a daunting and unending task for second language learners due to many words required to be learned. This two-group, pre/post/delayed post-test quasi-experimental study aims to investigate whether English as a Foreign Language (EFL) learners could learn new English words incidentally from reading texts in their course books and whether there was an effect of simultaneous input modality in a successful acquisition. It further aimed to examine the rate of vocabulary recall by the control group (reading-only condition) and experimental group (listening-while-reading condition). The study revealed four significant findings. Without being exposed to any intentional instruction on target vocabulary, 5.53 words were learned in reading-only mode, which was a gain of more than 49%. When written input was enhanced with oral input, it resulted in relatively higher success in lexical development. The experimental group, which listened to the audio recordings of the texts while simultaneously reading them, learned 6.37 new words on average, a gain of higher than 60%. A comparison of the two groups revealed that the effect of aural enhancement on incidental vocabulary learning was relatively small, a difference of 0.84 words between the two groups. Words learned in the reading-only condition were more resistant to decay than words learned in the listening-while-reading condition. Important implications for EFL teachers are suggested based on the findings.

Keywords: Aural enhancement; incidental vocabulary acquisition; input modality; SLA; vocabulary acquisition

¹ Lecturer. Yalova University, Yalova, Turkey, esra.cam@yalova.edu.tr, ORCID:/0000-0002-7598-2606

İKİNCİ DİL EDİNİMİNDE RASLANTISAL SÖZCÜK EDİNİMİ: İŞİTSEL GİRDİ OKUMA SIRASINDA SÖZCÜK EDİNİMİNİ KOLAYLAŞTIRIR MI?

ÖZET

Hedef dilde akıcılık için sözcük edinimi esastır; ancak bu ikinci dil öğrenenler için öğrenilmesi gereken çok sayıda sözcük nedeniyle göz korkutucu ve bitmeyen bir süreçtir. Bu iki gruplu, ön/son/gecikmeli son test yarı deneysel çalışma, Yabancı Dil Olarak İngilizce (EFL) öğrenenlerin ders kitaplarındaki metinleri okurken yeni İngilizce sözcükleri raslantısal olarak öğrenip öğrenemeyeceklerini ve eşzamanlı girdi yönteminin başarılı öğrenmede bir etkisi olup olmadığını araştırmayı amaçladı. Ayrıca kontrol grubu (sadece okuma koşulu) ve deney grubu (okurken dinleme koşulu) tarafından sözcüklerin hatırlanma oranları da incelendi. Çalışma dört ana bulguyu ortaya koydu. Hedef sözcükler ile ilgili herhangi bir kasıtlı öğretime maruz kalmadan, salt okuma modunda katılımcılar tarafından 5,53 kelime öğrenildi ve bu %49'dan fazla bir kazanımın söz konusu olduğunu gösterdi. Yazılı girdi sözlü girdiyle zenginleştirildiğinde, katılımcıların sözcük gelişiminde nispeten daha yüksek başarı görüldü. Metinleri okurken aynı zamanda ses kayıtlarını da dinleyen deney grubu %60'ın üzerinde bir kazanımla ortalama 6,37 yeni sözcük öğrendi. İki grubun karşılaştırılması, işitsel pekiştirmenin rastlantısal sözcük öğrenimi üzerindeki etkisinin nispeten küçük olduğunu, iki grup arasında 0.84 kelimelik bir fark olduğunu ortaya çıkardı. Sadece okuma durumunda öğrenilen sözcükler, okuma sırasında dinleme durumunda öğrenilen sözcüklere göre unutulmaya karşı daha dirençliydi. Bulgulara dayalı olarak İngilizce öğretmenleri için önemli çıkarımlar önerilmektedir.

Anahtar Kelimeler: İşitsel pekiştirme; rastlantısal sözcük edinimi; girdi yöntemi; ikinci dil edinimi; sözcük edinimi

1. INTRODUCTION

Lexical knowledge is fundamental to second language acquisition (SLA). It is estimated that second/foreign language (L2) learners need more than 9,000 word families and more than 11,000 individual words for competence in academic reading in English (Nation, 2006; Nation & Chung, 2009). This situation presents a considerable challenge for individuals who learn English as a foreign language (EFL). Both the significance of lexical knowledge in L2 acquisition and the challenge due to the vast amount of necessary lexical items poses have motivated scholars to search for effective ways to foster L2 learners' lexical development to a point at which they can comprehend the English texts they read.

In the past several decades, studies on intentional and incidental vocabulary learning have increased considerably. These studies have shown that the intentional study of lexical items results in better acquisition in adult learners (Laufer & Nation, 2012; Nation & Chung, 2009; Sonbul & Schmitt, 2010). Although it is widely considered a good way to teach vocabulary, explicit teaching of lexical items falls short of explaining the gap between words acquired by learners and explicitly taught by teachers in the classroom environment (Malone, 2018). Besides, EFL learners have limited exposure to the target language outside, and time is an important constraint for L2 teachers who have a limited time to cover many things. Although it is ideal, it is not a realistic objective for EFL instructors to explicitly teach all the vocabulary L2 learners need to read authentic written texts. According to Schmitt and Schmitt (2012), students have access to only 3,000 most frequent word families in L2 classrooms. This

number is insufficient for them to succeed in academic reading, which brings incidental vocabulary acquisition to the foreground.

Many existing studies on incidental vocabulary learning have examined the effects of frequency of exposure and input mode (written, aural, video, pictures, and so forth). Besides, these studies were mainly conducted with advanced or nearly advanced learners of L2 and primarily focused on the reading skill (Brown et al., 2008; Horst, 2005; Pellicer-Sánchez & Schmitt, 2010; Rott, 1999; Waring & Takaki, 2003). However, the research on incidental vocabulary acquisition of learners with low L2 proficiency and the role of simultaneous input modalities are limited in number. In addition, to the researcher's knowledge, there is scarcely any such study in Turkey's context with learners who are native speakers of Turkish. In this regard, this quasi-experimental study seeks to examine whether reading-only and listening-while-reading modes affect vocabulary learning of EFL students studying the A2 level at an intensive English programme at a state university in Turkey. A postpositivist worldview best suits the study because the research questions addressed require identifying the role of different input modalities (reading vs. listening-while-reading) on incidental acquisition of lexical items during L2 instruction (Creswell, 2014).

2. LITERATURE REVIEW

2.1. Incidental Vocabulary Learning

Continuity of vocabulary learning is essential for competence in receptive and productive language skills in an L2. A few studies of direct instruction of vocabulary, where learners were expected consciously and willingly study or memorize a list of vocabulary, produce remarkable results (Nation, 2001, p. 298). However, research shows that L2 learners can unintentionally acquire a certain amount of vocabulary by mere exposure while engaged in a language task, such as reading or listening for comprehension.

Incidental vocabulary learning refers to learning new lexical items through another activity without any intention or requirement. One of the earlier proponents of incidental education in the field of SLA is Krashen, who argues that people learn languages and develop literacy subconsciously through comprehensible input. Language acquisition happens when we are not aware that it is happening (Krashen, 2008). Although direct instruction of vocabulary seems to achieve impressive results (Nation, 2001), according to Krashen, deliberate vocabulary instruction is ineffective in providing deep knowledge of words, including their semantic and syntactic properties. It instead provides synonyms or short definitions of new words.

Although some scholars use the terms *incidental* and *implicit* interchangeably, some distinguish between the two terms (Bisson et al., 2014; Malone, 2018). Unlike *implicit* learning, which centres upon the role of *consciousness*, *incidental* learning concentrates on the learner's *intention*. Therefore,

incidental vocabulary learning research majorly studies how much acquisition occurs when learners do not deliberately focus on vocabulary but on something else. Some scholars argue against using the term *incidental*, addressing the difficulty of uncovering whether students deliberately focus on learning words when engaged in a task in classroom studies (Bruton et al., 2011; Malone, 2018). Given that most incidental vocabulary learning studies examined incidental vocabulary acquisition through reading in classroom environments. They had no control over the duration of exposure, and their findings on implicit word learning are considered to be questionable (Malone, 2018). To overcome the problem of duration of exposure and attention, some studies tried to keep participants' attention on the task rather than the lexical items and restricted the time of exposures that resulted from rereading (see Tekmen & Daloğlu, 2006; Webb, 2007; Webb & Chang, 2015).

Prior research reveals a variety of variables significant to incidental vocabulary learning, such as the type of word and similarity of L2 words to L1 words (Vidal, 2011). However, a large number of existing studies on incidental vocabulary learning have examined the effects of frequency of exposure (Horst et al. 1998; Pellicer-Sánchez & Schmitt, 2010; Rott, 1999; Waring & Takaki, 2003; Webb, 2007) and revealed it as a strong predictor of successful learning. Nevertheless, these studies reported different findings about the number of times the target L2 words should occur for acquisition. Some studies provided evidence for some learning at a single exposure (Webb, 2007; Chen & Truscott, 2010), while others proposed two (Rott, 1999), three or four (Pellicer-Sánchez, 2016), eight (Bisson et al., 2013; Horst et al., 1998), and even more than twenty (Waring & Takaki, 2003). Nation (2014) and Laufer (2017) suggested twelve as the ideal number of exposure to learn the target word. The literature reveals a linear, incremental increase in the acquisition and retention of both unknown words and new meanings for known words with more encounters (Webb & Cheng, 2015; Hulme et al., 2018). According to Malone (2018), several methodological and theoretical differences among these studies account for the variation in the success of learning. The words tested, the number of items to be learned, the type of passages used, the stimuli provided to the participants, participants' proficiency levels, the aspect of vocabulary knowledge, and the baseline for measurement and the types of measure varied among the studies. Thus, they came up with different findings.

a. Incidental Vocabulary Learning from Simultaneous Input Modalities: Written and Aural Input

Regarding incidental vocabulary learning through reading, the primary purpose is to comprehend a text, and a couple of words can be learned along the way (Bisson et al., 2014). A considerable body of literature exists on incidental acquisition of nonwords or L2 words through reading (see Batterink & Neville, 2011; Pellicer-Sánchez, 2016; Williams & Morris, 2004). Most of these studies investigated vocabulary gains from extensive reading and revealed that learners could acquire vocabulary from reading. However, they reported diverging findings such as a gain of 22% (Horst et al., 1998), 42% (Waring & Takaki, 2003), and 51% (Horst, 2005). A meta-analysis by Waring and Nation

(2004) indicated that the number of words learned incidentally is somewhat low, as one tenth of the target words tested. The studies in their analysis also differed considerably in their results, such as vocabulary gain rates as high as 25% and as low as 4%. Waring and Nation (2004) explain the divergences again based on the methodological differences among these studies.

Several scholars have investigated the influence of input modalities on the acquisition of novel words in L1 and L2. However, much of the research either focused on intentional vocabulary learning or was conducted with L1 speakers. Only a few studies investigated the role of input modalities on word learning in L2 to unveil the potential impact of each mode. In one of these studies, Kelly (1992) investigated whether there were differences in word retention in listening-while-reading mode as opposed to reading-only mode. He found that visual input resulted in higher scores on immediate tests. However, combining visual and aural input resulted in higher scores when tests were delayed.

Horst et al. (1998) and Brown et al. (2008) examined the issue from the opposite angle and studied the influence of reading while listening. Horst et al. (1998) demonstrated that teachers reading aloud and students following the text facilitated incidental vocabulary learning. Brown et al. (2008) also expected that audio input could reduce mental resources required for phonological processing in unfamiliar vocabulary and give room for semantic processing. On the other hand, they could not find any significant differences in incidental vocabulary learning between reading-only and reading-while-listening conditions.

In another study, Webb et al. (2013) examined incidental acquisition of collocations in reading-while-listening conditions. They modified the texts in a way that learners would encounter the target items either 1, 5, or 10 times or they would be asked to learn them explicitly. Their participants achieved considerably better acquisition in the explicit learning phase. Finally, in a recent study, Malone (2018) investigated the role of aural enhancement of input on incidental L2 vocabulary learning while reading and noted that simultaneous input modalities fostered deeper processing and successful acquisition.

b. The Present Study

The present study aims to investigate the impact of simultaneous bimodal input on adult EFL learners' incidental acquisition and long-term retention of new vocabulary. A control group (reading-only condition) and an experimental group (listening-while-reading condition) were compared to examine whether aural enhancement facilitated higher incidental vocabulary learning during reading activities. The two independent variables were the type of input (written vs. written + aural) and the time of the test (immediate vs. one week later). The dependent variable was accuracy in word-meaning matching tests. For this purpose, the following research questions are addressed:

1. To what extent does initial vocabulary learning occur in reading-only conditions?
2. To what extent does initial vocabulary learning occur in listening-while-reading condition?
3. Is there an effect of audio enhancement on incidental vocabulary learning while reading?

4. To what extent, were the newly learned words retained by the control and experimental groups one week after interventions?

3. METHODOLOGY

3.1. Participants

Ninety EFL learners with elementary competence (A2) in English were recruited from four classes in an Intensive English program at a state university in Turkey in the 2020-2021 academic year. All participants were native speakers of Turkish, and they were learning English as a foreign language. Thirty-three students completed all sessions of the study. Fifty-seven participants were omitted as they did not complete at least one of the seven tests (one pre-test, an immediate post-test consisting of five mini-tests, a delayed post-test). The control group involved 17 participants (7 female, 10 male) with an age range of 17 to 23. The experimental group involved 16 participants (6 female, 10 male) with an age range of 18 to 32. Students were not informed about the upcoming pre-test, nor were they informed about the vocabulary learning aspect of the study. Instead, they were told that the study was about reading comprehension, and they would read some texts and take some reading comprehension tests. Upon the completion of the study, participants were informed about the actual purpose of the study.

3.2. Materials

Five graded (A2) level reading texts were selected from different EFL course books for the study. Because the major aim of the study was to determine the average number of words the L2 students could learn and recall in online reading classes without being exposed to any direct vocabulary teaching, naturalistic materials were favoured over experimental/modified ones. Participants encountered target vocabulary through reading five texts with a set of 25 target words. Each text contained five target words, each presented two or three times throughout the text. The reading texts were similar in length (Text 1: 203 words, Text 2: 201 words, Text 3: 224 words, Text 4: 251 words, Text 5: 240 words). To have a control over the exposure time and prevent students focusing on target words, reading texts were presented on timed PowerPoint slides. Students read only two or three sentences depending on the length of the sentences on the screen. A blank slide was added after each slide so that the students and the researcher could discuss the reading text. Differently from the control group, the experimental group was also exposed to aural input while reading.

3.3. Measures

The same 25-question items were used to measure participants' lexical knowledge before, immediately after and a week after the treatments. The tests were uploaded on a file sharing platform and accessed through the URL sent to all participants. Because the form-meaning connections were selected as the baseline, participants' knowledge of the target words was measured through meaning-to-word matching questions. The test questions were in multiple-choice format, and students answered 25

questions in total. Students were asked to choose the correct meaning for the target word among five options in each question.

3.4. Procedure

Before treatments, participants' prior knowledge of the target words was assessed via an online pre-test. They were ensured that their answers would not be used outside of the study. They were warned not to use a dictionary or translate programs and to answer the questions based only on their knowledge. The researcher started the treatment sessions with both groups one week after the pre-test. She informed the participants about the procedure and rules.

During the interventions, participants in the control group were asked to read the text. Participants in the experimental group were asked to read the text while simultaneously listening to the audio recording of it. Each text was divided into many sections, and two or three sentences were shown on the screen at a time. Before moving to the next slide, the researcher asked the participants some questions to make sure that the participants comprehended the text. They could not go back to the previous slides and reread the texts. Neither dictionary use nor note-taking was permitted. No questions about the vocabulary used in the texts were allowed. After each reading activity, the participants completed an online test (the immediate post-test). The questions that were asked in the pretest were embedded in reading comprehension questions, so each immediate test included two sections: a section involving the five vocabulary questions and a filler section that involved comprehension questions about the text they studied. Comprehension questions were prepared in a way that all students could solve them very easily and spend only a little bit of time on these questions. Participants' answers to the comprehension questions were not included in the analysis. The main reason for the participants answering both vocabulary and comprehension questions was to ensure that they did not realise the study's actual purpose and pay deliberate attention to words during the following treatment sessions. The same procedure was followed in all five treatment sessions, which were completed in a week. The scores that participants got from vocabulary sections in five comprehension tests constituted their immediate test scores. Participants took the delayed post-test online one week later. The test items in each administration were the same.

3.5. Scoring

Students' responses to multiple-choice items in the word-meaning matching tests were coded for accuracy as either 1 (for correct answers) or 0 (for incorrect answers). The SPSS, version 25.0. was utilized to conduct descriptive analysis and calculate the means and percentages for lexical gains of participants. The researcher scored the tests.

4. RESULTS AND DISCUSSION

4.1. Research Question 1: To what extent does initial vocabulary learning occur in reading-only conditions?

Research question 1 aimed to investigate incidental vocabulary gain of the reading-only group. To answer the question, a descriptive analysis was employed. Table 1 summarises the data for pre-test and immediate post-test results for the control group. The mean pre-test and immediate post-test scores are 11.23 (SD=13.43) and 16.76 (SD=8.48), respectively. These findings show that without being exposed to any deliberate vocabulary instruction, 5.53 words were learned on average by A2 level EFL participants only through reading, which is a gain of more than 49%.

These findings are compatible with prior research that provides evidence for the value of reading in incidental vocabulary learning. Reading alone seems to provide EFL learners with the input they need to acquire new vocabulary without any deliberate effort or intention (see Brown et al., 2008; Horst et al., 1998; Horst, 2005; Pigada & Schmitt, 2006; Waring & Takaki, 2003; Webb, 2007). The findings are parallel to the prior research showing that even a small number of exposures (two or three exposures in this study) to the target vocabulary through reading facilitated incidental vocabulary acquisition.

Table 1. Mean Scores for Lexical Gains by Reading-Only Group

Mode	Pre-test		Immediate Post-test		<i>n</i>	%
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Reading-only mode (N=17)	11.23	13.43	16.76	8.48	5.53	49.24

Note. *n*= the number of words learned, %= percentage of gain

4.2. Research Question 2: To what extent does initial vocabulary learning occur in listening-while-reading condition?

Research question 2 aimed to examine incidental vocabulary learning in listening-while-reading mode. The mean scores of pre-test and immediate post-test results of experimental group participants were calculated through descriptive analysis. As Table 2 demonstrates, the mean scores were 10.25 (SD=2.12) for pre-test, and 16.62 (SD=2.82) for immediate post-test. These findings revealed that written input enhanced with oral input resulted in a gain of 6.37 words on average, a gain of higher than 60%. These findings support the findings of Malone (2018) and Horst et al. (1998), demonstrating that aural enhancement of written input facilitated the success in incidental vocabulary learning in L2.

Table 2. Mean Scores for Lexical Gains by Listening-While-Reading Group

Mode	Pre-test		Immediate Post-test		<i>n</i>	%
	<i>M</i>	<i>D</i>	<i>M</i>	<i>D</i>		
Listening-while-reading (N=16)	10.25	2.12	16.62	2.82	6.37	62.14

Note. *n*= the number of words learned, %= percentage of gain

4.3. Research Question 3: Is there an effect of audio enhancement on incidental vocabulary learning while reading?

Research question 3 aimed to compare the control group and experimental group in terms of their incidental vocabulary acquisition in L2 and examine the effect of simultaneous input modalities on acquisition rate. As presented in Table 3, the control group ($M=11.23$, $SD=13.43$) scored relatively higher than the experimental group ($M=10.25$, $SD=2.12$) in the pre-test. On the other hand, the immediate post-test results of the two groups were very close to each other. The mean scores for the multiple-choice test were 16.76 ($SD=8.48$) for reading-only group and 16.62 ($SD=2.82$) for listening-while-reading group. These findings revealed that aural plus written input influenced incidental vocabulary learning through reading, and although not very powerful, it provided an advantage for the experimental group. While reading-only group learned 5.53 words on average (a gain of 49.24%), listening-while-reading group learned 6.37 words on average (a gain of 62.14%). See Figure 1 for the graphical presentation of data.

Table 3. Mean Scores for Lexical Gains by The Two Input Groups

Mode	Pre-test		Immediate Post-test		<i>n</i>	%
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Reading-only (N=17)	11.23	13.43	16.76	8.48	5.53	49.24
Listening-while-reading (N=16)	10.25	2.12	16.62	2.82	6.37	62.14

Note. *n*= the number of words learned, %= percentage of gain

These results align with the results of previous studies that found some effect of aural enhancement in form meaning connections (e.g., Malone, 2018). However, unlike them, the effect seen in the present study is relatively small, as small as a difference of 0.84 words, which might have resulted from some other factors that could not be controlled throughout the study other than the input mode, such as the differences in participants' working memory capacities and learning from exposure to the vocabulary outside of the study.

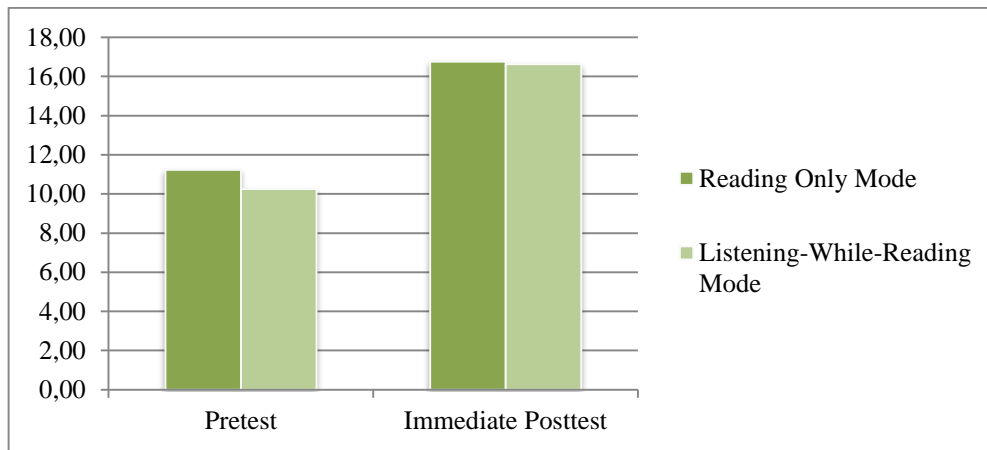


Figure 1. Lexical Gain Data for Two Input Modes

4.4. Research Question 4: To what extent were the newly learned words retained by the control and experimental groups one week after interventions?

The last research question examines the rate of vocabulary retention by the two groups (control group and experimental group) one week after completing the treatments. Immediate post-test and delayed post-test results for both groups are presented in Table 4, and the graphical distribution of the data is displayed in Figure 2. The control group (unenancement group) outperformed the experimental group (aural enhancement group) in their delayed post-test scores. Results showed an impressive retention rate of the words in the control group over a week that they recalled nearly 98% of the words they acquired ($M=16.76$, $SD=8.48$ for immediate post-test, and $M=16.41$, $SD=7.77$ for delayed post-test). There was no significant forgetting after one week. Participants acquired new vocabulary incidentally through reading and recalled them over time.

The multiple-choice immediate post-test and delayed post-test measures revealed reasonably good memory of words in the experimental group standing at 80.44% ($M=16.62$, $SD=2.82$ for immediate post-test, and $M=13.37$, $SD=1.41$ for delayed post-test). However, compared to the reading-only group, listening-while-reading group’s data showed some decay from the initial learning, which was a loss of 3.25 words. These findings indicated that words learned incidentally through reading were more resistant to decay than words learned through listening while reading.

Table 4. Mean Scores for the Two Input Modes Over the Three Test Periods

Mode	Immediate Post-test		Delayed Post-test		%
	<i>M</i>	<i>.SD</i>	<i>M</i>	<i>.SD</i>	
Reading-only (N=17)	16.76	.48	6.41	7.77	7.91
Listening-while-reading (N=16)	16.62	.82	3.37	1.41	0.44

Note. %= percentage of retain

The results of reading-only group for retention of new vocabulary over a week support Hulme et al. (2018), who found a good memory of the new meanings for known words by native English-speaking adults. However, the findings contradict the findings of Kelly's (1992) study where he found that combining visual and aural input resulted in higher scores in delayed post-test. The divergences in the findings suggest that increasing the frequency of encounters with the target word within the reading text may be more effective than enhancing reading with other input modalities for the acquisition and long-term retention of new vocabulary. Brown et al.'s (2008) findings that new words could be learned incidentally by reading or reading while listening; however, lexical items occur more frequently in the text were more resistant to decay, provide evidence for this proposition. Still, future investigations are necessary to validate the conclusions that can be drawn from this study.

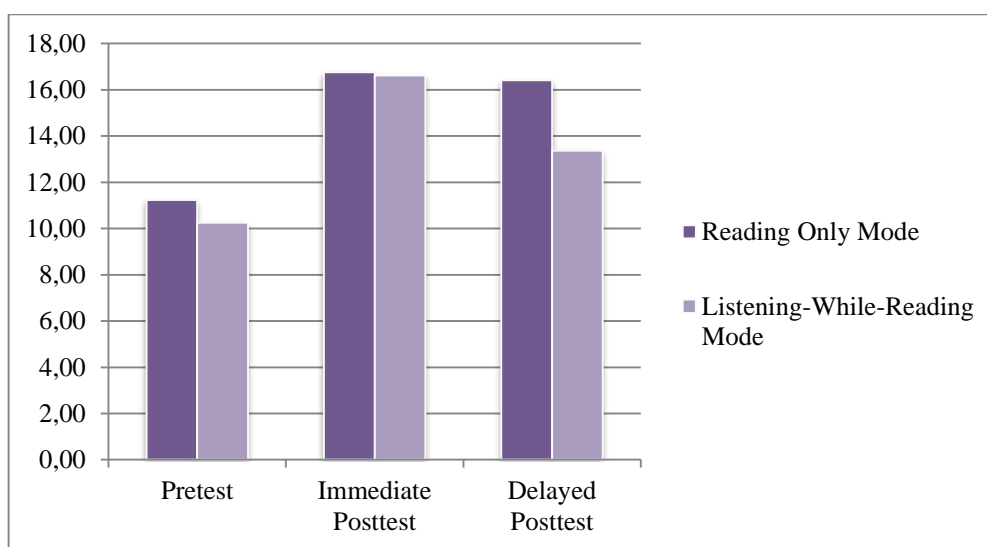


Figure 2. Retain Data over Three Test Periods

5. CONCLUSION

Lexical knowledge is essential to L2 language acquisition; however, it is a daunting and unending task. The present study consisted of a two-group, pre/post/delayed post-test quasi-experimental design. The main objective of the study was to investigate whether EFL learners could learn new L2 words incidentally from reading texts that they studied in their course books and to examine whether there was an effect of simultaneous input modality on the rate of vocabulary learned. To see to what extent the words incidentally learned were recalled after training, the retainment of new words was also assessed one week after. The study revealed four major findings. First, without being exposed to any intentional instruction on target vocabulary, 5.53 words were learned by participants in the control group through reading, which was a gain of more than 49%. Second, when written input was enhanced with aural input, it resulted in higher success in lexical development. The experimental group who listened to the audio recordings of the texts while simultaneously reading them learned 6.37 new

words on average, a gain of higher than 60%. Third, a comparison between reading-only and listening-while-reading conditions showed that being exposed to more than one input simultaneously resulted in relatively higher gains in terms of lexical development, but the difference was relatively small. Finally, contrary to expectations, words learned incidentally through reading were more resistant to decay than words learned through listening-while-reading. Mean scores of one-week delayed post-test revealed that control group had an advantage over experimental group in retaining recently learned vocabulary.

The findings have several important implications for EFL classrooms. First of all, this study provides evidence that EFL learners can learn some new vocabulary through reading and retain it over a week without any deliberate effort or intention neither by the teacher nor by the learners themselves. It points to the importance of extensive reading in L2 development in general and L2 lexical development in specific as Krashen (2008) proposed. Therefore, EFL teachers may expose their students to reading input as much as possible in the classroom environment and encourage them to read in L2 outside the classroom. Secondly, the study shows that providing more than one input simultaneously (reading + listening) does not seem to significantly affect the incidental L2 vocabulary learning. Thus, learners need some deliberate word-focused instruction following the initial exposures to learn these words permanently. Besides, instead of exposing L2 learners to simultaneous input modalities, it may be more effective for teachers to increase the frequency of encounters with new words in the reading texts.

Like any experimental study, this quasi-experimental study has some limitations. First, the study analyzed and examined data from only 33 participants. Although the study started with ninety participants, 57 of them had to be omitted as they failed to complete all aspects of the study. Secondly, the sample consists of only English learners who are native speakers of Turkish, which makes it difficult to arrive at broad generalizations of the results outside the study sample. Also, the duration of the entire study is exactly three weeks. Future studies can reach a larger sample size and use longitudinal designs to understand better the role of input type and modality on incidental L2 vocabulary acquisition and retention. Finally, the materials used for treatment consisted of only five short unmodified reading texts compiled from A2 level course books because the primary purpose of the study was to investigate the rate of lexical gains through reading materials in classroom environments. Given that exposure frequency is a critical factor in incidental vocabulary acquisition, longer and modified texts may be utilized in future studies to investigate the role of the number of exposures on the rate of learning through reading and listening-while reading.

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GENİŞLETİLMİŞ TÜRKÇE ÖZET

İKİNCİ DİL EDİNİMİNDE RASLANTISAL SÖZCÜK EDİNİMİ: İŞİTSEL GİRDİ OKUMA SIRASINDA SÖZCÜK EDİNİMİNİ KOLAYLAŞTIRIR MI?

GİRİŞ

Rastlantısal sözcük öğrenimi üzerine yapılan birçok çalışma, sözcüklere maruz kalma sıklığının ve girdi modunun (yazılı, işitsel, video, resimler vb.) yabancı dilde sözcük öğrenme üzerindeki etkilerini incelemiştir. Ayrıca, bu çalışmalar genel olarak ikinci dilde ileri düzeyde veya ileri düzeye yakın yeterliliğe sahip öğrenenlerle yürütülmüş ve öncelikle okuma becerisine odaklanmıştır (Brown ve diğerleri, 2008; Horst, 2005; Pellicer-Sánchez & Schmitt, 2010; Rott, 1999; Waring & Takaki, 2003). Ancak, ikinci dil yeterliliği düşük olan öğrencilerin rastlantısal sözcük edinimi ve eş zamanlı girdi yöntemlerinin bu öğrencilerin sözcük öğrenimi üzerindeki rolüne dair yapılan araştırmaların sayısı sınırlıdır. Ayrıca, Türkiye bağlamında anadili Türkçe olan öğrencilerle bu konuda yapılan çalışmalar yok denecek kadar azdır. Bu bağlamda, Türkiye'de bir devlet üniversitesinde yoğun İngilizce programında A2 seviyesinde İngilizce öğrenen öğrencilerle yapılan bu yarı deneysel çalışma salt okuma ve okurken dinleme modlarının rastlantısal sözcük öğrenimini etkileyip etkilemediğini incelemeyi amaçlamaktadır. Postpozitivist bir dünya görüşü, bu araştırmaya en uygun olanıdır, çünkü ele alınan araştırma soruları, farklı girdi yöntemlerinin (okuma ve okuma sırasında dinleme) ikinci dil öğretimi sırasında sözcüksel öğelerin rastlantısal edinimi üzerindeki rolünün tanımlanmasını gerektirir (Creswell, 2014).

METOT

Anadili Türkçe olan ve İngilizce'de temel yeterliliğe (A2) sahip doksan öğrenci çalışmaya gönüllü olarak katıldı. Otuz üç öğrenci çalışmanın tüm oturumlarını tamamladı. Elli yedi katılımcı, yedi testten en az birini tamamlamadıkları için çalışmadan çıkarıldı. Kontrol grubu yaşları 17 ile 23 arasında değişen 17 kişiden (7 kadın, 10 erkek), deney grubu ise yaşları 18 ile 32 arasında değişen 16 kişiden (6 kadın, 10 erkek) oluşmaktadır.

Çalışma için farklı İngilizce ders kitaplarından seviyelendirilmiş (A2) beş okuma metni seçilmiştir. Çalışmanın ana amacı, ikinci dil öğrencilerinin herhangi bir doğrudan sözcük öğretimine maruz kalmadan çevrimiçi okuma sınıflarında öğrenebilecekleri ve hatırlayabilecekleri ortalama sözcük sayısını belirlemek olduğu için, deneysel/değiştirilmiş materyaller yerine ders kitaplarındaki materyaller tercih edildi. Katılımcılar, 25 hedef sözcükten oluşan toplamda beş metin okudular. Her metin, her biri metin boyunca iki veya üç kez sunulan beş hedef sözcük içeriyordu. Okuma metinlerinin uzunlukları benzerdi. Maruz kalma süresini kontrol edebilmek ve öğrencilerin hedef sözcüklere odaklanmasını önlemek için, okuma metinleri süreli PowerPoint slaytlarında sunuldu. Öğrenciler ekrandaki cümlelerin

uzunluđuna gre sadece iki veya c cmle okudular. đrencilerin ve arařtırmacının okuma metnini tartıřabilmeleri iin her slayttan sonra boř bir slayt eklenmiřtir. Kontrol grubundan farklı olarak deney grubu okuma sırasında iřitsel girdiye de maruz bırakılmıřtır.

Aynı 25 soruluk maddeler uygulamadan nce, hemen sonra ve bir hafta sonra katılımcıların szck bilgisini lmek iin kullanıldı. Testler bir dosya paylařım platformuna yklendi ve katılımcılar testlere kendilerine gnderilen URL zerinden eriřti. Katılımcıların hedef szcklere iliřkin bilgileri oktan semeli anlam-szck eřleřtirme sorularıyla lld. đrencilerden her soruda yer alan beř seenek arasından hedef szcđn dođru anlamını semeleri istendi.

Uygulamalardan nce, katılımcıların hedef szcklerle ilgili n bilgileri evrimii bir n testle deđerlendirildi. đrenciler szlk veya eviri programları kullanmamaları ve soruları sadece mevcut bilgilerine gre cevaplamaları konusunda uyarıldılar. Arařtırmacı n testten bir hafta sonra her iki grupta uygulamalara bařladı.

Uygulamalar sırasında kontrol grubundaki katılımcılardan sadece metni okumaları istendi. Deney grubundaki katılımcılardan ise metnin ses kaydını dinlerken metni okumaları istendi. Her okuma etkinliđinden sonra, iki gruptaki katılımcılar da evrimii bir testi (hemen son test) tamamladılar. n testte sorulan hedef szckler ile ilgili sorular okuduđunu anlama sorularına dahil edildi. Bu nedenle her bir hemen test beř szck bilgisi sorusunu ieren bir blm ve alıřtıkları metinle ilgili okuduđunu anlama sorularını ieren bir blm olmak zere iki blmden oluřuyordu. Okuduđunu anlama soruları tm đrencilerin kolaylıkla zebileceđi ve bu sorulara ok az zaman ayırabilecekleri řekilde hazırlandı. Katılımcıların okuduđunu anlama sorularına verdikleri cevaplar analize dahil edilmedi. Katılımcıların hem szck bilgisi hem de okuduđunu anlama sorularını yanıtlamalarının temel nedeni, alıřmanın asıl amacını fark etmemelerini sađlamak ve sonraki đretim uygulamalarda szcklere bilinli bir řekilde dikkat etmelerini nlemektir. Bir haftada tamamlanan beř uygulama seansında da aynı prosedr izlendi. Katılımcıların beř anlama testinde szck blmlerinden aldıkları puanlar, anlık test puanlarını oluřturdu. Katılımcılar ertelenen son testi bir hafta sonra evrimii olarak aldılar. Btn uygulamalardaki test đeleri aynıydı.

Szck-anlam eřleřtirme testlerinde đrencilerin oktan semeli maddelere verdiđi yanıtlar dođruluk aısından 1 (dođru cevaplar iin) veya 0 (yanlıř cevaplar iin) olarak kodlanmıřtır. Betimsel analiz yapmak ve katılımcıların szcksel kazanımlarının ortalamalarını ve yzdelerini hesaplamak iin SPSS, srm 25.0. kullanılmıřtır. Arařtırmacı testleri kendisi puanlamıřtır.

BULGULAR VE TARTIřMA

alıřmanın temel amacı, yabancı dil olarak İngilizce đrenenlerin ders kitaplarındaki metinler aracılıđıyla yeni szckleri rastlantısal đrenip đrenemeyeceklerini arařtırmak ve eř zamanlı girdi ynteminin đrenilen szck oranı zerinde bir etkisi olup olmadığını incelemektir. Rastlantısal đrenilen szcklerin đretimden sonra ne lde hatırlandıđını grmek iin bir hafta sonra yeni

sözcüklerin akılda kalması da değerlendirildi. Çalışma dört ana bulguyu ortaya çıkardı. İlk olarak, kontrol grubundaki katılımcılar hedef sözcükler ile ilgili herhangi bir kasıtlı öğretime maruz kalmadan okuma yoluyla %49'dan fazla bir kazanımı işaret eden 5.53 sözcük öğrenmiştir. İkinci olarak, yazılı girdi işitsel girdiyle birleştirildiğinde sözcüksel gelişimde daha yüksek başarı ile sonuçlanmıştır. Metinleri okurken ses kayıtlarını dinleyen deney grubu, %60'ın üzerinde bir kazanımla ortalama 6,37 yeni sözcük öğrendi. Üçüncüsü, salt okuma ve okurken dinleme koşulları arasında yapılan bir karşılaştırma, aynı anda birden fazla girdiye maruz kalmanın sözcüksel gelişim açısından nispeten daha yüksek kazançlarla sonuçlandığını gösterdi. Son olarak, beklentilerin aksine, okuma yoluyla rastlantısal öğrenilen sözcükler, okuma sırasında dinleme yoluyla öğrenilen sözcüklere göre bozulmaya karşı daha dirençliydi. Bir hafta gecikmeli son testin ortalama puanları, kontrol grubunun yakın zamanda öğrenilen kelime dağarcığını korumada deney grubuna göre daha avantajlı olduğunu ortaya koydu.

SONUÇ

Bu çalışma iki gruplu, ön/son/gecikmeli son-test yarı deneysel desenden oluşmaktadır. Yukarıda belirtilen bulguların İngilizce sınıfları için birkaç önemli çıkarımı var. Her şeyden önce, bu çalışma, yabancı dil olarak İngilizce öğrenenlerin ne öğretmenleri ne de öğrencilerin kendileri tarafından herhangi bir kasıtlı çaba veya niyet olmaksızın sadece okuyarak bazı yeni sözcükler öğrenebileceklerine ve bunları bir hafta boyunca akıllarında tutabileceklerine dair kanıt sunmaktadır. Bu sonuçlar, Krashen'in (2008) da önerdiği gibi, kapsamlı okumanın genelde ikinci dil gelişiminde ve özelde ikinci dilde sözcük gelişimindeki önemine işaret etmektedir. Bu nedenle, İngilizce öğretmenleri öğrencilerini sınıf ortamında mümkün olduğunca çok okuma girdisine maruz bırakmalı ve onları sınıf dışında yabancı dilde okumaya teşvik etmelidir. İkinci olarak, bu çalışma aynı anda birden fazla girdi sağlamanın (okuma + dinleme) ikinci dilde rastlantısal sözcük öğreniminde avantaj sağladığını ancak uzun süre akılda tutmayı garanti etmediğini göstermektedir. Bu nedenle, öğrencilerin bu sözcükleri kalıcı olarak öğrenmek için ilk maruz kalmalarını takiben bazı kasıtlı kelime odaklı öğretime ihtiyaçları vardır. Ayrıca, öğretmenlerin okuma metinlerinde öğrencilerinin yeni sözcüklerle karşılaşma sıklığını artırması sözcük ediniminde etkili olabilir.

POKER FACE TO BYE BYE IN SCHOOLS: THE RELATIONSHIP OF SCHOOL ADMINISTRATORS' EMOTIONS AND JOB SATISFACTION

Sevgi YILDIZ¹

Geliş Tarihi/Received: 18.04.2023 Elektronik Yayın/Online Published:20.06.2023

DOI: 10.48166/ejaes.1285223

ABSTRACT

This study investigates the relationship of school administrators' emotions of enjoyment, pride, frustration, hopelessness and anxiety about their work and school with job satisfaction. 307 school administrators working in public schools in Turkey participated in the research. In the research, causal comparative and correlational survey model, which are among the quantitative research methods, were used. The data of the study were collected using the "Principal Emotion Inventory" and "Job Satisfaction Scale". Descriptive and evident-based statistics techniques were used in the analysis of the data. As a result of the research, it was determined that the job satisfaction levels of the school principals were higher, as their levels of pleasant emotions of enjoyment and pride, were higher than their unpleasant emotions of frustration, hopelessness, and anxiety. While gender, work and level did not make a significant difference in the job satisfaction levels of school administrators, the pride levels of female school administrators were higher than that of male school administrators. In addition, principals' emotions of anxiety were determined more than vice principals. Suggestions have been developed for practitioners and other researchers considering the results and limitations of the research.

Keywords: Emotions in administrations; jobs satisfaction; pleasant emotions; unpleasant emotions; multiple regression analysis.

¹Dr.Öğretim Üyesi, Ordu Üniversitesi, Eğitim Bilimleri Bölümü, sevgiyildiz@odu.edu.tr, ORCID: 0000-0003-1116-7896

OKULLARDA POKER YÜZE BYE BYE: OKUL YÖNETİCİLERİ DUYGULARININ İŞ DOYUMLARI İLE İLİŞKİSİ

ÖZET

Bu araştırmada okul yöneticilerinin görevleri ve okullarına yönelik sahip oldukları keyif, gurur, hayal kırıklığı, umutsuzluk ve kaygı duygularının iş doyumları ile ilişkisi incelenmiştir. Araştırmaya Türkiye’de kamu okullarında görev yapan 307 okul yöneticisi katılmıştır. Araştırmada nicel araştırma yöntemlerinden nedensel karşılaştırma ve ilişkisel tarama modeli kullanılmıştır. Araştırmanın verileri “Okul Yöneticileri Duygu Envanteri” ve “İş Doyumu Ölçeği” kullanılarak toplanmıştır. Verilerin analizinde betimsel ve kanıtlamasal istatistik teknikleri kullanılmıştır. Araştırma sonucunda okul müdürlerinin iş doyum düzeylerinin yüksek olduğu yanı sıra hoş duygular olan keyif ve gurur düzeylerinin hoş olmayan hayal kırıklığı, umutsuzluk ve kaygı duygularından yüksek olduğu belirlenmiştir. Cinsiyet, görev ve kademe okul yöneticilerinin iş doyum düzeylerinde anlamlı bir farklılık oluşturmazken, kadın okul yöneticilerinin gurur düzeyleri erkek okul yöneticilerinden yüksek çıkmıştır. Ayrıca müdürlerin kaygı duyguları müdür yardımcılarında daha fazla tespit edilmiştir. Araştırmada okul yöneticilerinin görevleriyle ilgili yaşadığı keyif, kaygı ve umutsuzluk duygularının iş doyumunun anlamlı bir yordayısı olduğu sonucuna ulaşılmıştır. Araştırma sonuçları ve sınırlılıkları göz önünde bulundurularak uygulayıcılar ve diğer araştırmacılar için öneriler geliştirilmiştir.

Anahtar Kelimeler: Okul yöneticilerinde duygular; iş doyum; hoş duygular; hoş olmayan duygular; çoklu regresyon analizi.

1. INTRODUCTION

Schools, which are educational organizations, are one of the most important social institutions due to their macro and micro level missions. As it has been revealed in the international and national context by various types of research in the past (Spillane and Diamond, 2007), the desired and healthy functioning of the schools as an organization is closely related to the school administrators. In other words, in order for schools to be successful, they need to meet the demands and needs of school administrators (Saiti and Fassoulis, 2012) because their actions directly affect the functioning of the school as a unit. Thus, it is important for school administrators to be satisfied with their work and schools. This may affect school administrators' well-being processes. Because school administrators, as the leader of their organizations, have the responsibility to bring schools to the desired quality. School administrators who establish a desired bond with their schools and have pleasant emotions about being an administrator can display high performance and leadership. Otherwise, school outputs that will save the day can be obtained with school administrators who have negative attitudes towards their work and have an understanding of overtime instead of connecting with their organization. In order to fulfill these responsibilities, the emotions of school administrators in relation to their school and work are significant.

Emotional experiences such as hope, pride, enjoyment, embarrassment, anger, and anxiety can arise during operations in pursuit of various goals or maintaining various standards in schools and classrooms. If these emotions are positive, it is possible for the employees to be satisfied with their jobs and increase their job satisfaction, and if they are negative, it is possible to cause dissatisfaction

and decrease in job satisfaction. All of these can also be reflected in the performance of the employees and the success of the school. It can be expected that the job satisfaction of school administrators who have positive emotions about their duties and schools will increase. On the contrary, school administrators who have negative emotions towards their duties and schools may experience job dissatisfaction. Since school administrators are the leaders of the organizations, their emotions can also be reflected on the teachers and students. According to Hargreaves (2001), the decisions taken by principals and the power they use can affect teachers' emotions and the emotional atmosphere related to their work.

Although the subject of emotions has been widely adopted and applied in organizations (Winter, 2018), it can be said that the number of theoretical and empirical studies in the literature, especially within the scope of educational organizations, is quite limited (Yıldız et al., 2023). Regarding the consequences of school administrators' emotions, other relevant aspects of the current literature rather than directly emotions, such as emotional labor strategies (Maxwell and Riley, 2017), emotional intelligence (Arar and Oplatka, 2018; Chen and Guo, 2020; Erkol, 2021; Kandaz, 2018; Oplatka, 2017) and emotional regulation (Arar, 2017). In addition, it is seen in the literature that there are many studies on the job satisfaction of teachers, whereas studies on the job satisfaction of school administrators are relatively limited (Dude, 2012; Liu and Bellibaş, 2018). Considering that emotions are complementary to the leadership process and that the emotions of school administrators affect all school stakeholders (Hargreaves, 2001) this study aims to fill these gaps in the literature. Based on this information, the problem statement of this research is to determine the relationship of school administrators' emotions of enjoyment, pride, frustration, hopelessness, and anxiety towards their school and their duties with job satisfaction. Accordingly, the study seeks answers to the following sub-problems:

1. What is the level of school administrators' emotions of enjoyment, pride, frustration, hopelessness and anxiety, and job satisfaction?
2. Do school administrators' emotions of enjoyment, pride, frustration, hopelessness, and anxiety, and job satisfaction show a significant difference according to various variables (gender, duty, and level)?
3. Do school administrators' emotions of enjoyment, pride, frustration, hopelessness, and anxiety significant predict their job satisfaction?

1.1. Job Satisfaction

Job satisfaction does not have an agreed definition. Vroom (1964) defines job satisfaction as the emotional orientation of individuals towards the job roles they currently occupy (Act. Aziri, 2011). In another frequently used definition, Locke (1976) discusses job satisfaction from an emotional point of view as "a pleasant or positive emotional state resulting from the evaluation of one's job or work experiences" (1300). According to Schneider and Snyder (1975), job satisfaction is an internal

response based on the formation of individuals' norms, expectations, and values. As Spector (1997) stated, job satisfaction continues to be one of the most important issues today because of its relevance to the physical and mental well-being of employees and its effects on work-related behaviors such as productivity, absenteeism, turnover, and employee relations. Job satisfaction is clearly the most important contributor to job performance. (Bakotic, 2016; Eckman, 2004).

Hulin and Judge (2003) stated that job satisfaction includes a multidimensional psychological reaction and such reactions also include cognitive and emotional-behavioral elements. From an emotional perspective, job satisfaction is largely related to one's emotions, and therefore “an individual's assessment of the extent to which the job fulfills his or her job values can lead to a positive emotional satisfaction or on the contrary, a negative feeling of dissatisfaction” (Coomber and Barriball, 2007, 297). Emotional job satisfaction is generally accepted as synonymous with general satisfaction. It is assessed through items that ask people how much they like their job. Conversely, assessing the cognitive aspects of job satisfaction, results from rational comparison of working conditions with a desired, expected or promised standard (Moorman, 1993; Spector, 1997). Although the two components of job satisfaction (emotional and cognitive) may have different effects on organizations (Moorman, 1993), studies provided evidence that they work parallel with each other and are not completely separated from each other (Edwards, 1990). Job satisfaction can manifest itself both as a general feeling towards one's job and as discrete attitudes about various aspects of the job. The general approach is most useful when it comes to holistic job satisfaction, while the aspects approach is used to discover which parts of the job create satisfaction or dissatisfaction (Lu et al., 2005).

Job satisfaction is an employee's sense of accomplishment and satisfaction at work. It is often perceived as directly linked to productivity and personal well-being. Job satisfaction is being in a job that one enjoys, doing this job well, and getting the reward for his/her effort. Job satisfaction also expresses the enthusiasm and happiness of a person from his/her job. Job satisfaction is the main component that leads to the achievement of other goals that lead to recognition, income, promotion and satisfaction (Kaliski, 2007). Job satisfaction factors are classified as personal, organizational, and cultural. Personal factors can be classified as intellectual, area of expertise, age, gender, working environment, education level, working experience, working hours, personality (emotion), way of thinking (perception), and working style, attitude, etc. Organizational factors can be displayed as type of job, organizational structure, status, quality control, financial guarantee, promotion opportunity, social interaction and business relationship, etc. (Suriansyah and Aslamiah, 2018). Hofstede's work establishes a link between cultural characteristics and job satisfaction (Saari and Judge, 2004). The high job satisfaction experienced by the employees in their organizations contributes to organizational commitment, job integration, physical and psychological health, and a quality life outside of work. Job

dissatisfaction causes absenteeism, job turnover, labor problems, job-related complaints, union initiatives and negative organizational climate (Cherrington, 1994).

1.2. Emotions

Emotions are everyday experiences in every aspect of life, from the workplace to the outside. Emotions are a reaction to or a cause of reactions to events and situations encountered. Although emotions have an important role in actions, it is seen that they were not emphasized in organizational researches until the 1990s (Fox and Spector, 2002). However, emotions are an inseparable part of working life (Fischer and Manstead, 2008). The workplace is an environment that fosters strong emotions and fulfills physical and psychological needs (Fox and Spector, 2002). Emotions are strong feelings that have physical and cognitive elements and affect behavior and are an integral part of the spiritual world. Since the human being was defined as a rational being in the management literature, a strong belief was formed that emotions should not be mixed with working life. Because emotions have been seen as anti-rationality as an element that can hinder productivity, which is the basis of classical management (Can et al., 2015). With the discovery of neoclassical management approaches and especially the place of socio-psychological processes in organizational life, this understanding has gradually left its place to approaches that consider people holistically. Seçer (2010) also states that since the 1980s, the existence of emotions in working life, their expression styles and their role in organizational success have been increasingly discussed. Thus, a change in understanding towards people as emotional beings has begun to occur from people as unemotional employees in organizations.

Emotions are “conscious and/or unconscious judgments about perceived success in achieving goals or maintaining standards or beliefs”. Emotional experiences are a holistic "form of existence" that includes physiological, psychological, and behavioral aspects (Schutz et al., 2006, 344-345). Some studies argue that there are six basic emotions, namely fear, anger, sadness, happiness, hatred, and surprise, and other emotions are derived from them. On the other hand, people's reactions to emotions may not be the same or the intensity of emotions may differ. However, it is known that people are more affected by negative emotions and forget these emotions more difficult (Can et al., 2015; Robbins and Judge, 2013).

Emotions, which have been tried to be kept out of organizations for many years, are an important feature of human beings. The expression “poker face”, which is used as a symbol of not participating in the work and especially the management process, is used less frequently in the organizational literature with the developing literature and empirical studies. Interpreting a person independently of his feelings will make it insufficient to understand his behavior in the organization (Can et al., 2015). Because emotions generate energy and commitment, convey meaning, point to goals and concerns, and reflect moral attitudes in organizations. As a result, much motivation,

commitment or moral commitment from employees cannot be expected from unfeeling organizations (Fischer and Manstead, 2008). Because the positive or negative emotions experienced by the person can affect processes that are important for employees and organizations such as stress, burnout, commitment, and job satisfaction. Emotional work in organizations is important because it is one of the essential elements for effective job performance (Robbins and Judge, 2013).

1.3. Emotions and Job Satisfaction in School Administrators²

It is a fact that the job satisfaction of school stakeholders from their jobs is important for the quality of education in schools. For this reason, it is expected that creating conditions that will help school stakeholders to enjoy their work and provide satisfaction will contribute to the quality of education in schools (Koçak and Eves, 2010). Job satisfaction surveys can be used to predict the behaviors of education employees such as absenteeism and leaving the job, as well as enabling the determination of problem areas and their levels before they reach risky levels. In this direction, the educational administrators will accept that they will behave positively towards the organization to the extent that it responds to the wishes and needs of the employees and will work towards this (Balçı, 1983). School administrators, whose one of the most important responsibilities is to provide job satisfaction of educational employees, especially teachers, need to achieve job satisfaction in order to fulfill these responsibilities (Keefer, 2007). Although school administrators' job satisfaction is important for recruiting and retaining effective leaders, research investigating school factors for the determining role in such attitudes has been unexpectedly rare. Considering the critical role of a school principal in leading to school success, it is important to understand the state of the principal's psychological conditions and previous school factors (Liu and Bellibaş, 2018).

According to the theory developed by Weiss and Cropanzano (1996), emotional positive or negative reactions shaped by work environment, work events, and personal variables affect the level of job satisfaction. In addition, emotions affect many performance and satisfaction variables in organizations such as organizational citizenship, organizational commitment, effort, tendency to leave, and workplace deviance (Robbins and Judge, 2013). Moreover, Maxwell and Riley (2017) emphasize that emotions are important in organizational literature as they affect the relations within the organization. School administrators constantly communicate with multiple stakeholders such as children, adult employees, peers, parents, and supervisors/employers at different developmental levels. In order for a school to function effectively, all these groups need to be sensitive to their needs, balance conflicting goals, and be able to move in between stakeholder interactions smoothly while constantly managing the impression others have of them (Berkovich and Eyal, 2015). For this reason, administrators deal with the increasing emotions of both themselves and others every day. School leaders have an emotionally intense job, and the intense nature of their work has direct consequences

² In this study, although school administrators are considered as principals and assistant principals, principals are especially emphasized in the international literature.

on their health and well-being and their own personal relationships (Heffernan et al., 2022). In other words, this situation affects the psychosocial and physiological health of school leaders and mutually affects job performance and job satisfaction (De Nobile and McCormick, 2010; Maxwell and Riley, 2017). Therefore, the emotions and emotional abilities of school leaders are becoming one of the key aspects of moving a school forward (Chen and Guo, 2020; Chen and Walker, 2021). In parallel, an "emotional turn" has been observed in educational research in recent years (Zembylas, 2021).

Although emotions are an important variable that affects the lives and work of educators, the emotions of school administrators and teachers are not fully defined (Chen and Walker, 2021). Despite emphasizing the rational and technical aspects of school management, the emotional side of the role of school leadership has been ignored (Crawford, 2018). The discovery of the emotions of the school administrators enables the discovery of the emotional elements of leadership, as well as the analysis of the emotions and other organizational behaviors of the school administrators, and the consideration of the results (Chen, 2020). Bush (2018) states that the emotions of school administrators are a neglected dimension in terms of school success and that school administrators should be emotional leaders. Crawford (2018) argues that especially leadership principles should be based on the understanding that the emotional dimension of leadership is very important. Emotions can be both 'destructive and empowering' in the daily lives of leaders (Jansen 2006).

2. METHOD

2.1. Research Model

Causal comparative design and correlational survey model of the quantitative research methods were used in this study. Causal-comparative design is a research design that tries to determine the relationships between independent and dependent variables after an action or event has occurred (Brewer and Kubn, 2010). In the study examining the effects of school administrators' feelings of enjoyment, pride, frustration, hopelessness, and anxiety on job satisfaction, emotions were considered as independent variable and job satisfaction as dependent variable.

2.2. Population and Sample

The population of the study consists of school administrators (principals, assistant principals, head assistant principal) who work at kindergartens, primary schools, secondary schools and high schools. The convenient sampling method, one of the non-random sampling methods, was used in the study. Within the scope of the research, 307 school administrators were reached. 70 of the school administrators are women (22.8%); 237 (77.2%) of them are male. The distribution of school administrators is as principal (209; 68.1%), head assistant principal (9; 2.9%) and assistant principal (89; 29.0%). When the education levels of school administrators are examined, 197 of them (64.2%) have undergraduate degrees, (197; 64.2%); 100 of them (32.6 %) have master's degrees and 4 of them

with doctorate degrees (1.3%). When the distribution of the levels in which the administrators work is examined, 21 (6.8%) people are in pre-schools; 114 people (37.1%) are in primary schools; 76 people (24.8%) work in secondary schools and 96 people (31.2%) work in high schools.

2.3. Data Collection Tools

The Principal Emotion Inventory. The Principal Emotion Inventory used in the research is a 25-item scale with five dimensions (enjoyment, pride, frustration, hopelessness, and anxiety) developed by Chen (2020). There are five items in each dimension. Participants can give answers ranging from 1 (strongly disagree) to 5 (strongly agree) to the inventory. The inventory was adapted to Turkish by Yıldız et al. (2023). An item in the anxiety dimension was removed from the Turkish version of the inventory and it consists of a total of 24 items. The Cronbach alpha internal consistency coefficients of the sub-dimensions in the original form of the Turkish version of the inventory were 0.91 for enjoyment, 0.81 for pride, 0.83 for frustration, 0.87 for anxiety and 0.78 for hopelessness respectively. The average Cronbach alpha internal consistency coefficient of the inventory is 0.84.

Job Satisfaction Scale. Başol and Çömlekçi (2020) conducted the Turkish validity-reliability study of the reinterpreted version of the Job Satisfaction Scale developed by Brayfield and Rothe (1951) and shortened by Judge, Locke, Durham, and Kluger (1998). Participants can give answers ranging from 1 (strongly disagree) to 5 (strongly agree) to the 5-point Likert-type scale consisting of 5 items and a single dimension. The Cronbach alpha internal consistency coefficient of the scale is 0.92.

Demographic Information Form. Information about school administrators was collected with a demographic information form, which includes information about gender, work, level, education status, marital status, seniority of management and teaching, and the faculty they graduated from.

2.4. Data Collection

Ethical permissions were obtained from an institutional committee before the data of the study were collected. In order to collect the research data, a form was created with the relevant data collection tools in the online environment. With this form, data collection tools were applied to school administrators by the researcher. Finally, data collection was completed in the spring term of 2022.

SPSS 22 program was used in the analysis of the data. Assumptions were started with 307 participants who filled out the online form. Missing value and extreme value analysis were performed. No missing data were found and 40 values determined as extreme values were excluded from the data set. Thus, the analysis continued with 267 data. According to the normality analysis, it was seen that the mode, median and arithmetic mean values of the scales were close to each other. Skewness and Kurtosis coefficients of the Principal Emotion Scale - enjoyment (skewness: -1.307; kurtosis: 1.628), pride (skewness: -1.643; kurtosis: 0.785), frustration (skewness: -0.112; kurtosis: 0.033), hopelessness (skewness: -0.019; kurtosis: 0.120) and anxiety (skewness: -0.439; kurtosis: 0.167) - and the Job Satisfaction Scale (skewness: -1.168; kurtosis: 1.607) were found to be between -2 and +2. In addition,

graphical analyzes were done through the histogram, scatter diagram, and box-whisker graphics. Although it was observed that there were extreme values in favor of low scores for the variables other than anxiety and hopelessness, as a result of the examinations, it was concluded that the scores of all the relevant variables showed a normal distribution. Due to normality, no treatment was applied to the extreme values.

Descriptive statistical analyzes (frequency, percentage, mean, etc.) were used to determine school administrators' perceptions of their emotions and job satisfaction. Whether the scores of school administrators' feelings and job satisfaction differ significantly according to independent variables (gender, duties, and grade) were analyzed with parametric tests (independent sample t-test and one-way analysis of variance [ANOVA]). Since the variables are on an equal interval scale and continuous, correlation analyses between the variables were made with Pearson Moment Correlation (Simple Linear Correlation) analysis. Simultaneous-standard multiple regression analysis was used to determine to what extent the feelings of enjoyment, pride, frustration, hopelessness, and anxiety predicted the job satisfaction score.

In order to perform multiple regression analysis, it was tested whether some assumptions were met. In order to perform multiple regression analysis, it is seen that the number of samples ($n=267$) is larger than $50 + 8m$ (number of m independent variables) stated by Tabachnick and Fidell (2013). In the next step, Mahalanobis distances were used for outlier analysis of normally distributed independent variables. In this study with five independent variables, two data with a Mahalanobis distance greater than the critical value of 20.52 (Pallant, 2016, 177) were excluded from the study. In addition, according to Tabachnick and Fidel (2013), since participants with a Cook's Distance value greater than 1 are a potential problem, two more participants with a value greater than 1 maximum were excluded from the data set.

In the next step, it was examined whether there was a significant correlation between the independent variables and the dependent variable. According to the results of the analysis, there is a significant positive correlation between the variables of enjoyment ($r=.467$, $p<.01$), pride ($r=.160$, $p<.01$) and anxiety ($r=.125$, $p<.01$) and job satisfaction. A negative and significant correlation was found between the variable of hopelessness ($r=-.178$, $p<.01$) and job satisfaction. However, no significant correlation was found between frustration ($r=.096$, $p>.01$) and job satisfaction. Accordingly, the variable of frustration, which did not have a significant correlation with the variable of job satisfaction, was not included in the multiple regression analysis. Multicollinearity and autocorrelation problems, which are other conditions of multiple regression analysis, were examined. In the analyzes made, it can be said that there is no autocorrelation since Durbin Watson statistic is between 1.5-2.5 (1.642) according to the model summary table. It was observed that the correlations between the independent variables were below 0.44. According to the Coefficients table, VIF (Variance Inflation Factor) values were found to be below 10 and tolerance values above 0.1.

Considering all this information, it can be said that there is no problem of multicollinearity among the predictive variables. As a result of all the examinations, it was determined that normality, correlation, multinormality, linearity, multicollinearity, autocorrelation analyses were suitable for multiple linear regression analysis.

3. FINDINGS

According to the sub-problems of the study, school principals' feelings of enjoyment, pride, frustration, hopelessness, and anxiety, and job satisfaction levels were examined and the descriptive findings obtained are given in Table 1.

Table 1. Descriptive Findings for Data Collection Tools

Scales	N	\bar{X}	Sd	Scores available	
				Minimum	Maximum
Job Satisfaction	267	21.49	3.21	5	25
Enjoyment	267	23.22	1.92	5	25
Pride	267	24.24	1.27	5	25
Frustration	267	17.25	4.07	5	25
Hopelessness	267	15.98	4.22	5	25
Anxiety	267	15.12	3.27	4	20

According to Table 1, job satisfaction of school administrators was measured as ($X=21.49$, $sd=3.21$). When the emotions of school administrators were examined, it was found that enjoyment ($\bar{X}=23.22$, $sd=1.92$), pride ($\bar{X}=24.24$, $sd=1.27$), frustration ($\bar{X}=17.25$, $sd=4.07$), hopelessness ($X=15.98$, $sd=4.22$) and anxiety ($X=15.12$, $sd=3.27$). This finding shows that school administrators have high job satisfaction and especially positive emotions such as enjoyment and pride.

In the study, an independent sample t-test was conducted to compare school administrators' job satisfaction and feelings of enjoyment, pride, frustration, hopelessness, and anxiety by gender. Analysis results are shown in Table 2.

Table 2. Comparison of School Administrators' Emotions of Enjoyment, Pride, Frustration, Hopelessness, and Anxiety and Job Satisfaction by Gender

Scales	Group	N	\bar{X}	Sd	df	t	p*
Job Satisfaction	Female	57	21.19	3.24	261	-.79	.42
	Male	206	21.57	3.21			
Enjoyment	Female	57	23.40	1.92	261	.77	.43
	Male	206	23.17	1.93			
Pride	Female	57	24.57	1.03	261	2.56	.01
	Male	206	24.15	1.32			
Frustration	Female	57	17.70	4.02	261	.92	.35
	Male	206	17.13	4.08			
Hopelessness	Female	57	16.07	3.94	261	.16	.86
	Male	206	15.96	4.30			
Anxiety	Female	57	15.42	2.92	261	.78	.43
	Male	206	15.03	3.36			

*p<.05

When Table 2 was examined, it was seen that the perceptions of school administrators' sense of pride differed significantly according to their genders [$t(261)=2.56$; $p<.05$]. It was revealed that female school administrators ($\bar{X}=24.57$) had a higher sense of pride compared to male school administrators ($\bar{X}=24.15$). On the other hand, there was no significant difference between gender and school administrators' job satisfaction and levels of enjoyment, frustration, hopelessness, and anxiety.

In the study, an independent sample t-test was conducted in order to compare the job satisfaction and feelings of enjoyment, pride, frustration, hopelessness, and anxiety of school administrators according to the principal and vice principal. Analysis results are presented in Table 3.

Table 3. Comparison of School Administrators' Emotions of Enjoyment, Pride, Frustration, Hopelessness, and Anxiety and Job Satisfaction by Duty

Scales	Group	N	\bar{X}	Sd	df	t	P*
Job Satisfaction	Principal	183	21.70	3.22	260	1.72	.08
	Assistant Principal	79	20.96	3.16			
Enjoyment	Principal	183	23.36	1.89	260	1.78	.07
	Assistant Principal	79	22.89	1.99			
Pride	Principal	183	24.22	1.29	260	-.284	.77
	Assistant Principal	79	24.27	1.24			
Frustration	Principal	183	17.36	4.11	260	.55	.58
	Assistant Principal	79	17.06	3.98			
Hopelessness	Principal	183	16.08	4.30	260	.43	.66
	Assistant Principal	79	15.83	4.04			
Anxiety	Principal	183	15.43	3.22	260	2.41	.01
	Assistant Principal	79	14.37	3.30			

* $p<.05$

When Table 3 was examined, it was seen that the perceptions of school administrators' sense of anxiety differed significantly according to their duties [$t(260)=2.41$; $p<.05$]. Accordingly, it was revealed that the anxiety levels of the principals ($\bar{X}=15.43$) were higher compared to the assistant principals ($\bar{X}=14.37$). On the other hand, there was no significant difference between the duties and the school administrators' job satisfaction and levels of enjoyment, frustration, hopelessness, and anxiety.

In the study, one-way analysis of variance (ANOVA) was applied to compare the job satisfaction and feelings of enjoyment, pride, frustration, hopelessness, and anxiety of school administrators according to the levels they work. Analysis results are given in Table 4.

Table 4. Comparison of School Administrators' Emotions of Enjoyment, Pride, Frustration, Hopelessness and Anxiety and Job Satisfaction According to Education Levels

Scales	Group	N	\bar{X}	Sd	df	F	P*	Significant Difference
Job Satisfaction	Preschool	16	22.25	3.29	3 259 262	.46	.71	-
	Primary School	99	21.59	3.35				
	Secondary School	82	21.25	3.35				
	High School	66	21.41	2.94				
Enjoyment	Preschool	16	23.28	1.45	3 259 262	2.96	.14	-
	Primary School	99	23.42	1.87				
	Secondary School	82	22.84	2.12				
	High School	66	23.17	1.87				
Pride	Preschool	16	24.31	1.01	3 259 262	.33	.80	
	Primary School	99	24.17	1.33				
	Secondary School	82	24.21	1.27				
	High School	66	24.35	1.27				
Frustration	Preschool	16	16.18	5.07	3 259 262	.78	.50	-
	Primary School	99	17.60	3.99				
	Secondary School	82	16.95	4.00				
	High School	66	17.25	4.02				
Hopelessness	Preschool	16	15.12	5.71	3 259 262	1.70	.16	-
	Primary School	99	15.37	4.02				
	Secondary School	82	16.66	4.39				
	High School	66	16.35	3.92				
Anxiety	Preschool	16	13.62	4.37	3 259 262	1.70	.16	-
	Primary School	99	15.03	3.26				
	Secondary School	82	15.63	3.27				
	High School	66	15.10	2.97				

*p<.05

According to Table 4, it was revealed that the job satisfaction levels of school administrators did not differ significantly according to the level of their work [F(3-262) = .46, p>.05]. In addition, enjoyment [F(3-262) = .296, p>.05], pride [F(3-262) = .33, p>.05], frustration [F(3-262) = .78, p>.05], hopelessness [F(3-262) = 1.70, p>.05] and anxiety [F(3-262) = 1.70, p>.05] levels also do not differ significantly according to the levels they work.

In the study, Multiple Regression Analysis was conducted to examine whether school administrators' feelings of enjoyment, pride, hopelessness, and anxiety predict their job satisfaction. The obtained results are presented in Table 5.

Table 5. Multiple Regression Analysis Results on Predicting School Administrators' Job Satisfaction with Feelings of Pleasure, Pride, Hopelessness and Anxiety

Variables	Nonstandardized Coefficients		Standardized Coefficients	t	p
	β	S.E.	Beta		
Job Satisfaction	7.125	3.374		2.112	0.03
Enjoyment	.740	.104	.444	7.102	0.00
Pride	-.083	.152	-.033	-.545	0.58
Hopelessness	-.172	.048	-.226	-3.606	0.00
Anxiety	.129	.063	.131	2.036	0.04
R = 0.259; Adjusted R ² = 0.247; F(4, 263) =22.496; p = 0.000					

When Table 5 is examined, it was seen that school administrators' feelings of enjoyment, hopelessness, and anxiety significantly predicted their job satisfaction ($F(4-263) = 22.49$, $p < 0.05$). Enjoyment ($\beta = 0.740$, $Beta = 0.444$, $t = 7.102$) and anxiety ($\beta = 0.129$, $Beta = 0.131$, $t = 2.036$) positively affected job satisfaction. The feeling of hopelessness, on the other hand, negatively affected job satisfaction ($\beta = -0.172$, $Beta = -0.226$, $t = -3.606$). Considering the significance tests of the regression coefficients, it is seen that the feelings of enjoyment, anxiety, and hopelessness, which are predictive variables, are significant predictors of job satisfaction. The predictive effect of pride ($p > 0.05$) on job satisfaction is not significant. These findings show that 24.7% of the variance in job satisfaction of school administrators is explained by feelings of enjoyment, hopelessness, and anxiety. Considering the standardized regression coefficients according to the information in Table 5, the order of importance of the predictor variables on job satisfaction; enjoyment ($\beta = .740$), hopelessness ($\beta = -.172$) and anxiety ($\beta = .129$). Among the related variables, the feeling of enjoyment explains 14.5% of the variance on job satisfaction, the feeling of hopelessness explains 3.6% and the feeling of anxiety explains 1% by itself.

4. DISCUSSION AND CONCLUSION

This research was carried out to examine the relationship of the emotions of Turkish school administrators with their job satisfaction while fulfilling their duties at their schools. These emotions were determined as enjoyment, pride, frustration, hopelessness, and anxiety according to the inventory developed by Chen (2020). The school administrators' pleasant emotions such as enjoyment and pride were higher than the unpleasant emotions like frustration, hopelessness, and anxiety. Accordingly, it can be said that school administrators' positive feelings about their duties are stronger than their negative feelings. This may indicate that school administrators' motivation for their duties is high. It is seen that the emotions of school administrators are not studied enough in the international arena (Park and Datnow, 2022). The studies of Park and Datnow (2022) conducted in the United States revealed that principals act as mediators and administrators of their school's emotional climate at the same time

as their emotions. Accordingly, the high level of positive feelings of school administrators about their duties can positively affect the emotional climate of the school and support school success (Bush, 2021). The positive feelings of school administrators towards their schools and professions also affect the feelings of teachers as employees (Argon, 2015). It is inevitable for students to reflect on their feelings. It can also be said that the effect of school administrators' feelings towards their school and profession creates a domino effect (Yıldız et al., 2023). In particular, it has been supported by research that the feelings of principals are extremely important not only for their own well-being, but also for the functioning of a school (Bush, 2018).

In the analysis to determine the difference in the emotions of school administrators according to their gender, it was determined that the emotion of pride in their duties experienced by female school administrators was higher than that of male school administrators. The reason for this is that school administration in Turkey is perceived as 'masculine' (Negiz and Yemen, 2011) and the number of female school administrators is less than that of men (General Directorate of Women's Status, 2020). The role of a school administrator, where women are underrepresented and defined as difficult for women, may support the sense of pride experienced by women. In the analysis to determine the difference in the feelings of school administrators according to their duties, it was determined that the anxiety feelings of the principals were higher than that of the assistant principals. The reason for this may be due to the fact that the leadership mission in schools is basically belongs to school principals. Brennan and Mac Ruairc (2011) found that almost 98% of principals agree that being a principal is an emotionally challenging job, which can be considered as a similar finding. On the other hand, it was determined that the level of duty did not make a significant difference in the feelings of enjoyment, pride, frustration, hopelessness, and anxiety experienced by school administrators. Accordingly, levels cannot be shown as a factor affecting the feelings of school administrators towards their duties and schools.

According to the results of the research, the job satisfaction levels of school administrators were high. High job satisfaction of school administrators who have a high level of pleasant feelings about their duties can be shown as a support for the relationship between these variables. High job satisfaction is important for educational organizations as it increases organizational commitment, motivation and performance (Robbins and Judge, 2013). It is seen that the findings regarding the job satisfaction of school administrators have changed. For example, studies conducted in Turkey in which job satisfaction of school administrators were determined at a moderate level (Çakmak, 2019; Izgar, 2008; Kılıç, 2011; Koçak and Eves, 2010; Yılmaz and Murat, 2008) stand out. Eğriboyun (2015) determined in his study that school administrators have a high level of job satisfaction. In Ireland, it was determined that primary school principals were not very satisfied with their jobs and felt stressed (Darmody and Smyth, 2016). Saiti and Fassoulis (2012) determined that Greek school

administrators were satisfied with their schools. Moreover, it was determined that the job satisfaction of school administrators did not change significantly according to gender, duties and the level of duty.

In the study, the relationship between school administrators' feelings of enjoyment, pride, frustration, hopelessness, and anxiety related to their duties and job satisfaction was examined. Accordingly, considering the correlation between job satisfaction; enjoyment is moderate and positive, anxiety is weak and positive, pride and hopelessness are negative and weak. The relationship between frustration and job satisfaction is not significant. This may be due to the correlation between feelings of frustration and hopelessness. Similarly, in the study conducted by Chen (2020) with Chinese school administrators, the relationship between frustration and job satisfaction was not significant. In the research, it is remarkable that the feeling of anxiety, which is a negative emotion, has a positive relationship with job satisfaction, in other words, the increase in job satisfaction with the increase of anxiety. In addition, it was concluded that school administrators' feelings of enjoyment, hopelessness and anxiety were a significant predictor of the variability in their job satisfaction. Since the sense of pride is associated with a sense of enjoyment, it may not have predicted the job satisfaction of school administrators. With the current research, the effect of feelings towards their duties in increasing the job satisfaction of school administrators has emerged. A similar effect was found in Maxwell and Riley's (2017) study with school administrators in Canada. Hafsa (2015) also found that pleasant feelings were positively associated with job satisfaction; on the contrary, it was determined that unpleasant emotions were positively or negatively related but weakly related to job satisfaction items. Accordingly, emotions are an effective factor on the job satisfaction of school administrators.

In summary, the following results were obtained in the study: i) School administrators have a high level of job satisfaction and feelings of enjoyment and pride in their duties. ii) There is no significant difference between school administrators' genders, duties, levels of employment and job satisfaction scores. iii) Female school administrators are more proud of their duties than male school administrators. v) The feelings of enjoyment, anxiety, and hopelessness are significant predictors of the variability in the job satisfaction of school administrators.

According to this research, the emotions they feel towards their duties and schools are effective on the job satisfaction of school administrators. In this study, it is aimed to draw attention to the fact that there is no place for emotions in organizations that have dominated the management approach for many years, and therefore the "poker face", which is used to represent the apathy and inexpressiveness of the administrators in the management processes, has lost its validity in schools as in other organizations. According to this, the job satisfaction of school administrators who enjoy running the school and who have success anxiety about their administration and school increases significantly. In addition, the feeling of hopelessness that they experience during their administration negatively affects the job satisfaction of school administrators and their satisfaction with their duties.

Moreover, the fact that school administrators experience these feelings can also be evaluated in terms of showing that they adopt the administration and care about the success of their schools.

5. LIMITATIONS AND RECOMMENDATIONS

The findings of this study should be interpreted considering several limitations. In this study, the relationship between emotions and job satisfaction was evaluated according to the subjective thoughts and perceptions of school administrators. Therefore, the findings among the concepts discussed reflect the opinions of school administrators. For this reason, in order to analyze the relationship between related concepts, it is necessary to collect data on related concepts from different organizations and different employees. A second limitation concerns the design of the study. This research is considered as a cross-sectional design. Therefore, the researcher cannot verify causality in the relationships between the variables. The study only reveals the relationships between the variables. This limitation can be overcome by longitudinal studies using mixed methods or experimental designs. Third limitation is that this study outlined how emotions affect job satisfaction when applied in public schools at the K-12 level. In the future, this study can be repeated in other educational institutions by including private schools at K-12 level. The last limitation of the study is that it is the first study in Turkey to investigate the relationship between emotions and job satisfaction in school administrators. Therefore, in order to draw stronger conclusions from the research results, the study should be repeated by other researchers. Since job satisfaction is an attitude that is affected by duties, organization, and personal characteristics, it should be followed frequently with studies on job satisfaction. In addition, it can be said that there is a need for studies to determine the direct and indirect effects of the emotions they reflect on school administrators and their ways of doing business as educational leaders on the outputs of schools and school stakeholders. Despite all these limitations, the effect of emotions on job satisfaction with this study contributes to a deeper understanding of school, leadership, and organizational behavior literature.

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GENİŞLETİLMİŞ TÜRKÇE ÖZET

OKULLARDA POKER YÜZE BYE BYE:

OKUL YÖNETİCİLERİ DUYGULARININ İŞ DOYUMLARI İLE İLİŞKİSİ

GİRİŞ, ARAŞTIRMA PROBLEMİ VE AMAÇ

Duygular, örgütlerde geniş çapta benimsenmiş ve uygulanmış (Winter, 2018) olsa da bu alanla ilgili özellikle eğitim örgütleri kapsamında literatürde teorik ve ampirik çalışmaların sayısının oldukça sınırlı olduğu söylenebilir (Yıldız vd., 2023). Okul yöneticilerinin duygularının sonuçlarıyla ilgili olarak, mevcut alanyazının doğrudan duygulardan ziyade diğer ilgili yönleri örneğin, duygusal emek stratejileri (Maxwell ve Riley, 2017), duygusal zekâ (Arar ve Oplatka, 2018; Chen ve Guo, 2020; Erkol, 2021; Kandaz, 2018; Oplatka, 2017) ve duygusal düzenleme (Arar, 2017) gibi nasıl etkilediğini araştırma eğilimindedir. Ayrıca alanyazında öğretmenlerin iş doyumlarına yönelik çalışmaların oldukça fazla olduğu buna karşın okul yöneticilerinin iş doyumlarına yönelik çalışmaların ise nispeten sınırlı olduğu görülmektedir (Dude, 2012; Liu ve Bellibaş, 2018). Bu nedenle bu çalışma ile alanyazındaki bu boşlukları doldurmak amaçlanmaktadır. Bu bilgilerden yola çıkarak bu araştırmanın problem durumu okul yöneticilerinin okullarına ve görevlerine yönelik keyif, gurur, hayal kırıklığı, umutsuzluk ve kaygı duygularının iş doyumlarını ne düzeyde yordadığını belirlemektir. Bu doğrultuda çalışmada aşağıdaki alt problemlere yanıt aranmaktadır:

1. Okul yöneticilerinin keyif, gurur, hayal kırıklığı, umutsuzluk ve kaygı duyguları ve iş doyumları ne düzeydedir?
2. Okul yöneticilerinin keyif, gurur, hayal kırıklığı, umutsuzluk ve kaygı duyguları ve iş doyumları çeşitli değişkenlere göre (cinsiyet, görev ve kademe) anlamlı bir farklılık göstermekte midir?
3. Okul yöneticilerinin keyif, gurur, hayal kırıklığı, umutsuzluk ve kaygı duyguları iş doyumlarını anlamlı olarak yordamakta mıdır?

LİTERATÜR TARAMASI

Okul liderlerinin işi duygusal olarak yoğundur ve işlerinin yoğun doğası, yöneticilerin sağlığı ve esenliği ve kendi kişisel ilişkileri üzerinde doğrudan sonuçlara sahiptir (Heffernan vd., 2022). Diğer bir ifadeyle bu durum okul liderlerinin psikososyal ve fizyolojik sağlığını ve karşılıklı olarak iş performansını ve iş doyumunu etkilemektedir (De Nobile ve McCormick, 2010; Maxwell ve Riley, 2017). Bu nedenle, okul liderlerinin duyguları ve duygusal yetenekleri, bir okulu ileriye götürmenin kilit yönlerinden biri haline gelmektedir (Chen ve Guo, 2020; Chen ve Walker, 2021). Paralel olarak son yıllarda eğitim araştırmalarında da “duygusal dönüş” görülmektedir (Zembylas, 2021).

Duygular eğitimcilerin hayatlarını ve işlerini etkileyen önemli bir değişken olmasına karşılık okul yöneticileri ve öğretmenlerin duyguları tam olarak tanımlanmamıştır (Chen ve Walker, 2021). Okul yöneticiliğinin rasyonel ve teknik boyutunun vurgulanmasına karşılık okul liderliği rolünün duygusal tarafı göz ardı edilmiştir (Crawford, 2018). Okul yöneticilerinin duygularının keşfi hem liderliğin duygusal unsurlarının keşfedilmesini, aynı zamanda okul yöneticilerinin duyguları ve örgütsel diğer davranışlarını çözümlmeyi ve sonuçların dikkate alınmasını sağlamaktadır (Chen, 2020). Bush (2018) okul yöneticilerinin duygularının okul başarısı açısından ihmal edilen bir boyutu olduğunu ve okul yöneticilerinin duygusal liderler olmaları gerektiğini dile getirmektedir. Crawford (2018) özellikle liderlik ilkelerinin, liderliğin duygusal boyutunun çok önemli olduğu anlayışı üzerine kurulması gerektiğini ileri sürmektedir.

YÖNTEM

Bu araştırmada nicel araştırma yöntemlerinden nedensel karşılaştırma ve ilişkisel tarama modeli kullanılmıştır. Araştırmada seçkisiz olmayan örnekleme yöntemlerinden uygun örnekleme yöntemi kullanılmıştır. Araştırma kapsamında 307 okul yöneticisine ulaşılmıştır. Okul yöneticilerinin 70'i kadın (%22.8); 237'si (%77.2) erkektir.

Araştırmanın verileri “Okul Yöneticileri Duygu Envanteri” ve “İş Doyumu Ölçeği” kullanılarak toplanmıştır. Verilerin analizinde betimsel ve kanıtlamasal istatistik teknikleri kullanılmıştır. Araştırma verilerinin toplanmasında çevrimiçi ortamda ilgili veri toplama araçları ile bir form oluşturulmuştur. Bu form ile araştırmacı tarafından okul yöneticilerine veri toplama araçları uygulanmıştır. Nihai olarak verilerin toplanması 2022 bahar döneminde tamamlanmıştır. Verilerin analizinde SPSS 22 programı kullanılmıştır. Okul yöneticilerinin duyguları ve iş doyumuna ilişkin algılarını belirlemek için betimleyici istatistiksel analizlerden (frekans, yüzde, ortalama vb.) yararlanılmıştır. Okul yöneticilerinin duyguları ve iş doyumuna ilişkin puanların bağımsız değişkenlere (cinsiyet, görev ve kademe) göre anlamlı farklılaşma gösterip göstermediği parametrik testlerle (bağımsız örneklem t testi ve tek yönlü varyans analizi [ANOVA]) ile analiz edilmiştir. Değişkenler eşit aralık ölçeğinde ve sürekli olduğundan değişkenler arasındaki korelasyon incelemeleri Pearson Moment Korelasyonu (Basit Doğrusal Korelasyon) analizi ile yapılmıştır. Keyif, gurur, hayal kırıklığı, umutsuzluk ve kaygı duygularının iş doyumunu ne derece yordadığını belirlemek için ise eş zamanlı-standart çoklu regresyon analizi kullanılmıştır.

TARTIŞMA

Araştırmada okul yöneticilerinin görevleriyle ilgili keyif, gurur, hayal kırıklığı, umutsuzluk ve kaygı duyguları ile iş doyumları arasındaki ilişki incelenmiştir. Buna göre keyif orta ve pozitif; kaygı zayıf ve pozitif; gurur ve umutsuzluk ise negatif ve zayıf düzeyde iş doyumunu ile ilişkilidir. Hayal kırıklığı ile iş doyumunu arasındaki ilişki ise anlamlı değildir. Bu durum hayal kırıklığı ve umutsuzluk duyguları arasındaki ilişkiden kaynaklı olabilir. Benzer olarak Chen (2020) tarafından Çinli okul

yöneticileriyle gerçekleştirilen çalışmada da hayal kırıklığı duygusunun iş doyumunu ile ilişkisi anlamlı çıkmamıştır. Araştırmada negatif bir duygu olan kaygı duygusunun iş doyumunu ile pozitif bir ilişkiye sahip olması diğer bir deyişle kaygının artması ile iş doyumunun artması dikkat çekicidir. Ayrıca okul yöneticilerinin keyif, umutsuzluk ve kaygı duygularının iş doyumlarındaki değişkenliğin anlamlı bir yordayıcısı olduğu sonucuna ulaşılmıştır. Gurur duygusu keyif duygusu ile ilişkili olduğundan okul yöneticilerinin iş doyumlarını yordamamış olabilir. Mevcut araştırma ile okul yöneticilerinin iş doyumlarının artırılmasında görevlerine yönelik duygularının önemi ortaya çıkmıştır.

SONUÇ

Araştırmada şu sonuçlara ulaşılmıştır: *i)* Okul yöneticilerinin görevleriyle ilgili keyif ve gurur duyguları ile iş doyum düzeyleri yüksektir. *ii)* Okul yöneticilerinin cinsiyetleri, görevleri ve görev yaptıkları kademeleri ve iş doyum puanları arasında anlamlı bir fark yoktur. *iii)* Kadın okul yöneticilerinin görevleriyle ilgili gurur duyguları erkek okul yöneticilerinden daha fazladır. *iv)* Müdürlerin görevleriyle ilgili kaygı duygularının düzeyi müdür yardımcılarında yüksektir. *v)* Keyif, kaygı ve umutsuzluk duyguları okul yöneticilerinin iş doyumlarındaki değişkenliğin anlamlı bir yordayıcısıdır.

Bu araştırmaya göre görevlerine ve okullarına yönelik hissettikleri duygular okul yöneticilerinin iş doyumlarında etkilidir. Bu çalışma ile uzun yıllardır yönetim anlayışında hâkim olan örgütlerde duygulara yer olmadığı ve bu sebeple yöneticilerin yönetim süreçlerinde duygusuzluğunu ve ifadesizliğini temsil etmek için kullanılan “poker surat”ın diğer örgütlerde olduğu gibi okullarda da geçerliğini yitirdiğine dikkat çekilmek istenmiştir. Buna göre okulu yönetmekten keyif alan ve yöneticilikleri ve okullarıyla ilgili başarı kaygısı yaşayan okul yöneticilerinin iş doyumları anlamlı olarak artmaktadır. Ayrıca yöneticilikleri sırasında özellikle dış kaynaklı yaşadıkları umutsuzluk duygusu okul yöneticilerinin iş doyumlarını ve görevlerine yönelik memnuniyetlerini olumsuz etkilemektedir. Dahası okul yöneticilerinin bu duyguları yaşıyor olması yöneticiliği benimsediklerini okullarının başarısını önemsediklerini göstermesi açısından da değerlendirilebilir.

PHILOSOPHICAL FOUNDATIONS OF COMMUNICATIONAL TURKISH TEACHING

Yunus Emre ÇEKİCİ¹

Geliş Tarihi/Received: 05.04.2023 Elektronik Yayın/Online Published:20.06.2023

DOI: 10.48166/ejaes.1277437

ABSTRACT

Language functions, which are the central concept of communicative Turkish teaching today, constitute one of the main fields of study of language philosophy. Language functions have attracted the interest and curiosity of humanity since Ancient Greece; many philosophers sought answers to questions such as “What does language do?”, “For what purpose does man use language?”. Ancient Greek philosophers, enlightenmentaalist, Humboldt, logical positivists, Wittgenstein, Austin, Searle and postmodern philosophers stand out among those who explain their thoughts on language functions. The views of these philosophers in the history of philosophy are remarkable in terms of forming a theoretical basis for communicative Turkish teaching. In this context, in order to understand and evaluate the objectives, possibilities and limitations of communicative Turkish teaching, it is necessary to identify and discuss the views of major philosophers on the functions of language. Tracing the use of language in the history of philosophy is important in terms of revealing the philosophical foundations of communicative Turkish teaching. In this compilation study, it is aimed to discuss the philosophical foundations of communicative Turkish teaching. In the study, the views of Ancient Greek philosophers, enlightenmentaalist, Humboldt, logical positivists, Wittgenstein, Austin, Searle and postmodern philosophers who discussed the functions of language were examined in a comparative way and interpreted in the context of functional/communicative Turkish teaching. Thus, it is aimed to draw attention to the natural connection between teaching Turkish and philosophy of language. In the study, it was commented that the theories developed by Wittgenstein, Austin and Searle are important in terms of communicative Turkish teaching.

Keywords: Functional language teaching; communicative language teaching; Turkish teaching; teaching Turkish as a foreign language; language functions.

¹Öğr. Gör. Dr., Adana Alparslan Türkeş Bilim ve Teknoloji Üniversitesi Türk Dili Bölümü, ycekekici@atu.edu.tr, ORCID: 0000-0003-0247-3779

İLETİŞİMSEL TÜRKÇE ÖĞRETİMİNİN FELSEFİ TEMELLERİ

ÖZET

Günümüzde iletişimsel Türkçe öğretiminin merkezî kavramı olan dil işlevleri, dil felsefesinin de temel uğraş alanlarından birini oluşturmaktadır. Dil işlevleri Antik Yunan'dan beri insanlığın ilgi ve merakını çekmiş; birçok düşünür, "Dil ne işe yarar?", "İnsan dili hangi amaçla kullanır?" gibi sorulara yanıt aramıştır. Dil işlevlerine yönelik düşüncelerini açıklayanlar arasında Antik Yunan filozofları, Aydınlanma filozofları, Humboldt, mantıkçi pozitivistler, Wittgenstein, Austin, Searle ve postmodern düşünürler ön plana çıkmaktadır. Felsefe tarihindeki bu düşünürlerin görüşleri, iletişimsel Türkçe öğretimine kuramsal bir dayanak oluşturması bakımından dikkate değerdir. Bu bağlamda iletişimsel Türkçe öğretiminin hedeflerini, olanaklarını ve sınırlılıklarını anlayabilmek ve değerlendirebilmek için, belli başlı düşünürlerin dilin işlevlerine yönelik görüşlerini belirlemek ve tartışmak gerekmektedir. Felsefe tarihinde dilin ne işe yaradığının izini sürmek, iletişimsel Türkçe öğretiminin felsefi temellerini ortaya koymak açısından önem taşımaktadır. Derleme niteliğindeki bu çalışmada, iletişimsel Türkçe öğretiminin felsefi temellerini tartışmaya sunmak amaçlanmıştır. Çalışmada dilin işlevlerini ele alan Antik Yunan filozofları, aydınlanma filozofları, Humboldt, mantıkçi pozitivistler, Wittgenstein, Austin, Searle ve postmodern düşünürlerin görüşleri karşılaştırmalı bir biçimde incelenmiş ve işlevsel/iletişimsel Türkçe öğretimi bağlamında yorumlanmıştır. Böylece Türkçe öğretimi ile dil felsefesi arasındaki doğal bağa dikkat çekmek amaçlanmıştır. Çalışmada Wittgenstein, Austin ve Searle'ün geliştirdiği kuramların iletişimsel Türkçe öğretimi açısından önemli olduğu yorumu yapılmıştır.

Anahtar Kelimeler: İşlevsel dil öğretimi; iletişimsel dil öğretimi; Türkçe öğretimi; yabancı dil olarak Türkçe öğretimi; dil işlevleri.

1. INTRODUCTION

"What kind of language teaching?" question, among other questions and problems makes it necessary to seek an answer to the "What is language and what does it do?" question. What the language is or what kind of meaning is attributed to the language also determines how the teaching should be. Because every teaching approach, implicitly or explicitly, views "language" from one aspect and highlights a feature of "language". In the teaching process, the mentioned feature of the language is taken into the center. For example, focusing on the pure structure of the language and defining the language as a formal system bring grammar to the center in language teaching. In this context, it is clear that philosophical discussions about what language is and what it does cannot be considered independent of language teaching. The discussions in the philosophy of language have the potential to improve language teaching, and the developments in language teaching have the potential to improve the philosophy of language. When the historical process is examined, it is seen that the theoretical debates in the field of philosophy of language directly affect language teaching and that it is the source of the emergence of new methods and approaches from a theoretical perspective. As a result, many different methods and approaches have emerged in the history of foreign language teaching, also with the influence of the discussions in the philosophy of language. Today, it is stated in various studies (Yavuz & Şimşek, 2008; Çekici, 2021) that the communicative approach is the dominant model in foreign language teaching. In this context, it is useful to mention two main orientations that shape the history of foreign language teaching.

When the history of foreign language teaching from past to present is examined, it is possible to talk about the existence of two opposing models that center the structure and use of language. Göçen (2020, p. 24) states that traditional approaches focus on the structure of the language and prioritize grammar rules, translation and memorization in teaching; today, terms such as "communication", "interaction", "task" become prominent. This approach, which is dominant today and focused on the use of language, is conceptualized as the "communicative approach" in the literature. Communicative approach emerged as a reaction to approaches that offer the student an artificial, rote-based, limited language learning. It has enabled language to be accepted as a functioning system which is functional, living, constantly varying in context, changing, influenced by many variables such as the speaking subject, the intention of the speaking subject, the receiver, the intention of the receiver, not as a stack of grammatical structures functioning with certain rules that are strict and old fashioned (Sönmez, 2021, p. 39-40). Similarly, Deniz, Öztürk and Çekici (2021) stated that the purpose of foreign language teaching is no longer to teach students grammar rules, to have them memorize words or to have them translated; and it is essential to give learners the ability to understand and use language in coordination based on daily life. "In other words, the communicative approach has brought foreign language teaching closer to real life by trying to respond to the social needs of learners." (Deniz, Öztürk and Çekici, 2021, p. 349). As inferred from this claim, in the communicative approach, it is aimed that students use language in a contextual and functional way, that is, they communicate and socialize.

The Common European Framework of Reference for Languages is one of the main reference sources for foreign language teaching in Europe. The Common European Framework of Reference for Languages focuses on developing students' communicative competence in accordance with the communicative model. In this text, a function, communication and action-oriented foreign language teaching approach is based on real-life situations; the focus is on tasks and language functions based on needs analysis and real-life communication situations, rather than a linear curriculum through predetermined language structures (CEFR, 2020, p. 28). The basic concept of this approach, which aims to enable students to use a foreign language effectively, is "language functions". The communicative approach argues that a teaching based on "language functions" should be adopted in foreign language teaching. Yaylı and Yaylı (2014, pp. 16-17) state that language does not only consist of structures and emphasize that grammar is taught together with language functions in the communicative approach. Therefore, it is possible to evaluate communicative language teaching as "foreign language teaching based on language functions".

Language functions, one of the basic concepts of linguistics and language teaching literature, briefly defined as the purpose of using language (Blundell, Higgins & Middlemiss, 1982: v; Cook, 1985, p. 177; Demircan, 2005, p. 232; Deniz & Çekici, 2019, p. 3047; Deniz & Çekici, 2019c, p. 33; Deniz & Demir, 2021, p. 25; Kılıç, 2007, p. 131). Language functions, which are also considered as social use of language (Schaeffer, 1982, p. 289) and communicative use of language (Deniz and Demir, 2019, p. 905), are at the center of communicative language teaching. People communicate by asking questions, giving answers, thanking, requesting, giving orders, in short, using language functions. For this reason, it is possible to say that using language functions and understanding are on the basis of communication skills.

It is stated that foreign language teaching focused on language functions will improve students' sociolinguistic and pragmatic skills (Deniz & Çekici, 2019, p. 25), and increase students' expression alternatives (Kinsella, 2010). It is also stated that people socialize by using language functions in appropriate contexts or they have to use language functions in appropriate contexts to socialize (Deniz and Çekici, 2021, p. 3). In short, foreign language teaching focused on language functions not only claims to respond to the student's need to communicate in the target language, but also adds vitality to grammar teaching. In this direction, it is seen that "language functions" have become centralized in the field of teaching Turkish as a foreign language in recent years.

Language functions have started to play an important role in the programs developed in recent years in the field of teaching Turkish as a foreign language (Turkish Maarif Foundation, 2020a, 2020b; Yunus Emre Institute, 2018). In these programs, the framework of Turkish teaching focused on language functions was drawn, and it was emphasized how students would use language functions. From this point of view, various academic studies have been conducted that examine the textbooks used in teaching Turkish as a foreign language in the context of language functions (Cerit, 2021; Deniz & Çekici, 2019). Various studies are also carried out in the field of functional grammar teaching (Benzer, 2021). In addition, lists of language functions that can be used in teaching Turkish as a foreign language have been developed (Çekici, 2021; Deniz & Çekici, 2021). These programs and studies pave the way for the centralization of language functions in teaching Turkish as a foreign language day by day.

Language functions, which are the central concept of communicative Turkish teaching today, constitute one of the main fields of study of language philosophy. "Language functions" have attracted the interest and curiosity of humanity since Ancient Greece; many philosophers sought answers to questions such as, "What does language do?", "For what purpose does man use language?". Ancient Greek philosophers, enlightenmentists, Humboldt, logical positivists, Wittgenstein, Austin, Searle and postmodern philosophers stand out among those who explain their thoughts on language functions. The views of these philosophers in the history of philosophy constitute a theoretical basis for communicative Turkish teaching. In this context, in order to understand and evaluate the objectives, possibilities and limitations of communicative Turkish teaching, it is necessary to identify and discuss the views of major philosophers on the functions of language. Tracing the use of language in the history of philosophy is important in terms of revealing the philosophical foundations of communicative Turkish teaching.

In this compilation study, it is aimed to discuss the philosophical foundations of communicative Turkish teaching. In the study, the views of Ancient Greek philosophers, enlightenmentists, Humboldt, logical positivists, Wittgenstein, Austin, Searle and postmodern philosophers within the scope of language functions were examined comparatively and interpreted in the context of functional/communicative Turkish teaching. Thus, it is aimed to draw attention to the natural connection between teaching Turkish and philosophy of language. The study is expected to strengthen the philosophical and theoretical foundations of teaching Turkish as a foreign language focused on language functions.

2. EARLY VIEWS ON THE FUNCTIONS OF LANGUAGE

Ancient Greek philosophers, who pondered on many issues that concern human beings, also put forward important views on language and its functions. Although it has not been dealt with in a systematic way as it is today, the first views on the functions of language in the history of thought are encountered in Ancient Greece. In this period, the views of Socrates, Plato and Aristotle on language and its functions formed the basis for future philosophical discussions.

"The Republic" is one of the most important works of the ancient Greek period. In the dialogue type book called "The Republic" (Plato, 2014, pp. 65-66), which is one of the main reference sources of political philosophy, the influence function of language is emphasized. In this work, the potential of language to affect people is underlined, especially through fairy tales in the process of raising children. In the book, it is stated that fairy tales that affect children badly should be banned. Therefore, it can be said that "The Republic" is one of the first works emphasizing the influencing function of language.

Another important work that should be emphasized in the context of "functions of language" in the Ancient Greek period is "Cratylus" (Plato, 2000). In this book, in the type of dialogue where Socrates talks with Hermegones and Cratylus, the problem of "correctness of names", one of the main fields of philosophy of language, is discussed. Whether there is a relationship between names and what they mean is discussed in detail in this book. In the book, it is stated that language has two basic functions: informing and separating concepts by giving names (Platon, 2000, p. 17). The function of language to conceptualize and separate concepts from each other is one of the main emphasis of "Cratylus".

Another philosopher who was interested in the functions of language in this period is Aristotle. Aristotle, in his book "Politics", defines mankind as a political animal and talks about the political and informative function of language. According to Aristotle, mankind differs from animals by making politics through language. According to Aristotle, language also carries the function of informing what is beneficial and harmful, right and wrong (Aristotle, 1975, pp. 9-10). Emphasizing that people can make politics and inform others through language, Aristotle also focuses on the functions of convincing, persuading and proving in his book "Rhetoric" (Aristotle, 2013). Aristotle also underlines the aesthetic/poetic function of language in his book "Poetics" (Aristotle, 1993).

As can be seen, language has been one of the important topics of discussion in Ancient Greece. In this period, the question of what the language does is at the basis of the thoughts and discussions about language. This ancient question also occupied Ancient Greek philosophers; philosophers talked about the functions of language influencing, informing, conceptualizing, separating concepts, making policy, proving and aestheticizing. It is possible to say that these determinations about the nature of language still maintain their validity. These determinations of ancient Greek philosophers also formed a basis for later philosophers. In the history of thought, another period in which comprehensive views on language and its functions were put forward after the Ancient Greek period is the Enlightenment period.

3. ENLIGHTENMENTALISTS: LANGUAGE INFORMS

The Enlightenment is the name of the period that describes the developments in intellectual, scientific and political life in Europe during the 18th century. The main feature of this period can be summarized as making the mind work; gaining importance of religious tolerance, science, national languages and understanding of the national state (Özdemir, 2008a, p. 63). Enlightenment is expressed as a period that critically questions the authority passed from father to son, traditional religious thoughts, dogmas and the privilege of political power (Özdemir, 2008b, p. 47). As it is seen, in the Enlightenment period, national languages, that is, the language used by the people, are important and it is suggested that the people can be conscious thanks to the language.

According to the enlightenmentists, language is a tool that obliges the transmission of thoughts from one individual to another (Altuğ, 2008, p. 60). In other words, the enlightenmentists underline the descriptive and transferring function of language. Because language (telling and understanding) is needed in order to raise awareness of the public and to enable them to think independently and critically before the authorities. According to the enlightenmentists, language has an effective function in informing, enlightening and educating the public. The philosophers of the enlightenment think that it is possible to get rid of the darkness of the Middle Ages only through language.

One of the important representatives of the enlightenment period is John Locke. Arguing that language has a direct relationship with thought, Locke underlines the informative and communicative function of language. In fact, he states that misuse of language will lead to communication problems (Locke, 2013, p. 339). According to Locke, language has three basic functions: (i) to convey our thoughts or ideas to others, (ii) to realize this as clearly and fluently as possible (iii) to convey the knowledge of things to the mind (Altınörs, 2009, p. 18). As can be seen, Locke emphasizes the intellectual and communicative function of language; focuses on the role of language in the human mind.

Leibniz, another representative of the Enlightenment philosophy, draws attention to the reciprocal relationship between language and thought and emphasizes that language has the function of making thoughts understandable and providing knowledge of objects (Özdemir, 1996, pp. 34-35). According to Leibniz (1996, p. 333), language is the mirror of the human mind. With the metaphor of the mirror, Leibniz highlights the function of language to describe and convey thoughts. This view of Leibniz is similar to that of other enlightenmentists.

According to Hobbes, who considers language as a noble and useful invention, people can record, transfer and teach thoughts, remember their past thoughts, and exchange thoughts thanks to language. According to Hobbes, another function of language is to please oneself and others through metaphorical expressions. Hobbes also states that language is a tool that makes society, state and peace possible (Hobbes, 2012, pp. 34-35-36). As can be seen, Hobbes underlines its informative function, but also clarifies the role of language in social reconciliation. According to Hobbes, the tool that holds people together is language.

According to another philosopher of the period, George Berkeley, language does not only have an informative or descriptive function, but also has other purposes such as arousing a certain passion, directing

an action or deterring it, and putting the spirit in a certain order (Berkeley, 1998, p. p. 30). Underlining the influence function of language, Berkeley, in a sense, continues Aristotle's views. Berkeley realizes a new opening in the enlightenment period by emphasizing the emotive and impressive function of language.

As it can be understood from the views summarized above, it was thought that language was an educational tool in the Enlightenment period, had the function of conveying thoughts, and thus had an important role in raising awareness and educating large masses of people. In addition, language has also been defined as the possibility of social peace. These views on the functions of language coincide with the main arguments of the Enlightenment period. According to the enlightenmentists, people need to be informed through language in order to get rid of the state of immaturity they have fallen into (Kant, 1984, p. 213).

4. NATIONAL AND CULTURAL FUNCTION OF LANGUAGE BY HUMBOLDT

Another important name, after the Enlightenmentists, who made important determinations about the functions of language is the statesman and philosopher Wilhelm von Humboldt. Humboldt (1767-1835), who seems to have mastered the language debates before him, stands out as the "first philosopher to examine language in relation to culture" (Akarsu, 1998, p. 7). Humboldt underlines the cultural function of language. According to him, the cultural function of language manifests itself in the character of nations or their view of the world. Humboldt's view that nations' view of the world (*weltansicht*) cannot be separated from their language (Aksan, 2007, p. 21), which ensures that the cultural function of language is kept at the forefront in subsequent research. It can even be said that Humboldt's views have brought a cultural perspective to linguistics and language education.

Besides its cultural function, Humboldt also frequently emphasizes the dialectical function of language. Humboldt's emphasis that "Language is not a product (*ergon*) but an activity (*energeia*)" (Akarsu, 1998, p. 21) highlights the continuous creative function of language (Altuğ, 2008, p. 68). In addition to this, the views that everything said prepares the ground for what is not said, and that people who are affected by language also affect language (Humboldt, 1988), state that language does not only reflect the facts; it also reveals that it has a productive and creative function.

In short, according to Humboldt, language not only serves to express feelings and thoughts, but also forms the basis of the expression of new feelings and thoughts; constitute the source of communication and acculturation. According to Humboldt, language is located on the ground of cultural inventions and encounters. It can be said that Humboldt came to the fore in philosophy of language by emphasizing the dialectical continuity of language.

5. LOGICAL POSITIVISTS: LANGUAGE DESCRIBES FACTS

In the history of philosophy, after Humboldt, logical positivists, also called the Vienna Circle, draw attention with their thoughts on language and its functions. Since it is generally influenced by the thoughts of Frege and Russell, it is useful to briefly touch upon Frege and Russell's thoughts on language before moving on to the views of the Logical positivists.

Gottlob Frege, a German logician, mathematician, and philosopher, states that there is a distinction between the meaning of a sentence and its referent. In addition, according to Frege, the main function of language is to refer to an object situation in the outside world (Altınörs, 2000, p. 34). The English philosopher and logician Bertrand Russell, on the other hand, develops an ideal language assumption in the form that sentences exactly overlap with the things that exist in the outside world. According to him, sentences -apart from psychological descriptions- are the designs of the phenomena in the outside world and the meaning of a sentence is the phenomenon it refers to (Altınörs, 2003, p.119). As it is clearly, both philosophers underlined the descriptive function of language. In addition, this approach defends the idea that sentences that do not have a directly observable referent in the outside world should be considered meaningless. These views also formed an important basis for the thoughts of logical positivists.

Fed by the views of Frege and Russell; logical positivists, who are known for the thoughts of philosophers such as Carnap, Ayer and Reinbach, claim that language has the function of describing facts in general (Çelebi, 2016). Accordingly, the main function of language is to describe the existing ones and to convey these descriptions to other people. In fact, logical positivists conclude that sentences that do not have a concrete counterpart in the outside world are meaningless (Çelebi, 2016). It is known that these thoughts about language form the basis of positivism in the philosophy of science. However, logical positivists have been heavily criticized for ignoring other functions such as influencing, affecting and socializing, while highlighting one of the basic functions of language, description.

6. FUNCTIONS OF LANGUAGE ACCORDING TO WITTGENSTEIN

Within the scope of language functions, it can be said that Ludwig Wittgenstein's views are quite interesting. Because Wittgenstein proposed two diametrically contrary approaches to language. Wittgenstein's views in terms of language functions in his first term are called "Picture Theory", and his views in his second term are called "Language Games Theory".

Wittgenstein's book "Tractatus Logico-Philosophicus" (2013) reflects the philosopher's first period. Emphasizing that objects can be named and phenomena can be described in this book, Wittgenstein (2013, pp. 31-33) treats language as the sum of sentences (Wittgenstein, 2013, p. 45). In this book, Wittgenstein mentions that language generally has the function of depicting the world. According to this theory, which is also called "Picture Theory", the primary function of language is to paint facts (Altınörs, 2000, p. 65). Picture Theory bears a great deal of resemblance to the logical positivists' approach to reducing their use of language to the description of observable phenomena. With this theory, Wittgenstein ignored everyday language, context, communication and interpersonal relations, and treated language as a purely observable positivist phenomenon by equating it with a sentence.

Wittgenstein's (2010) book "Philosophical Investigations" reflects his second period. Emphasizing the use of everyday language in the book in question, the philosopher explains language functions with the metaphor of a toolbox. The more diverse the functions of the tools in a toolbox, the more diverse the functions of words (Wittgenstein, 2010, p. 27). The philosopher, who states that language is a part of an activity or a way of life with the phrase "language game" (Wittgenstein, 2010, p. 32), argues that the equivalent of a word

can only be revealed by its use in the language (Wittgenstein, 2010, p. 41). In other words, using language is an action that has rules and is flexible, like playing a game. For this reason, it is necessary to examine the use of language in order to understand the functions of language. With these views, Wittgenstein differs from the logical positivists by centralizing the communication process and context in his second period. Wittgenstein also tried to clarify the communicative dimension of language, the linguistic conventions in social life.

In addition to Wittgenstein's "Language Games Theory", Austin and Searle's "Speech Act Theory" has an important place in the history of thought because it offers a systematic approach to the functions of language.

7. SPEECH ACT THEORY: FUNCTIONS OF LANGUAGE ACCORDING TO AUSTIN AND SEARLE

Austin (2017) deals with the functions of language with a holistic approach in his book "How to Do Things with Words", which is the source of speech-act theory. According to Austin (2017), who underlines the action potential of language in his book, philosophers have long thought that language only has the function of describing a situation or reporting a phenomenon. Opposing this classical approach, Austin emphasized that the descriptive function is only one of the functions of language. According to Austin, by speaking, a person does not only describe, but also performs an action. Austin tries to classify what people do at the same time using language. In this context, Austin highlights five different functions of language: (1) specifiers, (2) determinants of power, (3) determinants of responsibility, (4) specifiers of behavior, (5) expositors (Austin, 2017, p. 162). As can be seen, Austin criticizes the logical positivists and tries to classify these functions by stating that language has different functions. In addition, Austin's emphasis that human performs an action by using language is also quite remarkable.

One of the philosophers who contributed to the development of Speech Act Theory is Austin's student Searle. Searle argues in his book "Speech Acts" that using a language is synonymous with a behavior or, in other words, performing a function. But this is not random, functional language use works according to certain rules. Therefore, learning a language means internalizing and using the functional rules of that language (Searle, 2000, p. 83). Searle (2011) in his book "Expressions and Meanings" evaluates language functions as part of the general language, not individual languages. Searle emphasized that the classification of language functions should not be reduced to lists of verbs; it means that verbs are unlimited and functions are definable. Noting some of the deficiencies in Austin's work, Searle developed a new taxonomy of language functions. Searle argues that language has five types of functions: (1) predicates, (2) directives, (3) charge-offers, (4) expressors, (5) statements (Searle, 2011).

To summarize, with the speech act theory developed by Austin and Searle, it was clarified that language also means an action, and the functions of language were tried to be classified systematically for the first time in the history of thought.

8. POSTMODERNISM: SLIPPERINESS/ AMBIGUITY OF LANGUAGE, MEANING AND FUNCTION

Intellectual and social changes are often expressed with various concepts in social sciences. The concept of “postmodernism” also refers to the pessimistic, complex and ambiguous environment of thought that emerged after modernism. In this context, it is necessary to briefly mention the content of the concept of postmodernism. Since the 19th century, humanity has witnessed a great transformation. Research in the sciences enabled the development of technology, and with the progress of industrialization, migration from the village to the city intensified. The development of industry has fueled the struggle for sharing between countries; the search for colonies intensified, and these problems brought with them two great world wars. The two great world wars that have been left behind have caused great destruction in every sense, and humanity's belief and trust in the concepts of the modern world has weakened. Reason and science, the source of trust for humanity, could not prevent great wars; on the contrary, it has been the greatest weapon of these wars. This destruction has led to the targeting of concepts that are thought to be absolutely positive in the modern age. Now, reason, science developed through reason, and all values that people trust are under attack (Şaylan, 2020). Examining the characteristics of this age with his book titled “Postmodern Situation”, Lyotard said that postmodernism means disbelief against metanarratives; expresses that great heroes, great adventures and great goals are left behind (Lyotard, 2013, p. 8). In other words, postmodernism reflects a critical attitude to most values defended by modernism.

In the postmodern era, disbelief in metanarratives leads to the devaluation of all kinds of values, which results in unprincipled or groundless. This ambiguity also arises in the question of what language does. Altuğ (2008, p. 235), who defines postmodernism as a large-scale process of meaning destruction; He argues that in the postmodern world language, meaning and function become groundless/slippery.

The most destructive criticism of postmodern discourse is directed towards reason, which is one of the most important concepts of the modern age. So much so that books such as “Mind Eclipse” (Horkheimer, 2016) and “Farewell to Mind” (Feyerabend, 2012) reflect two different approaches to this mental critique. In connection with this critique of reason, Derrida also argues that language, meaning and thus function are slippery. Based on the idea that the language we use is ambiguous, Derrida thinks that, above all, there is a "language" problem at the root of all the problems experienced in the world today (Fırıncı Orman, 2015, p. 63). According to Derrida, language causes the ambiguity of reality. This situation leads to more than one understanding and absolute agreement becomes impossible (Derrida, 2009).

In short, postmodern philosophers focus on the function of making thoughts ambiguous, not the descriptive function of language. According to postmodern philosophers, language is an inadequate tool to convey thoughts. In this respect, it is clear that postmoderns do not coincide with the views of especially logical positivists.

9. CONCLUSION

Communicative Turkish teaching includes the preparations and activities carried out to provide students with the functions of the language, to understand these functions and to use them in appropriate

contexts. Therefore, communicative Turkish teaching focuses on the functions of language. The functions of the language constitute one of the most ancient problems of the philosophy of language. In this study, the views of major philosophers in the history of philosophy are summarized in order to clarify the philosophical foundations of communicative Turkish teaching. Since communicative Turkish teaching mainly focuses on teaching the functions of language, it is focused on the history of philosophy and "What does language do?" question has been traced. In this context, firstly, the views on language functions in the Ancient Greek period and the enlightenment period were discussed and summarized. Then, the views of Humboldt, logical positivists, Wittgenstein, Austin and Searle, and finally postmodern philosophers within the scope of language functions are discussed. The views of the philosophers discussed in the study are shown in Table 1 in summary form.

Table 1. Views on Functions of Language in The History of Philosophy

Philosopher	Function of the Language
Socrates	Affecting
Plato	Informing and classifying
Aristoteles	Informing, doing politics, convincing, proving, aestheticising
John Locke	Thinking, acknowledging and communicating
Thomas Hobbes	Recording thoughts, conveying, teaching; recalling, exchanging opinions and making peace
Gottfried Wilhelm Leibniz	Thinking, making thoughts clear, providing information of objects
George Berkeley	Arousing passion and affecting
Wilhelm von Humboldt	Socializing, nationalizing, creativity, productivity and communication
Gottlob Frege	Making reference
Bertrand Russel	Making reference
Vienna Philosophers (Carnap, Ayer, Reinbach)	Describing
Ludwig Wittgenstein	Describing (depicting) and playing games (communicating)
J. L. Austin	Making judgments, expressing power, giving responsibility, expressing behaviour, exposition
John Searle	Determining, instructing, giving responsibility, manifesting, declaring
Jacques Derrida	Obscuring facts

As a result of this study, it is seen that "the view that language does not only have a descriptive function, but that description is only one of the functions of language" emphasized in the speech act theory,

constitutes an important theoretical basis for communicative Turkish teaching. In communicative Turkish teaching, the functions of language are taught as a skill and it is aimed to improve students' communication skills. In the background of this approach, it is understood that the theory of language games developed by Wittgenstein and the theory of speech action developed by Austin and Searle. It is possible to say that these theories constitute an intellectual ground for lists of language functions that started to be developed after the 1970s. In addition, the theory of language games is compatible with the "action-oriented" in communicative Turkish teaching.

Logical positivists limit the functions of language to "description". Traditional language teaching is mostly based on the descriptive function of the language and reduces language teaching to grammar teaching. In communicative Turkish teaching, it is underlined that other functions of the language should also be taught. In addition, the cultural function of the language underlined by Humboldt stands out as one of the key concepts of communicative Turkish teaching. The influencing function of language, which has been insistently emphasized since Socrates, is also included in communicative Turkish teaching. However, the views of postmodern philosophers deserve a separate discussion. The claim that language obscures thoughts should be evaluated in the context of teaching Turkish.

As a result, it can be said that discussing the resources, possibilities, functions and limitations of the language will contribute to the clarification of the objectives of communicative Turkish teaching. In this context, there is a need for studies that are fed from the philosophy of language in the Turkish teaching literature.

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GENİŞLETİLMİŞ TÜRKÇE ÖZET

İLETİŞİMSEL TÜRKÇE ÖĞRETİMİNİN FELSEFİ TEMELLERİ

GİRİŞ

“Nasıl bir dil öğretimi?” sorusu, diğer soru ve sorunların yanında “Dil nedir ve ne işe yarar?” sorusuna da yanıt aramayı zorunlu kılmaktadır. Dilin ne olduğu veya dile nasıl bir anlam yüklendiği, öğretimin nasıl olması gerektiğini de belirlemektedir. Çünkü her öğretim yaklaşımı, örtük veya açık bir biçimde “dil”e bir yönden bakmakta, “dil”in bir özelliğini ön plana çıkarmaktadır. Öğretim sürecinde de dilin söz konusu özelliği merkeze alınmaktadır. Söz gelimi dilin salt yapısına odaklanılması ve dilin biçimsel bir sistem olarak tanımlanması, dil öğretiminde de dil bilgisinin merkeze alınmasını beraberinde getirmektedir. Bu bağlamda dilin ne olduğu ve ne işe yaradığına ilişkin felsefi tartışmaların dil öğretiminden bağımsız düşünülmesiyle açıklıktır. Zira dil felsefesindeki tartışmalar dil öğretimini, dil öğretimindeki gelişmeler de dil felsefesini geliştirme gizilgücüne sahiptir. Tarihsel süreç incelendiğinde, dil felsefesi alanındaki kuramsal tartışmaların dil öğretimini dolaysız bir biçimde etkilediği, yeni yöntem ve yaklaşımların doğuşuna kuramsal açıdan kaynaklık ettiği de görülmektedir. Günümüz yabancı dil öğretimine egemen olan iletişimsel yaklaşımın ve bu yaklaşımın temel kavramlarından dil işlevlerinin de dil felsefesi alanındaki açıklama ve kuramlarla bağlantılı olduğu düşünülmektedir.

Günümüzde iletişimsel Türkçe öğretiminin merkezi kavramı olan dil işlevleri, dil felsefesinin de temel uğraş alanlarından birini oluşturmaktadır. “Dil işlevleri” Antik Yunan’dan beri insanlığın ilgi ve merakını çekmiş; birçok düşünür, “Dil ne işe yarar?”, “İnsan dili hangi amaçla kullanır?” gibi sorulara yanıt aramıştır. Dil işlevlerine yönelik düşüncelerini açıklayanlar arasında Antik Yunan filozofları, Aydınlanma filozofları, Humboldt, mantıkçı pozitivistler, Wittgenstein, Austin, Searle ve postmodern düşünürler ön plana çıkmaktadır. Felsefe tarihindeki bu düşünürlerin görüşleri, iletişimsel Türkçe öğretimine kuramsal bir dayanak oluşturmaktadır. Bu bağlamda iletişimsel Türkçe öğretiminin hedeflerini, olanaklarını ve sınırlılıklarını anlayabilmek ve değerlendirebilmek için, belli başlı düşünürlerin dilin işlevlerine yönelik görüşlerini belirlemek ve tartışmak gerekmektedir. Felsefe tarihinde dilin ne işe yaradığının izini sürmek, iletişimsel Türkçe öğretiminin felsefi temellerini ortaya koymak açısından önem taşımaktadır. Bu bağlamda çalışmanın amacı, iletişimsel Türkçe öğretiminin felsefi dayanaklarını belirlemek, özetlemek ve tartışmaya sunmaktır.

YÖNTEM

Derleme niteliğindeki bu çalışmada, iletişimsel Türkçe öğretiminin felsefi temellerini tartışmaya sunmak amaçlanmıştır. Çalışmada Antik Yunan filozofları, Aydınlanma filozofları, Humboldt, mantıkçı pozitivistler, Wittgenstein, Austin, Searle ve postmodern düşünürlerin dil işlevleri kapsamındaki görüşleri karşılaştırmalı bir biçimde incelenmiş ve işlevsel/iletişimsel Türkçe öğretimi bağlamında yorumlanmıştır.

Böylece Türkçe öğretimi ile dil felsefesi arasındaki doğal bağa dikkat çekmek amaçlanmıştır. Çalışmanın, dil işlevleri odaklı yabancı dil olarak Türkçe öğretiminin felsefi ve kuramsal temellerini güçlendirmesi beklenmektedir.

SONUÇ

İletişimsel Türkçe öğretimi, öğrencilere dilin işlevlerini kazandırmak, bu işlevleri anlamalarını ve uygun bağlamlarda kullanmalarını sağlamak için gerçekleştirilen hazırlık ve etkinlikleri kapsamaktadır. Bu nedenle iletişimsel Türkçe öğretimi, dilin işlevlerine odaklanmaktadır. Dilin nasıl işlevler taşıdığı ise dil felsefesinin en kadim sorunlarından birini oluşturmaktadır. Bu çalışmada iletişimsel Türkçe öğretiminin felsefi temelleri belirginleştirmek için felsefe tarihindeki belli başlı düşünürlerin görüşleri özetlenmiştir. İletişimsel Türkçe öğretimi, temelde dilin işlevlerini öğretmeye odaklandığı için felsefe tarihine mercek tutularak “Dil ne işe yarar?” sorusunun izi sürülmüştür. Bu kapsamda öncelikle Antik Yunan döneminde ve aydınlanma döneminde dil işlevlerine yönelik görüşler ele alınmış ve özetlenmiştir. Ardından Humboldt’un, mantıkçı pozitivistlerin, Wittgenstein’in, Austin ve Searle’ün, son olarak da postmodern düşünürlerin dil işlevleri kapsamındaki görüşleri tartışmaya sunulmuştur. Çalışmada ele alınan düşünürlerin görüşleri, özet hâlinde Tablo 1’de sunulmaktadır.

Tablo 1. Felsefe Tarihinde Dil İşlevlerine Yönelik Görüşler

Düşünür	Dilin İşlevi
Sokrates	Etkileme
Platon	Bilgilendirme ve sınıflandırma
Aristoteles	Bilgilendirme, politika yapma, inandırma, kanıtlama, estetikleştirme
John Locke	Düşünme, bilgilenme ve iletişim kurma
Thomas Hobbes	Düşünceleri kaydetme, aktarma, öğretme; hatırlama; düşünce alışverişinde bulunma ve barışı sağlama
Gottfried Wilhelm Leibniz	Düşünme, düşünceleri anlaşılır kılma, nesnelerin bilgisini sağlama
George Berkeley	Tutku uyandırma ve etkileme
Wilhelm von Humboldt	Toplumsallaşma, uluslaşma, yaratıcılık, üreticilik ve iletişim
Gottlob Frege	Gönderimde bulunma
Bertrand Russel	Gönderimde bulunma
Viyana Çevresi (Carnap, Ayer, Reinbach)	Betitleme

Ludwig Wittgenstein	Betimleme (resmetme) ve oyun oynama (iletişim kurma)
J. L. Austin	Hüküm belirtme, erk belirtme, sorumluluk yükleme, davranış belirtme, serimleme
John Searle	Kesinleme, yöneltme, sorumluluk yükleme, dışavurma, beyan etme
Jacques Derrida	Gerçekleri belirsizleştirme

Bu çalışmanın sonucunda söz eylem kuramında vurgulanan “dilin sadece betimleme işlevi taşımadığı, betimlemenin dilin işlevlerinden sadece biri olduğu görüşü”nün iletişimsel Türkçe öğretimine önemli bir kuramsal dayanak oluşturduğu görülmektedir. İletişimsel Türkçe öğretiminde dilin taşıdığı işlevler bir beceri olarak öğretilmekte, öğrencilerin iletişim becerisini geliştirmek amaçlanmaktadır. Bu yaklaşımın arka planında ise Wittgenstein’in geliştirdiği dil oyunları kuramı ile Austin ve Searle’ün geliştirdiği söz eylem kuramının bulunduğu anlaşılmaktadır. Öyle ki bu kuramların, 1970’lerden sonra geliştirilmeye başlanan dil işlevleri listeleri için düşünsel bir zemin oluşturduğunu söylemek olanaklıdır. Ayrıca dil oyunları kuramı, iletişimsel Türkçe öğretimindeki “eylem odaklılık” ile de bağdaşmaktadır.

Mantıkçı pozitivistler dilin işlevlerini “betimleme” ile sınırlandırmaktadır. Geleneksel dil öğretimi, daha çok dilin betimleme işlevini temel almakta ve dil öğretimini dil bilgisi öğretimine indirgemektedir. İletişimsel Türkçe öğretiminde ise dilin taşıdığı diğer işlevlerin de öğretilmesi gerektiğinin altı çizilmektedir. Ayrıca Humboldt’un altını çizdiği dilin kültürel işlevi de iletişimsel Türkçe öğretiminin anahtar kavramlarından biri olarak ön plana çıkmaktadır. Sokrates’ten bu yana ısrarla vurgulanan dilin etkileme işlevine de iletişimsel Türkçe öğretiminde yer verilmektedir. Bununla birlikte postmodern düşünürlerin görüşleri ayrı bir tartışmayı hak etmektedir. Dilin düşünceleri belirsizleştirdiği iddiası, Türkçe öğretimi bağlamında değerlendirilmelidir.

Sonuç olarak dilin kaynak, olanak, işlev ve sınırlılıklarının tartışılmasının iletişimsel Türkçe öğretiminin hedeflerinin belirginleştirilmesine katkı sunacağı söylenebilir. Bu bağlamda Türkçe öğretimi alan yazınında dil felsefesinden beslenen araştırmalara gereksinim duyulmaktadır.

**DEVELOPING THE READING COMPREHENSION SKILLS
OF A STUDENT WITH A SPECIFIC LEARNING DISABILITY THROUGH
THE PREDICT-ORGANIZE-SEARCH-SUMMARIZE- EVALUATE (POSSE)
READING COMPREHENSION STRATEGY¹**

Beyhan KAŞDEMİR²

Olca ÖZDEMİR³

Geliş Tarihi/Received: 23.04.2023 Elektronik Yayın/Online Published:20.06.2023

DOI: 10.48166/ejaes.1286630

ABSTRACT

This study aims to investigate the effectiveness of the Predict-Organize-Search-Summarize-Evaluate (POSSE) reading comprehension strategy in developing the reading comprehension skills of a fourth grader diagnosed with learning difficulty. It was conducted with a student who had learning and reading comprehension difficulties in a primary school in the Western Black Sea region. The data for the study were collected in action research design. They were collected from narrative texts used in primary school grade 1, 2, 3 and 4 Turkish course textbooks, materials and activities designed in accordance with the Prediction-Examination-Summation Organization-Evaluation (POSSE) strategy, using schematic organizers and audio-video recordings. The reading level of the student was determined with a pretest using narrative texts in the 1st grade Turkish textbook. Following the 36-hour pilot trial in which 12 narrative texts were used, 59 main implementations extending over 165 hours were carried out with 40 narrative texts from grade 2, 3 and 4 Turkish textbooks. In the final stage, a posttest was carried out using the narrative texts in grade 2, 3 and 4 Turkish textbooks. The data collected in the study were analyzed with the help of the wrong analysis inventory by Haris and Sipay (1990), Ekwall and Shanker (1988) and May (1986), which had been adapted to Turkish by Akyol (2016). The results suggested that the student's reading and reading comprehension levels increased from the level of frustration to the level of independent reading, showing that the Prediction-Examination-Summary Organizing-Evaluation (POSSE) reading comprehension strategy was effective in improving the reading comprehension skills of the student with learning difficulty.

¹This study was derived from the first author's master's thesis prepared under the supervision of the second writer.

²Special Education Teacher, MEB, Şehit Madencilik İlkokulu, Zonguldak, Türkiye, e-mail: beyhist@gmail.com, ORCID:0000-0003-0357-3157

³PhD, Lecturer, Zonguldak Bülent Ecevit University, Ereğli Education Faculty, Department of Basic Education, Division of Elementary Education, Zonguldak, Türkiye, e-mail: olcay67@gmail.com, ORCID: 0000-0002-0846-9546

Keywords: Learning difficulty; reading difficulty; reading comprehension difficulty; story map; Prediction-Examination-Summary Organizing-Evaluation (POSSE) reading comprehension strategy

ÖZEL ÖĞRENME GÜÇLÜĞÜ YAŞAYAN BİR ÖĞRENCİNİN OKUDUĞUNU ANLAMA BECERİLERİNİN TAHMİN-İNCELEME-ÖZETLEME ÖRGÜTLEME- DEĞERLENDİRME (TİÖD) OKUDUĞUNU ANLAMA STRATEJİSİ YOLUYLA GELİŞTİRİLMESİ

ÖZET

Bu çalışmanın amacı, Tahmin-İnceleme-Özetleme-Örgütleme-Değerlendirme (TİÖD) okuduğunu anlama stratejisinin öğrenme güçlüğü tanısı almış bir ilkokul dördüncü sınıf öğrencisinin okuduğunu anlama becerisini geliştirmedeki etkisini incelemektir. Çalışma Batı Karadeniz bölgesinde bir ilköğretim okulunda öğrenme ve okuduğunu anlama güçlüğü yaşayan bir öğrenci ile gerçekleştirilmiştir. Araştırmanın verileri eylem araştırması deseninde ilkokul 1, 2, 3 ve 4. sınıf Türkçe dersi ders kitaplarındaki öyküleyici metinler, Tahmin-İnceleme-Özetleme-Örgütleme-Değerlendirme (TİÖD) stratejisine uygun olarak tasarlanmış etkinlikler, materyaller ve şematik düzenleyiciler ile ses ve görüntü kayıtları aracılığıyla toplanmıştır. 1. sınıf Türkçe ders kitabında yer alan öyküleyici metinler kullanılarak yapılan ön test ile öğrencinin okuma düzeyi belirlenmiştir. 12 öyküleyici metnin kullanıldığı 36 saatlik pilot denemenin ardından 2., 3. ve 4. sınıf Türkçe ders kitaplarından 40 öyküleyici metinle 165 saat 59 asıl uygulama gerçekleştirilmiştir. Son aşamada ise 2, 3 ve 4. sınıf Türkçe ders kitaplarında yer alan öyküleyici metinler kullanılarak son test yapılmıştır. Araştırmada toplanan veriler, Akyol (2014) tarafından Türkçeye uyarlanan Haris ve Sipay (1990), Ekwall ve Shanker (1988) ve May (1986) tarafından hazırlanan yanlış analiz envanteri yardımıyla analiz edilmiştir. Sonuçlar, öğrencilerin okuduğunu anlama ve okuduğunu anlama düzeylerinin kaygı düzeyinden bağımsız okuma düzeyine yükseldiğini, Tahmin-İnceleme-Özetleme-Örgütleme-Değerlendirme (TİÖD) okuduğunu anlama stratejisinin öğrenme güçlüğü çeken öğrencilerin okuduğunu anlama becerilerini geliştirmede etkili olduğunu göstermektedir.

Anahtar Kelimeler: Öğrenme güçlüğü; okuma güçlüğü; okuduğunu anlama güçlüğü; hikâye haritası; Tahmin-İnceleme-Özetleme-Örgütleme-Değerlendirme (tiöd) okuduğunu anlama stratejisi

1. INTRODUCTION

In today's world, teachers have a great responsibility in raising individuals who can access information; take responsibility for their own learning; learn how to learn, communicate and cooperate; and in short, have lifelong learning skills (Kaya Tosun, 2018). In order to achieve all these goals, the first step to be taken by schools is to teach reading and reading comprehension skills. Akyol (2016) argues that teaching the skills of reading and making meaning out of it is included in education programs and the teaching process as the greatest contribution to making one's life meaningful. Efforts to develop reading and reading comprehension skills largely take place in Turkish courses (Yıldırım, 2010). When the Turkish course curriculum is examined, it can be seen that the focus among the learning domains of grade 1 is on the objectives related to learning how to read; while until the end of grade 4, the focus is on skills such as fluent reading, reading comprehension, enacting what is read, understanding the text as a whole in stages, understanding the relationship between visuals and text and parts of the text,

making sense of words in the meaning they intend, distinguishing text types, and perceiving how and with what evidence the text supports its subject (MEB, 2019). Among these skills, reading, and reading comprehension are fundamental ones that students will use throughout their lives and that can have a positive impact on their academic success by providing them with knowledge. The development of these skills is of great importance not only for Turkish language teaching but also for other subjects. This is because students with poor reading and reading comprehension skills will also have low academic success in other fields. Therefore, it is necessary to develop students' reading and reading comprehension skills (Sidekli and Çetin, 2017).

Reading is the process of making sense of written symbols seen by the eye. Humans make sense of their lives with the help of reading, which is why it is a fundamental skill for the acquisition of other academic skills. In other words, it should be perceived as the mother of all academic skills (Özdemir and Baş, 2019). The reading skill is a two-way skill that involves the decoding of written symbols (phonics) and giving meaning to them. For reading comprehension, the reader must assign meaning to words that are correctly pronounced (Güzel, 1999).

As reading depends on both word recognition and reading comprehension skills, word recognition is essential to achieve reading. Word recognition is the skill of combining sounds correctly in accordance with alphabetical rules, recognizing words correctly, and reading them accurately. There is a strong relationship between word recognition, knowing the meaning of words, fast and fluent reading, and reading comprehension. Vocabulary affects students' reading and reading comprehension skills directly as a student with a large vocabulary recognizes and understands words, perceives their meaning when used in different situations, understands words that have similar meanings, and grasps the meaning of a text (Akyol and Şahin, 2019). Ateş (2011) found in a study on vocabulary that vocabulary knowledge and instruction are not only effective in reading comprehension but also in general academic achievement. Considering that inadequate vocabulary can lead to school failure and affect the entire academic experience, it is evident that improving students' vocabulary should be a part of reading training. This is because having a broad vocabulary is a prerequisite for both successful reading instruction and becoming a well-educated individual (Kasten and Yıldırım, 2013).

Just as we strive to teach reading comprehension skills to students in general education classrooms who do not experience learning or reading difficulty, we should naturally also strive to teach them to students in special education classes or to those who are in inclusive education classrooms. This is because the largest group among individuals with special needs is comprised of individuals with special learning difficulties (Ulutaş et al., 2020). According to Silliman and Scott (2006), the most common problem observed in students with special learning difficulties is in the area of reading. For students with reading difficulties, education on word recognition and practice is needed. Students with reading difficulties should be taught to read words one by one and that words are made up of sound units. In this way, students will gain automaticity and fluency in word recognition and allot their

cognitive resources to understand what they have read (Mastropieri and Scruggs, 2016). Therefore, practices with word recognition strategies are needed for students with reading difficulties. As Samuels (1979) points out, automaticity and accuracy of word recognition and the expression of a text in a fluent and natural tone of voice will contribute to better understanding through one's cognitive resources, while inadequacy in word recognition will make the process of making meaning from a text more difficult. The expected performance in fluent reading is for it to be similar to speaking. This is a skill that facilitates meaning making for both the listener and the reader (Keskin, 2012). Fluent reading has been defined by Padak and Rasinski (2008) as reading a text correctly and at an appropriate speed, in a meaningful and effective way. It has been described as a bridge between word recognition and reading comprehension. Rasinski (2003) refers to three dimensions of fluent reading: automatically analyzing the word, reading the word correctly, and prosodic reading (intonation, emphasis, and pitch). Fluent reading is one of the basic components of understanding what is being read; however, the process of reading comprehension also requires the reader to make connections between the units of information in a text and their own knowledge and experiences, to organize and construct them mentally. They must also make inferences about the text by analyzing, synthesizing, interpreting, and evaluating. It may therefore be seen that reading comprehension involves many other upper-level cognitive skills.

Similar to difficulties with word recognition and decoding, students may also have problems with not having prerequisite skills, deficient vocabulary, not knowing word meanings, inadequate knowledge of text structure in narrative and informative texts, difficulty in determining and organizing strategies, excessive reliance on others during the reading process, difficulty in self-monitoring performance, inability to retain what is read and understood in memory for a long period, inability to generalize learned concepts, and inability to exhibit positive behavior when faced with a difficult task. All of these factors negatively affect the reading comprehension skills of students with learning difficulties (William, 2014). Students with special learning disabilities have difficulty in reading comprehension due to factors related to the reader and the text. It is observed that students with special learning disabilities have problems in comprehending and recalling details in a text, interpreting the information provided in it, and making inferences from this information. The difficulty in connecting the information in the text to students' experiences makes comprehension even more difficult. In order for students with special learning difficulties to understand what they read, they must have reached a certain level in both reader-related and text-related factors. Otherwise, they have difficulty understanding a text, fail to make connections among multiple texts, and have reduced reading motivation. The reading comprehension skills that students with learning difficulties can acquire through reading are limited and difficult (Güzel, 1999). Therefore, the teaching methods used should be able to attract students' attention, motivate them to participate in class, and encourage them to read. It is essential that a desired level of reading and reading comprehension skills is achieved in primary school years.

Teachers should identify the areas where students with special learning difficulties have problems and teach reading and comprehension strategies. Learning strategies can be used before, during, or after reading (Güzel Özmen, 2016). In order for the student to understand what they read effectively and to benefit from what they read, they need to use reading comprehension strategies correctly and appropriately. Teaching reading comprehension strategies to students in a scientific flow will increase their level of reading comprehension (Epçaçan, 2018). A good reader scans the text before reading, makes predictions about what the text is about and has a reading purpose. By ensuring a certain order of cognitive processing with the use of reading comprehension strategies, higher levels of understanding can be achieved (Epçaçan, 2008).

Strategies that develop reading comprehension may be gathered under four subheadings (Daly III et al., 2005):

Table1. Strategies to Develop Reading Comprehension

Pre-reading strategies	While-reading strategies	Post-reading strategies	Strategies for the entire reading process
Explaining Goal for Reading	Fluent and Continued Reading	Summarizing All Genres	Strategic Note-taking
Helping the Student Predict the Topic by Looking at the Title, Date of Publication, Author and by Scanning	Considering the Story Map for Narrative Texts	Using the Question-Answer Relationship	Survey, Question, Read, Reflect (SQ4R)
Title- Examine- Look at Keywords- Look Back at the Text-Story /Concept Map (TELLS)	Using Outlines and Study Guides for Expository Reading Texts		Answering without Looking, Reconsidering
Pre-instruction Vocabulary	Using strategic Note-Taking for Descriptive Texts		Multiple Transitions Strategy
Pre-teaching Concepts with Concept Maps and Story Maps	Using Timetables and Flowcharts for Explanatory Texts		Mutual Teaching Know - Want to Know - Learn (K-W-L)
	Making Complex Plans, Tables		Cooperative Strategic Reading Concept Maps and Graphic Organizers
	Using Visuals for Narrative Texts		Reading Comprehension Strategy (TS)
			POSSE Reading Comprehension Strategy

(as cited in Epçaçan, 2009).

Even though the academic literature includes many studies on students with specific learning difficulties, there are not enough studies on the use of multi-component cognitive strategies to improve the reading comprehension skills of students with learning difficulties. In this study, it is aimed to

determine the effectiveness of the POSSE (Predict-Organize-Search-Summarize-Evalute) reading comprehension strategy, which is a multi-component cognitive strategy aimed at improving reading comprehension skills, on an elementary school 4th grade student with special learning difficulties, by planning the teaching process according to the student's characteristics and abilities and by using activities that are suitable for the steps of the POSSE reading comprehension strategy to help the student become an independent reader and improve their reading comprehension skills. This study included instruction considering the characteristics and abilities of the special student selected, and used activities in accordance with the stages of the POSSE reading comprehension strategy to improve this student's reading comprehension and make them an increasingly independent reader. It aimed to determine the effectiveness of the POSSE reading comprehension strategy on the development of the reading comprehension skills of students with special learning difficulties and on the transfer of these skills into texts of a different nature and subject in the same genre. The following questions were addressed in this study in order to determine the effectiveness of the multi-component POSSE reading comprehension strategy in improving the reading comprehension level of a 4th grader with special learning difficulties who was enrolled in a full-time inclusion program:

After instruction enriched with the POSSE reading comprehension strategy for a full-time 4th grader with learning and reading comprehension difficulties in inclusive education, what is the student's:

- a) Word recognition level?
- b) Reading comprehension level?
- c) Reading level?

2. METHOD

2.1. Study Model

This is a qualitative action research study. Bogdan and Biklen (2003) define action research as the systematic acquisition and compilation of necessary information in a social area where change and development are required, and provision of development. It is a cyclical process that involves a critical approach to professional competencies, the making of necessary adjustments and changes, sharing this change and development with others, and ongoing feedback. In the field of education, action research is used as a research model to address problems at schools whereby practitioners may examine their own practices to solve specific problems, educators and researchers may conduct research to improve the quality of practices and results obtained in schools, and educators may critically review their educational practices and develop solutions to their problems based on these criticisms. Action research empowers teachers with active participation, enables students to learn better through improved instructional activities, and thus brings social change. It also provides education practitioners with a

professional perspective. When used appropriately, action research is a beneficial model for teachers, students, the instructional process, and society in general (Başarı, 2019).

2.2. Study Group

The researcher, who works as a teacher in a primary school located in a Western Black Sea city, obtained information about the students at her school through colleagues, observed the students, made a diagnosis of special learning difficulty after the observation process, and decided to study a specific fourth-grade student in full-time inclusive education who was experiencing difficulties in reading and reading comprehension. After obtaining the necessary permissions from the student's family and the Ministry of Education, the family was informed about the study schedule, the location where the study would be conducted, and the strategies that would be used in the study process. The family was then referred to a health institution to determine if the student had any physical problems with sight or hearing. It was reported at the hospital that the student had no physical problems but 20% learning difficulty. After necessary arrangements for the study process, the researcher initiated the study. The name of the student and the primary school are referred to as 'a student' and 'a primary school' in the study, in accordance with ethical reasons and the principle of confidentiality in special education. Born in a Western Black Sea city in November 2008, the student was studying at fourth grade in a primary school in the same region, experiencing specific learning difficulties in reading and reading comprehension, and receiving full-time inclusive education. The student was living with their parents in a rented house in a city in the Western Black Sea region, with no designated study room. The student's mother was literate and a housewife, while the father was a primary school graduate working as a laborer in the construction sector. The sole income of the family was the father's daily wages from construction. The family's socioeconomic status was low, and their attitude towards reading and learning was not very positive. The student did not receive support for their education from their family and had to manage their studies on their own outside of school, without access to necessary educational tools, materials, or resources. Due to difficulties in reading and reading comprehension, the student also had lower academic achievement in other subjects compared to other peers. The student made the mistakes of incorrect reading, addition, omission, and repetition during oral reading. Due to a lack of sufficient word recognition skills, the student could not read fluently, which resulted in pronunciation and reading comprehension difficulties. They needed support when answering both surface-level and in-depth comprehension questions and could not answer the questions independently.

2.3. Data Collection Tools

The following tools were used in the study during different stages of the data collection process.

2.3.1. Illustrated Narrative Texts

In the current study, where the POSSE reading comprehension strategy was used, illustrated narrative texts were selected with the help of expert opinions from Turkish language textbooks approved by the Ministry of National Education's Board of Education. A total of 59 illustrated narrative texts were used in the pre-implementation, pilot trial, main implementation, and post-implementation stages for grades 1, 2, 3, and 4 of primary school. In the pre-implementation stage, a fourth-grade student who had been diagnosed with learning difficulties and was receiving full-time inclusive education and had reading and reading comprehension difficulties had their reading level determined by using a total of 4 illustrated narrative texts, one from each grade level (4th to 1st grades) by using the error analysis inventory, which continued from the student's current grade level to their best reading level. In the piloting period of the methods, techniques, activities, and materials to be used in the study, which was planned in accordance with the student's reading level determined in the pre-implementation stage, 12 illustrated narrative texts were selected from Grade 1 Turkish language course book. In the main implementation process, which started with necessary adjustments upon the data obtained from the pilot trial, a total of 40 illustrated narrative texts selected from the 2nd, 3rd, and 4th grade Turkish language course books were used, 20 at the 2nd grade level, 10 at the 3rd grade level, and 10 at the 4th grade level. In the final stage of the study, which involved evaluation, 3 illustrated narrative texts each from 2nd, 3rd and 4th grade levels were used to determine the student's final reading level. No text was needed from Grade 1 as the student was not a poor reader in this grade level based on the findings obtained from the study.

During the evaluation stage, the student evaluated their understanding of the text by comparing their predictions with the summary they created based on their prior knowledge and new information, by writing and answering questions about unclear parts when summarizing, and by explaining their predictions, interpretations, and ideas (Coşgun Başar, 2019, Epçaçan, 2009). The researcher assisted the student in the final stage of the strategy, the evaluation stage, as the student compared their pre-reading predictions about the topic, characters, plot, setting, problem and solutions in the story with the ideas they obtained after reading. The student then evaluated the accuracy of their predictions by using the letters "A" and "I" in the relevant section of the comparison chart prepared by the researcher for the evaluation stage.

2.3.2. Error Analysis Inventory

Through the Error Analysis Inventory, individuals' reading levels are determined by analyzing their errors in word recognition and reading comprehension, and identifying word recognition and reading comprehension percentages. The Error Analysis Inventory can be used to evaluate students' reading levels in terms of word recognition and reading comprehension, and to plan and develop individual reading instruction programs (Ateş, 2011). The student's word recognition level and percentage were determined by checking the oral reading errors made during the last reading practice

with Akyol's (2016) table of oral reading errors. The student's reading comprehension level was determined via the implementation and error analysis of a total of 10 reading comprehension questions, six of which were surface-level and four of which were in-depth, suitable for the cognitive processes required by the questions prepared by the researcher and finalized with expert opinions. Questions that measured mere information recall whose answers were located directly in a word, sentence, or paragraph in the text were considered surface-level comprehension questions, while questions with indirect or implied answers that required the use of cognitive strategies such as analysis, synthesis, evaluation, or the association of information in the text with existing information were called in-depth comprehension questions (Başaran, 2019:307-308). The data obtained from the reading comprehension questions were evaluated using the Error Analysis Inventory adapted by Akyol (2016) from Haris and Sipay (1990), Ekwall and Shanker (1988), and May (1986). The inventory has three reading levels:

- Independent Level: This is the level at which the student is an independent reader. The student does not need the help of a teacher or adult and is able to read and comprehend materials that are appropriate for their level.
- Instructional level: This level signifies that the student is able to read and understand with the help of a teacher or adult. The student requires assistance to reach the desired level of reading and comprehension.
- Frustration Level: This level indicates that the student makes a lot of reading errors and understands very little or none of the material they read. The student is a weak reader and constantly needs the help of a teacher or adult to read and understand (Akyol, 2016).

2.3.3. Activities in Line with the POSSE Reading Comprehension Strategy and Its Stages

In the first stage of the strategy, which is predicting, schematic organizers were used. Schematic organizers are visual materials that take various forms and are used for different purposes in reading and reading comprehension instruction. They make the concepts and relationships between them concrete by visualizing them. Students use schematic organizers to recognize the connections by seeing the relationship between concepts and information (Özak, 2017). Schematic organizers enable separate elements to be seen as a whole in meaningful relationships through spatial arrangements, geometric shapes, arrows, and lines (Güzel Özmen, 2009). There are schematic organizers that show cause and effect relationships, comparisons or common elements, and highlight the structure of a given text (Özak, 2017).

In the review phase, the graphic organizer method of story mapping was used. Graphic organizers help students learn information, understand concepts, and comprehend what they read (Özdemir, 2019). Using the story mapping method, the student analyzed the story based on the scenes, main and supporting characters, problem introduction, problem, attempts to solve the problem, outcome, main idea, and reaction headings, and recorded their thoughts in the story map. In this way, the text was

analyzed according to the story mapping method. Story maps are important visual tools that present all the elements related to a story to the student in one place and draw their attention to the story elements. As the main headings related to the story are processed within a certain structure, within a whole framework, retention of information and better comprehension is ensured (Akyol, 2016). In addition to the story mapping method, character networks (character analysis schematic organizers) were also used in the review phase. Character networks/diagrams are schematic organizers that summarize the personal characteristics, emotions, or actions of a main or supporting character in a narrative text by placing their name in the center of the network. Character networks allow the student to make comments and interpretations about the character (Doğanay Bilgi, 2017). In the final part of the review phase, a timeline was used. The student was asked to write the events of the story in chronological order on the timeline. Timelines are tools that enable the student to visualize the sequence of events in the story. The student used the timeline while organizing the events of the story chronologically (Doğanay Bilgi, 2017). With the timeline, the student summarized the events in the story in a simple, sequential, relative, understandable, and memorable way, within a certain order (Güzel Özmen, 2009).

In the summarizing stage, the student was asked to fill in the blanks in the summary frame with words that satisfy sentence unity and fit the content of the text. The summary frame is a pre-designed summary text containing the main points of the text with some missing information. The student completes the missing information in the summary text after reading it. Summary frames can be applied during or after reading (Doğanay Bilgi, 2017). Considering the general framework of a text, the summary should include the important information in the text and emphasize the importance of the author's thoughts (Akyol, 2016). As summarizing is a mental meaning making process, the summary is a tool for students to reword the text in short and understandable expressions using their own words (Epçazan, 2018). In addition to the summary, the maze technique was also used. According to Fuchs & Fuchs (1992), maze (multiple-choice gap-filling) is a technique designed to assess the reading comprehension skills of elementary, middle, and high school students. In texts where this technique is applied, every fifth word is removed after the introductory sentence to create a gap, a list of three options is provided for each gap, and the student is asked to circle the correct one.

In the organizing stage, the student organizes their understanding of the text by creating figures, tables, or concept maps by using content information. In this stage, students are encouraged to ask and answer questions (Epçazan, 2009). They put together and organize the information related to the contents of the text (Coşgun Başar, 2019). In this stage in the study, the student created questions related to the texts with the help of the researcher. The student wrote the 5 questions that they prepared and their answers into the schema material prepared by the researcher for the organizing stage.

2.4. Data Analysis

The data in the study were collected through audio and video recordings after obtaining necessary permissions from the student's family and the Ministry of Education. The collected data (audio and video recordings) were analyzed with the help of three experts. The student's oral reading errors were evaluated based on the word recognition level table in the error analysis inventory to determine the student's word recognition percentage and level. The answers given by the student to surface-level and in-depth comprehension questions were evaluated based on the criteria in the error analysis inventory, and the sum was divided into the highest total score possible and then multiplied with 100 (reading comprehension total score/reading comprehension total score when all questions are answered correctly (24))*100) in order to find reading comprehension percentage and level. According to the error analysis inventory, the scoring of surface and in-depth reading comprehension questions is shown below (Akyol, 2016).

For surface level questions:

- For completely answered questions“ 2” points,
- For partially answered questions“ 1” points,
- For unanswered questions“ 0” points.

For in-depth comprehension questions:

- For completely and effectively answered questions“ 3” points,
- For somewhat deficient answers that provide more than half of the expected answer“ 2” points,
- For partially answered questions“ 1” point.

The student's reading level was determined by the level at which data from the word recognition and reading comprehension levels intersect in the "Reading and Comprehension Levels and Percentiles" table in the error analysis inventory.

3. FINDINGS

When the pre-implementation findings related to word recognition, reading comprehension, and reading levels of the student at Grade 1, 2, 3, and 4 levels are examined, it can be observed that the student's Grade 4 word recognition skills are at the frustration level with a value of 0.89, and so are the reading comprehension skills with a value of 0.45. According to these findings, the student's reading skills at Grade 4 is also at the frustration level. At the 3rd-grade level, the student's word recognition skills are at the frustration level with a value of 0.89, and their comprehension is also at the frustration level with a value of 0.19. Based on these findings, the student's reading skills at Grade 3 are at the frustration level. At Grade 2 level, the student's word recognition skills are at the instructional level

with a value of 0.91, and their comprehension skills are also at the instructional level with a value of 0.73. Based on these findings, the student's reading skills at Grade 2 are at the frustration level. At Grade 1 level, the student's word recognition skills are at the instructional level with a value of 0.93, and comprehension skills are at the instructional level with a value of 0.65. Based on these findings, the student's reading skills at Grade 1 is at the frustration level.

In the pilot trial, prior to implementing the strategy, methods and techniques, the post-reading word recognition level in 3 out of 12 texts was at the frustration level (0,89-0,90), and the remaining 9 at the instructional level (0,92-0,94-0,96-0,98). After implementing the strategy, methods and techniques, the post-reading word recognition level was at the instructional level in all 12 texts (0,94,-0,95-0,96-0,98) and no text induced the frustration level. Reading comprehension was at the instructional level in 8 texts (0,75-0,79-0,83-0,87), and at the independent level in 4 texts (0,91-0,95). According to these data, it can be stated that the student's reading skills at Grade 1 level was at the instructional level for 11 of the texts, and at independent level for one. Based on these findings, when the percentage values of word recognition levels are calculated, it appears that the pilot trial initial reading word recognition level was 0.93 and at the instructional level, while the final reading word recognition level was 0.96 and at the instructional level, and comprehension was 0.79 and still at the instructional level. Accordingly, when the average word recognition and comprehension levels are examined, the student's Grade 1 reading skills are at the instructional level. As it was found that the student's Grade 1 word recognition increased from 0,93 in prior to the pilot trial to 0,96, and their comprehension increased from 0,65 to 0,79 likewise, the methods used in the pilot trial were extended to the main implementation to be used with Grade 2, 3 and 4 texts.

In the main implementation at Grade 2 level, prior to implementing the strategy, methods and techniques, the student's post-reading word recognition in 11 out of 20 texts was at the frustration level (0,84-0,88-0,89-0,90) and in 9 texts at the instructional level (0,91-0,92-0,93-0,95). After implementing the strategy, methods and techniques, their post-reading word recognition was at the instructional level in 18 texts (0,91-0,93-0,94-0,95-0,96-0,97-0,98) and at the frustration level in 2 texts (0,84-0,90), and their reading comprehension was at the instructional level in 7 texts (0,87) and at the independent level in 13 (0,90-0,91-0,94-0,95-0,96-0,97-0,98). According to these findings, the student's reading level at Grade 2 was at the instructional level for 10 texts and at the independent level for 10 texts. Based on these findings, when the mean percentage values of word recognition levels are calculated, it can be seen that the initial reading word recognition level was 0.91 at the instructional level in the main implementation at Grade 2 level; the post-reading word recognition level was 0.95 at the instructional level, and the comprehension level was 0.93 also at the instructional level. Accordingly, when the average word recognition and comprehension levels are considered, it can be judged that the student's Grade 2 reading was at the independent level. It was observed that the student's word recognition which was at the instructional level with a value of 0.91 in the preliminary implementation at Grade 2 level

increased to 0.96 at the instructional level in the main study, and their comprehension which was at the instructional level with a value of 0.73 in the preliminary implementation at Grade 2 level increased to 0.93 at the independent level in the main study.

In the main implementation at Grade 3 level, prior to implementing the strategy, methods and techniques, the student's post-reading word recognition in all 10 texts was at the frustration level (0,77-0,78-0,81-0,83-0,84-0,85-0,86-0,87-0,89). After implementing the strategy, methods and techniques, their post-reading word recognition was at the frustration level in 6 texts (0,85-0,87-0,89-0,90) and at the instructional level in 4 (0,91-0,92-0,95-0,960), and their reading comprehension was at the instructional level in 1 text (0,87) and at the independent level in 9 texts (0,91-1,00). According to these findings, the student's reading level at Grade 3 was at the instructional level for 10 texts and at the independent level for the remaining 10 texts. Based on these findings, when the mean percentage values of word recognition levels are calculated, it can be seen that the initial reading word recognition level was 0.83 at the frustration level in the main implementation at Grade 3 level, and the post-reading word recognition level was 0.91 at the instructional level, while the comprehension level was 0.94 at the independent level. Accordingly, when the average word recognition and comprehension levels are considered, it can be argued that the student's Grade 3 reading was at the instructional level. It was observed that the student's word recognition which was at the frustration level with a value of 0.89 in the preliminary implementation at Grade 3 level increased to 0.95 at the instructional level in the main study, and their comprehension which was at the frustration level with a value of 0.19 in the preliminary implementation at Grade 3 level increased to 0.93 at the independent level in the main study.

In the main implementation at Grade 4 level, prior to implementing the strategy, methods and techniques, the student's post-reading word recognition in 9 out of 10 texts was at the frustration level (0,76-0,80-0,82-0,88-0,90) and at the instructional level in the remaining text (0,95). After implementing the strategy, methods and techniques, their post-reading word recognition was at the frustration level in 4 texts (0,88-0,89-0,90) and at the instructional level in 6 (0,92-0,93-0,94-0,96), and their reading comprehension was at the independent level in all texts (0,91-0,95-1,00). According to these findings, the student's reading level at Grade 4 was at the instructional level for 5 texts and at the independent level for the remaining 5 texts. Based on these findings, when the mean percentage values of word recognition levels are calculated, it can be seen that the initial reading word recognition level was 0.87 at the frustration level in the main implementation at Grade 4 level, and the post-reading word recognition level was 0.92 at the instructional level, while the comprehension level was 0.97 at the independent level. Accordingly, when the average word recognition and comprehension levels are considered, it can be seen that the student's Grade 4 reading was at the independent level. It was found that the student's word recognition which was at the frustration level with a value of 0.89 in the preliminary implementation at Grade 4 level increased to 0.92 at the instructional level in the main

study, and their comprehension which was at the frustration level with a value of 0.45 in the preliminary implementation at Grade 4 level increased to 0.97 at the independent level in the main study.

In the post-implementation, the student's word recognition with Grade 2 materials was 0,99 at the independent level and their reading comprehension was 1,00 also at the independent level, indicating an independent reading level with Grade 2 materials. At Grade 3 level, the student's word recognition level was 0,98 at the instructional level, and their reading comprehension was 1,00 at the independent level, indicating an independent reading level also with Grade 3 materials. With Grade 4 materials, the student's word recognition was 0,94 at the instructional level, and their reading comprehension was 1,00 at the independent level, indicating an independent reading level also with Grade 4 materials. Based on these findings, the student's Grade 2 word recognition level increased from 0,91 at the instructional level prior to the study increased to 0,99 or the independent level in the post-implementation after using the POSSE Reading Comprehension Strategy activities. With Grade 3 materials, the student's word recognition level increased from 0,89 at the frustration level to 0,98 or the instructional level in the post-implementation after using the POSSE Reading Comprehension Strategy activities. When Grade 4 materials are considered, the student's word recognition level increased from 0,89 at the frustration level to 0,94 at the instructional level in the post-implementation after using the POSSE Reading Comprehension Strategy activities. When it comes to comprehension levels for Grade 2, the student went from 0,73 at the instructional level to 1,00 at the independent level after the POSSE Reading Comprehension Strategy activities. With Grade 3 materials, the student's comprehension level increased from 0,19 at the frustration level in the pre-implementation stage to 1,00 at the independent level after the POSSE Reading Comprehension Strategy activities, and with Grade 4 materials, their score increased from 0,45 at the frustration level in the pre-implementation stage to 1,00 at the independent level after the POSSE Reading Comprehension Strategy activities.

4. RESULTS AND DISCUSSION

In the level determination stage of the pre-implementation conducted at Grade 1, 2, 3, and 4 levels with the 4th grade student in the study group, it was seen that their word recognition levels for the 1st and 2nd grades were 0.91 and 0.93, respectively, and their reading comprehension levels were determined to be 0.65 and 0.73, respectively, at the instructional level. The student's Grade 3 and 4 word recognition levels were 0,89, and their reading comprehension levels were 0,19 and 0,45, respectively, at the frustration level. The student's reading level at all grades was at the frustration level.

In the pilot study conducted with 12 narrative texts at Grade 1 level, it was found that the pre-strategy training word recognition level of the fourth-grade student in the study group was between 0.89-0.90 at the frustration level in 3 texts, and between 0.92-0.94-0.96-0.98 at the instructional level in 9 texts. After strategy training, the post-reading word recognition level ranged between 0.94-0.95-0.96-

0.98 at the instructional level in all 12 texts, and there was no frustration level with any text. When the mean word recognition values in the pre-and post-strategy training in the pilot implementation are examined, it was found that the student's word recognition level increased from 0.93 to 0.96 at the instructional level. When Grade 1 reading comprehension levels after the pre-implementation and strategy training are reviewed, it can be seen that the student's reading comprehension level increased from 0.65 to 0.79 at the instructional level. It was observed that the student's reading level, which was at the frustration level in Grade 1 during the pre-implementation stage, increased to the instructional level after strategy training. Based on these results obtained from the pilot trial with Grade 1 materials, it can be concluded that strategy training has a positive effect on word recognition, reading comprehension, and reading levels.

In the main study conducted with 20 narrative texts at Grade 2 level, the pre-strategy training post-reading word recognition level of the student in the study group ranged between 0,84-0,88-0,89-0,90 at the frustration level in 11 texts, and between 0,91-0,92-0,93-0,95 at the instructional level in 9 texts. After strategy training, post-reading word recognition level ranged between 0,84-0,90 at the frustration level in 2 texts, and between 0,91-0,93-0,94-0,95-0,96-0,97-0,98 at the instructional level in 18. After strategy training the number of texts where the student was at the frustration level in word recognition decreased from 11 to 2. In the main study conducted at Grade 2 level, the mean word recognition values before and after strategy training show that the student's word recognition level increased from 0.91 to 0.95 at the instructional level. When Grade 2 reading comprehension levels after the pre-implementation and strategy training are examined, it can be seen that the student's reading comprehension level increased from 0.65 at the instructional level to 0.93 at the independent level. It was observed that the student's reading level, which was at frustration level in Grade 2 during the pre-implementation stage, increased to the independent level after strategy training. Based on these results obtained after the main study, it can be concluded that strategy training has a positive effect on word recognition, reading comprehension, and reading at Grade 2 level.

In the main study conducted with 10 narrative texts at Grade 3 level, the pre-strategy training post-reading word recognition level of the student in the study group ranged between 0,77-0,78-0,81-0,83-0,84-0,85-0,86-0,87-0,89 at the frustration level in all 10 texts. After strategy training, post-reading word recognition level ranged between 0,85-0,87-0,89-0,90 still at the frustration level in 6 texts, and between 0,91-0,92-0,95-0,96 at the instructional level in 4. With strategy training the number of texts where the student was at the frustration level in word recognition decreased from 10 to 6. In the main study conducted at Grade 3 level, the mean word recognition values before and after strategy training show that the student's word recognition level increased from 0.83 at the frustration level to 0.91 at the instructional level. When Grade 3 reading comprehension levels after the pre-implementation and strategy training are examined, it can be seen that the student's reading comprehension level increased from 0.19 at the frustration level to 0.94 at the independent level. It was observed that the student's

reading level, which was at the frustration level in Grade 3 during the pre-implementation stage, increased to the independent level after strategy training. Based on these results obtained after the main study at Grade 3 level, it can be concluded that strategy training has a positive effect on word recognition, reading comprehension, and reading.

In the main study conducted with 10 narrative texts at Grade 4 level, the pre-strategy training post-reading word recognition level of the student in the study group ranged between 0,76-0,80-0,82-0,88-0,90 at the frustration level in 9 texts, while it was 0,95 at the instructional level in the remaining text. After strategy training, post-reading word recognition level ranged between 0,88-0,89-0,90 still at the frustration level in 4 texts, and between 0,92-0,93-0,94-0,96 at the instructional level in 6 texts. With strategy training the number of texts where the student was at the frustration level in word recognition decreased from 9 to 4. In the main study conducted at Grade 4 level, the mean word recognition values before and after strategy training show that the student's word recognition level increased from 0.89 at the frustration level to 0.92 at the instructional level. When Grade 4 reading comprehension levels after the pre-implementation and strategy training are examined, it can be seen that the student's reading comprehension level increased from 0.45 at the frustration level to 0.97 at the independent level. It was observed that the student's reading level, which was at frustration level in Grade 4 during the pre-implementation stage, increased to the independent level after strategy training. Based on these results obtained after the main study at Grade 4 level, it can be stated that strategy training has a positive effect on word recognition, reading comprehension, and reading.

In the post-implementation level determination stage conducted at Grade 2, 3, and 4 levels with fourth grader in the study group, it was concluded that the student's Grade 2 word recognition level was 0.99 at the independent level, while Grade 3 and 4 levels were 0.98 and 0.94, respectively, at the instructional level. The student's reading comprehension level was found to be 1,00 at the independent level at all Grade levels. Similarly, their reading was at the independent level across all examined Grade levels. Based on these results from the post-implementations, it can be argued that strategy training has a positive effect on word recognition, reading comprehension, and reading level.

According to the results obtained from the preliminary, pilot, main, and final implementations, it has been determined that the POSSE Reading Comprehension Strategy training enriched with fluent reading strategies and the story mapping method was effective in alleviating and improving the reading comprehension difficulties of the 4th grade student with special learning difficulties.

The results obtained from the current study which was conducted to improve the reading comprehension skills of a 4th grade student with special learning difficulties by using the POSSE Reading Comprehension Strategy enriched with fluent reading strategies and story mapping echo results of previous studies.

In Ekiz et al.'s (2012) action research, similar to the current study, it was concluded that the POSSE reading comprehension strategy was effective in improving the comprehension skills of students with reading and comprehension difficulties. The study also showed that the word recognition levels of the students in the study increased from the frustration level to the independent level, and their comprehension levels increased from the frustration level to the instructional level.

In a study on the impact of reading comprehension strategies on cognitive and affective learning, the effects of the POSSE reading comprehension strategies on 5th graders' reading comprehension levels, attitudes towards Turkish class, reading comprehension self-efficacy perceptions, and writing skills were examined. Epçaçan's (2008) study found that the POSSE reading comprehension strategy was effective in improving the reading comprehension levels and self-efficacy perceptions related to the comprehension skills of fifth-graders. Özak's (2017) study showed that cognitive strategy instruction was effective in improving the reading comprehension skills of students with intellectual disabilities and found that three students with these disabilities in grades 3 and 4 were able to focus their attention and improved their reading comprehension through the use of the strategy. The researcher emphasized the importance of cognitive strategies in the process of reading instruction, and the need for multi-component cognitive strategy training. Despite their seemingly complex nature, multi-component cognitive strategies are easy to apply and can increase motivation. This supports the effectiveness of the POSSE reading comprehension strategy in improving comprehension levels. In their study reviewing experimental theses related to specific learning difficulties in Turkey, Arı et al. (2019) state that multiple teachings on the same topics are necessary to overcome the difficulties experienced by individuals with specific learning difficulties in reading, and that there are limitations in the use of multi-component strategies. Despite these limitations, in a study by Bayram and Aktaş (2018) which aimed to identify the reading comprehension strategies used by Turkish language and elementary teachers during Turkish language instruction, it was found that teachers used prediction, goal setting, visual interpretation, activating prior knowledge; fluent reading, note taking, underlining, silent and oral reading, mental imagery, finding the meaning of words; summarizing, identifying main/ supporting ideas, and question-answer strategies within the POSSE reading comprehension strategy.

The results of the study suggest that the POSSE reading comprehension strategy structures reading and comprehension activities by encompassing all the mentioned strategies, and improves reading and comprehension levels. This is also supported by Şahin and Kaman's (2013) study titled "The Effect of Using Fluent Reading Strategies on Improving the Reading Levels of Primary School Third Grade Students," where it was found that reading practice implemented in line with the POSSE reading comprehension strategy improves students' reading and reading comprehension levels. In a study conducted by Aktaş and Çankal (2019), where they investigated the effects of fluent reading strategies on reading comprehension skills and reading motivation in Turkish classes of fourth-grade students, it was found that fluent reading strategies had a positive effect on both reading comprehension skills and

reading motivation, which is similar to the results of the current study. Similarly, Akyol and Kodan's (2018) study found that using choir, repeated, and assisted reading methods together had a positive effect on weak readers' reading and comprehension skills. Another study conducted by Gül (2019), using the word box strategy, showed that the reading difficulty of a 4th grade student with reading difficulties was alleviated with enriched teaching methods suitable for the student's learning style, and their word recognition level improved from the level of frustration to the independent level. In addition, the story mapping method was used to improve the student's reading comprehension skills, and they also improved from the level of frustration to the independent level. As in the current study, the previous one emphasized the positive effects of strategy instruction and the story mapping method in alleviating reading difficulties and improving reading comprehension. In the current study, the story mapping method was used to improve a student's reading comprehension skills. Similar results to the current one were found in studies by Idol et al. (1987) and Boulineau et al. (2004), in which story mapping was used to alleviate reading comprehension difficulties and improve reading comprehension skills in individuals with reading difficulties.

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GENİŞLETİLMİŞ TÜRKÇE ÖZET

ÖZEL ÖĞRENME GÜÇLÜĞÜ OLAN BİR ÖĞRENCİNİN OKUDUĞUNU ANLAMA BECERİSİNİN TAHMİN-İNCELEME-ÖZETLEME ÖRGÜTLEME- DEĞERLENDİRME (TİÖD) OKUDUĞUNU ANLAMA STRATEJİSİYLE GELİŞTİRİLMESİ

GİRİŞ

Akademik beceriler incelendiğinde okuma ve okumanın asıl amacı olan okuduğunu anlama temel akademik beceriler olarak karşımıza çıkmaktadır. Çünkü okuma ve okuduğunu anlama becerisinin geliştirilemediği durumlarda öğrenci yalnızca Türkçe dersi kapsamında değil, bütün derslerinde akademik başarısızlık yaşamaktadır. Bundan dolayı okuma ve okuduğunu anlamının öğretimi kasıtlı bir şekilde bir programa bağlı olarak gerçekleştirilmesi gerekmektedir. Öğrencilerin hiçbir özel durumu olmamasına rağmen bu süreçte okuma ve okuduğunu anlama güçlükleri yaşadıkları gözlenmektedir. Güçlük yaşayan bireylerin okuma ve okuduğunu anlama öğretiminin gerçekleştirilmesi için farklı stratejilerin işe koşulması şarttır. Bu stratejiler öğrencilerin problem durumuna göre değişiklik göstermeli, bireysel özelliklerine göre belirlenmelidir. Bundan dolayı alan araştırmalarında strateji uygulamalarına yer verilmesi oldukça önem taşımaktadır. Alan taraması yapıldığında özel öğrenme güçlüğü yaşayan öğrencilere okuma ve okuduğunu anlama becerisinin öğretiminde kullanılan pek çok stratejiye yer verilmesine rağmen çok ögeli bilişsel stratejinin uygulandığı araştırma sayısının az olduğu dikkat çekmektedir. Bundan dolayı bu araştırmada Tahmin, İnceleme, Özetleme, Örgütleme, Değerlendirme (TİÖD) okuduğunu anlama stratejisinin uygulamasının gerçekleştirildiği, çalışma grubunda yer alan özel öğrenme güçlüğü tanısı almış öğrencinin okuma ve okuduğunu anlama becerisinin geliştirilebilmesi için öğrencinin öncelikle yeteneklerine odaklanılarak yürütülen uygulama süresince TİÖD okuduğunu anlama stratejisinin aşamalarına uygun şekilde planlanan ve uygulanan etkinlikler ve çalışmalar yoluyla öğrencinin bağımsız bir okur olması ve okuduğunu anlama becerisinin geliştirilmesi, yapılan strateji uygulamasının bu sürece etkisinin incelenmesi amaçlanmıştır. Bu amaç doğrultusunda özel öğrenme güçlüğü tanısı almış, tam zamanlı kaynaştırma kapsamında destek eğitim gören ilkokul 4.sınıf öğrencisinin okuduğunu anlama güçlüğünün giderilmesinde çok ögeli bilişsel stratejilerden biri olan TİÖD okuduğunu anlama stratejisinin özel öğrenme güçlüğü olan öğrencinin okuduğunu anlama düzeyini geliştirmede etkililiği belirlemek için aşağıdaki sorulara cevap aranmıştır:

Tam zamanlı kaynaştırma kapsamında öğrenim gören ve okuduğunu anlama güçlüğü olan, bir ilkokul 4.sınıf öğrencisinin okuduğunu anlama güçlüğüne yönelik hazırlanan TİÖD okuduğunu anlama stratejisinin zenginleştirilmiş öğretim uygulaması sonrası;

a) Kelime tanıma düzeyi nedir?

b) Okuduğunu anlama düzeyi nedir?

c) Okuma düzeyi nedir?

LİTERATÜR TARAMASI

Okuma ve okuduğunu anlama güçlüğünün giderilmesine yönelik kullanılan okuma ve okuduğunu anlama stratejilerine ilişkin yurt içi ve yurt dışı yayınlar bilimsel dergi, akademik veri tabanlarından ve bilimsel kitaplardan yararlanılarak incelenmiştir. Alan incelemesi yapıldığında kullanılan stratejilerin daha çok deneysel desen kapsamında uygulandığı, eylem araştırmasına ve kapsamlı uygulamayı içeren çok ögeli bilişsel stratejiye yönelik araştırma sayısının çok daha az olduğu belirlenmiştir. Bundan yola çıkarak amaçlı örnekleme yöntemiyle belirlenen çalışma grubundaki öğrencinin özelliklerine ve yeteneklerine uygun şekilde çok ögeli bilişsel stratejilerden TİÖD okuduğunu anlama stratejisi belirlenerek araştırma kapsamı bu strateji üzerine yoğunlaştırılmıştır.

Yöntem

Çalışma grubu amaçlı örnekleme yöntemiyle belirlenmiş araştırma, Batı Karadeniz bölgesinde bir ilkokulda araştırmanın amacına uygun olarak seçilmiş, herhangi bir sağlık problemi olmayan, özel öğrenme güçlüğü tanısı almış, okuma ve okuduğunu anlama güçlüğü yaşayan ve tam zamanlı kaynaştırma kapsamında destek öğrenim gören bir ilkokul 4.sınıf öğrenci ile yürütülmüştür.

Araştırma nitel araştırma modellerinden “Eylem Araştırması” ile desenlenmiştir. Veri toplama süreci eylem araştırması aşamalarına uygun şekilde algılama, teşhis ve tedavi süreçlerinden oluşan; eylem araştırması döngüsel sürecine uygun şekilde tanılama, eylem planlama, harekete geçme, değerlendirme ve öğrenmeyi belirleme aşamalarının gerçekleştirildiği; problemin tanımlanarak, veri toplama süreci ile devam eden verilerin analiz edilip, eylem planının hazırlandığı, uygulandığı ve sonuçların değerlendirilerek yeniden sonraki eylem planının hazırlandığı bir sürece uygun şekilde gerçekleştirilmiştir. Eylem araştırması basamaklarına uygun şekilde verilerin toplanması sürecinde; Talim Terbiye Kurulu Başkanlığı tarafından onaylanmış İlkokul 1, 2, 3 ve 4.sınıf Türkçe ders kitaplarında yer alan öyküleyici metinlerden, TİÖD okuduğunu anlama stratejisinin stratejisine uygun hazırlanmış materyaller ve etkinliklerden yararlanılmıştır. Araştırma sürecinde veriler, veli izni alındıktan sonra şematik düzenleyicilere işlenerek bunun yanında ses ve video kaydı aracılığıyla elde edilmiştir.

Araştırma sürecinde okuduğunu anlama becerisinin geliştirilmesi için çok ögeli bilişsel stratejilerden biri olan TİÖD okuduğunu anlama stratejisinin kullanıldığı toplamda 165 saat süren 59 uygulama yapılmıştır. 1.sınıf Türkçe ders kitabında yer alan öyküleyici metinlerle araştırmanın ön test uygulaması yapılarak, öğrencinin okuma düzeyi belirlenmiş ve öğrencinin düzeyine uygun etkinlikler ve materyaller hazırlanarak çalışma planı yapılmıştır. Araştırmada kullanılan TİÖD okuduğunu anlama stratejisi ile okuma ve okuduğunu anlama güçlüğünü gidermede kullanılan yöntem ve tekniklerin uygunluğunu belirlemek amacıyla, 12 öyküleyici metinle çalışma yürütülerek, her oturumu 3 saatten oluşan 12 uygulamanın toplam 36 saat sürdüğü bir pilot uygulama yapılmıştır. Öncelikle pilot

uygulamadan elde edilen bulgulara göre etkinlikler ve materyaller hazırlanarak, İlkokul 2.sınıf Türkçe ders kitaplarında yer alan 20, 3.sınıf Türkçe ders kitaplarında yer alan 10 ve 4.sınıf Türkçe ders kitaplarında yer alan 10 olmak üzere toplamda 40 öyküleyici metinle asıl uygulama süreci yürütülmüştür. Araştırmanın son aşamasında İlkokul 2, 3 ve 4. sınıf Türkçe ders kitaplarında yer alan öyküleyici metinler aracılığıyla son test uygulaması yapılarak öğrencinin okuduğunu anlama becerisini geliştirmede TİÖD okuduğunu anlama stratejisinin okuduğunu anlama stratejisinin etkililiği değerlendirilmiştir. Toplanan veriler Haris ve Sipay (1990), Ekwall ve Shanker (1988) ve May (1986)'den Türkçe'ye Akyol (2014) tarafından uyarlanan "Yanlıı Analiz Envanteri" aracılığıyla analiz edilmiştir.

TARTIŐMA VE SONUÇ

Araştırmanın sonuçlarına göre öğrencinin okuma ve okuduğunu anlama düzeyleri endişe düzeyinden serbest okuma düzeyine yükseldiđi belirlenerek TİÖD okuduğunu anlama stratejisinin öğrenme güçlüğü yaşayan öğrencinin okuduğunu anlama becerisini geliştirmede etkili olduđu ortaya konmuştur. Araştırma bulgularından ortaya çıkan sonuçlara göre; son okuma uygulamalarında öğrencinin kelime tanıma ve okuduğunu anlama düzeyleri endişe düzeyinden serbest okuma düzeyine yükseldiđi belirlenmiştir. Bu bulgulardan yola çıkılarak TİÖD okuduğunu anlama stratejisinin okuduğunu anlama stratejisinin öğrenme güçlüğü yaşayan öğrencinin okuduğunu anlama becerisini geliştirmede etkili olduđu sonucuna ulaşılmıştır.

Mevcut araştırmanın sonuçlarına benzer şekilde Ekiz vd. (2014)'nin eylem araştırması deseninde gerçekleştirdiđi araştırmada TİÖD okuduğunu anlama stratejisinin etkili olduđu, Epçaçan (2008)'in araştırmada TİÖD okuduğunu anlama stratejisinin ilkokul 5.sınıf öğrencilerinin okuduğunu anlama düzeylerini geliştirdiđi, Özak (2017)'in zihinsel yetersizliđi olan öğrencilerin okuduğunu anlama becerilerini geliştirmede bilişsel strateji öğretiminin etkililiđini ortaya koyduđu araştırmada zihinsel yetersizliđi olan ilkokul 3. ve 4. sınıfa giden üç öğrencinin strateji sayesinde dikkatlerini topladıđı, okuduklarını anlamalarında stratejinin etkili olduđu, Bayram ve Aktaş (2018)'in araştırmada öğretmenlerin TİÖD okuduğunu anlama stratejisi kapsamında okuma ve anlama çalışmalarını yapılandırmakta ve okuma-anlama düzeyini geliştirdiđi sonuçlarına ulaşılmıştır.

Mevcut araştırmanın sonuçlarından yola çıkılarak deneysel desende tasarlanan büyük örneklerde uygulamalar yapılabilir veya boyamsal araştırmalar planlanarak stratejinin etkililiđine yönelik genellemelere ulaşılabilir. Mevcut araştırmada ve birçok araştırmada olduđu gibi stratejinin ilkokul düzeyi dışında da ilköğretim ve ortaöğretim öğrencilerinin okuduğunu anlama güçlüğüne giderilmesi ve geliştirilmesinde etkililiđi üzerine araştırmalar da alana katkı sağlayabileceđi de ifade edilebilir.

**AN EVALUATION OF CHANGE MANAGEMENT
COMPETENCIES OF BASIC EDUCATION SCHOOL ADMINISTRATORS
(THE CASE OF AKDENİZ DISTRICT, MERSİN)**

Mehmet YOKUŞ¹

Erdal BULUT²

Halil KÜÇÜKUSTA³

Zülfikar TEKİN⁴

Geliş Tarihi/Received: 04.05.2023 Elektronik Yayın / Online Published: 20.06.2023

DOI: 10.48166/ejaes.1290584

ABSTRACT

This research aims to determine the competency levels of school administrators serving in public basic education schools in change management in terms of determining the need for change in school, preparing the school for the change process, implementing change in school, and evaluating the change, according to the perceptions of school administrators and teachers. In addition, the study aims to determine whether the perceptions of participants in each dimension differ by gender, age, and seniority variables. The research population consists of teachers and administrators working in basic education schools affiliated with the Ministry of National Education in the Akdeniz District of Mersin Province. The study population includes 90 basic education schools (primary and secondary schools). In these basic education schools, there are 1280 teachers and 195 school administrators (principals and vice principals). The number of teachers included in the sample representing them was 222, and the number of administrators was 101. A Scale for Evaluating School Administrators' Change Management Competencies, developed by the researcher, was administered to the research participants. The collected were analyzed using the SPSS program. To determine whether the competency levels of school administrators in change management differed by position and gender based on the participants' perceptions, t-tests were applied, and to determine whether they differed by seniority and age, ANOVA tests were employed. The research findings indicated that according to the perceptions of public basic education school administrators, the administrators demonstrated high competencies in change management in the dimensions of determining the need for change in school, preparing the school for the change process, implementing the change in school, and evaluating the

¹ Öğretmen, Mersin İl Milli Eğitim Müdürlüğü, mehmetyokus84@hotmail.com, Turkey, ORCID:0009-0008-3953-4372

² Öğretmen, Mersin İl Milli Eğitim Müdürlüğü, erdalbulut.3380@gmail.com, Turkey, ORCID:0009-0009-3970-0817

³ Öğretmen, Mersin İl Milli Eğitim Müdürlüğü, hkucukusta@gmail.com, Turkey, ORCID:0009-0007-7375-1744

⁴ Öğretmen, Mersin İl Milli Eğitim Müdürlüğü, z.tekin3363@gmail.com, Turkey, ORCID:0009-0000-1524-2916

change. According to teachers' perceptions, the administrators had high competency in all dimensions of change management.

Keywords: Change; change management; organizational change; transformational leadership; competency

TEMEL EĞİTİM OKULU YÖNETİCİLERİNİN DEĞİŞİMİ YÖNETME YETERLİKLERİ (MERSİN İLİ AKDENİZ İLÇE ÖRNEĞİ)

ÖZET

Bu araştırma, resmi ilköğretim okullarında görev yapan okul yöneticilerinin değişim yönetiminin; okulda değişim ihtiyacını belirleme; okulu değişim sürecine hazırlama, okulda değişimi uygulama ve değişimi değerlendirme boyutlarında ne derecede yeterli olduklarını okul yöneticilerinin ve öğretmenlerin algılarına göre saptamayı amaçlamaktadır. Ayrıca, katılımcıların her bir boyuttaki algılarının cinsiyet, yaş, kıdem değişkenine göre farklılaşıp farklılaşmadığı saptanmak istenmiştir. Araştırma evreni Mersin İli Akdeniz İlçesi sınırları içerisinde bulunan Milli Eğitim Bakanlığı'na bağlı temel eğitim okullarında görev yapan öğretmenler ve yöneticilerden oluşmaktadır. Araştırmanın evreninde 90 resmi temel eğitim (ilkokul, ortaokul) okulu bulunmaktadır. Bu resmi temel eğitim okullarında, 1280 öğretmen ve 195 okul yöneticisi (müdür ve müdür yardımcısı) görev yapmaktadır. Bunları temsilen örnekleme giren öğretmen sayısı 222; örnekleme giren yönetici sayısı 101 belirlenmiştir. Örnekleme oluşturan katılımcılara, araştırmacı tarafından geliştirilen "Okul Yöneticilerinin Değişimi Yönetme Yeterliklerini Değerlendirme Anketi" uygulanmıştır. Elde edilen veriler SPSS paket programında çözümlenmiştir. Katılımcıların algılarına göre okul yöneticilerinin değişimi yönetme boyutlarındaki yeterlik düzeylerinin; görev değişkeni ve cinsiyete göre farklılaşıp farklılaşmadığının belirlenmesi için t-testi, kıdem ve yaş değişkenine göre farklılaşıp farklılaşmadığını tespit etmek için Anova testi uygulanmıştır. Araştırma bulguları, resmi temel eğitim okul yöneticilerinin algılarına göre yöneticilerin, değişimi yönetme "okulda değişim ihtiyacını belirleme", "okulu değişim sürecine hazırlama", "okulda değişimi uygulama" ve "değişimi değerlendirme" boyutlarına ilişkin yeterliklerinin ise "çok" düzeyinde olduğunu göstermiştir. Öğretmenlerin algılarına göre ise yöneticilerin, değişim yönetiminin tüm boyutlarına ilişkin yeterlik düzeyleri "çok" düzeyindedir.

Anahtar Kelimeler: Değişim; değişim yönetimi; örgütsel değişim; dönüşümcü liderlik; yeterlik.

1. INTRODUCTION

The concept of change is one of the most frequently mentioned concepts nowadays. This concept, which grabs our attention in almost every field, has become an inevitable and indispensable phenomenon for individuals, societies, and organizations. While change has always been an important phenomenon in past years, it has become more prominent and even a slogan since the 1980s. The knowledge that dominates our current era is doubling every four years. Advanced societies that fulfill the requirements of this era are defined as information/post-modern societies. Especially with the advancements in computer and communication technology, and with the parallel developments enabling people to access information quickly and easily, knowledge has become a very powerful force. Knowledge has become the fundamental capital and most important resource of the economy today (Drucker, 1996: 87). Educational institutions that are important parts of sociocultural and economic

reform and development also undergo changes in their goals, structure, and content. In order to adapt to current conditions, it has become a responsibility and even a necessity for schools to change themselves by adjusting their goals and structures (Balçı, 2000: 495; Taymaz, 1997: 28; Cafoğlu, 1996: 39). In today's world, raising standards in education, finding new resources for education, and making some changes are no longer sufficient. New organizational and management approaches are also being tested in schools. Approaches such as "Total Quality Management", "Zero Defect Management", and "Total Learning" are emphasized. It is argued that societies that cannot adapt their education systems to this process would be left out of all these developments (Özdemir, 2000: 8).

In the face of rapid developments, countries around the world have started to make significant changes in their education systems with initiatives such as "school improvement", "effective schools", "restructuring", and "reform" to help their people adapt to the conditions of the current age (Balçı, 2000: 495). In Turkey, after the 1980s, various change activities have been observed in the education system under the efforts of "restructuring", "education reform", "reorganization", or "development" in order to reach the standards required by contemporary life and improve the quality of education. Some of these reform initiatives, such as the transformation of two-year teacher training institutes into faculties, transition to passing grades and credit system, the VEHSG (vocational education for high school graduates) project, extension of basic education to eight years, restructuring of education faculties under the National Education Development Project, activities aimed at improving the primary and secondary education system under this project, reconsideration of university entrance exam system, restructuring of central and regional organizations (such as adding or removing some units from the organization), amendment of the Law on the Organization and Duties of the Ministry of National Education, changes in school curricula, activities regarding the Total Quality Management, initiation of computer usage in schools, and changes in teaching profession titles (teacher, expert teacher, head teacher) have realized or desire to realize some structural, technological, human, and goal-oriented initiatives that may cause some changes (Kaptan, 2001: 298; Toklucu, 2001: 70; Toptan, 2001: 388; Türk, 1998: 253; Hesapçıoğlu, 2003: 155).

It appears that the change or innovation initiatives mentioned above are implemented in Turkey without being investigated whether they will be accepted or rejected by the school or the system. It is argued that instead of difficult or effective change or innovation, easy and dashy ones are chosen, and consequently, change initiatives cannot solve the problems or achieve the purpose of the change, and a lot of effort, time, and money are wasted (Bursalıoğlu, 2000: 54; Özdemir, 1995: 84; Cafoğlu, 1996: 39). One of the most important reasons behind this is the failure to adhere to the principles of "change management" and the lack of knowledge and experience on how change efforts can be managed effectively (Tanrıöğen, 1995: 10; Özden, 2000: 49; Erdoğan, 2002: 63). While there is a certain amount of knowledge accumulation on planned change in education in developed countries, especially in the USA, the number of studies conducted in this field in Turkey is limited. In a period where many innovations are foreseen in education, it is necessary to identify the factors that enable change practices

to be successful or cause their failure (Karip, 1997: 63). Unsuccessful reform or change initiatives in education may lead to expectations that new reform efforts will also fail. Such negative expectations can hinder the success of reforms even in organizations where there is no resistance to change (as cited in Karip, 1996: 87).

Reform, school improvement, or restructuring initiatives emerging in education today are placing more responsibility on those who make decisions for schools. Expectations from schools and the role of school principals are also changing. It is considered a shared view that the role and responsibilities of school principals will undergo continuous change and will never remain as unchanging principle (Helvacı, 2005: 9). School administrators who want to make successful changes and innovations in education need to understand the change processes and school organizations from an organizational perspective, the forces that drive schools to change, which elements of the organizations are affected by these forces and require change, and how to understand the employees during the change process, why and how they resist change, and how to strategically approach this resistance. They also need to have sufficient knowledge and skills in change models, change programs, and practices. These knowledge and skills constitute the scope of managing change, and school administrators are expected to be change managers, transformational leaders, change leaders, or change experts (Alıç, 1990: 12; Çalık, 1997: 53; Karip, 1996: 245). In this respect, there is a need for knowledge and experience on how to manage change in education. Therefore, the way change is managed in the education system or schools is an important issue that needs to be explored and shaped. This is because change is a process that has a certain systematics (Erdoğan, 2002: 124; Özdemir, 1995:159; Tanrıöğen, 1995:13; Çelikten, 2000: 14; Alkan, 1992: 76; Alıç, 1990: 65).

The purpose of this research is to examine the competencies that school administrators working in public basic education schools affiliated with the Ministry of National Education in Akdeniz district of Mersin Province have in managing change according to the perceptions of school administrators and teachers. Education, which is the most important component of economic and social development today, is undergoing rapid and continuous change worldwide. Education is no longer perceived solely as a constitutional right and a duty of a social law state, but is also considered as one of the most efficient production areas of educated manpower from an economic perspective. Furthermore, education is one of the most effective tools in managing political, social, and cultural integration and changes. As the importance of knowledge is rapidly increasing in the world, the concept of “knowledge” and the understanding of “science” are also rapidly changing. The concept of management is diversifying, technology is advancing rapidly, and parallel to all of these, there are difficulties in transitioning from the globalization and industrial society to an information society. The process of globalization, which is becoming dominant with the said rapid change and development, has not only become determinant in the economic field but also began to be effective in education, culture, and management. These developments have also initiated the process of forming an information society. The effective implementation of change is not a process that can be carried out based on personal experiences.

Effective changes in the Turkish education system and in schools, which are the most important component of this system, could be largely achieved through school principals' necessary and sufficient knowledge and skills in change management.

This study aims to determine the level of competence of basic education school principals working in the Akdeniz district of Mersin province and examine their current situation in change management. The findings obtained from the study are expected to:

- Provide more realistic information about the current competencies of school administrators and contribute to more effective implementation of change initiatives in schools.
- Provide a theoretical contribution to the importance of change management in education, how change can be realized, and change processes and models.
- Provide insight into school administrators' training programs as part of in-service training.
- Create opportunities for reflection, discussion, and new research on change management in educational organizations.

Research Questions and Sub-Research Questions

What are the competency levels of basic education school administrators in change management according to the perceptions of school administrators and teachers?

Sub-research questions

1. What are the basic education school administrators' competency levels in determining the schools' need for change?
2. What are their competency levels in preparing the school for the change process?
 - a) What are their competency levels according to their own perceptions?
 - b) What are their competency levels according to teachers' perceptions?
 - c) Do their competency levels differ by gender, age, and seniority variables?

2. METHOD

This section provides information regarding the research model, population and sample, development of the measurement tool, and data collection and analysis.

2.1. Research Model

This research employs a comparative survey model to examine the change management competencies of public basic education school administrators affiliated with the Ministry of National Education. The survey model is a research approach that aims to describe the current and past situations as they are (Karasar, 2004). The comparative (causal-comparative) type of survey model aims to find possible causes of a behavioral pattern by comparing those with and without this pattern (Balci, 2004).

The study examined the differences between the perceptions of basic education school administrators consisting of a group of resource persons regarding their change management competencies according to certain variables (position, seniority, school type) using a comparative survey model.

2.2. Participants

The research participants consisted of teachers and school administrators working in 90 basic education schools affiliated with the Ministry of National Education in the Akdeniz district of Mersin Province during the 2020-2021 school year.

2.3. Data Collection Tools

The data collection tools employed in this research were determined according to the variables intended to be measured. This tool consisted of two sections, where the first section included a Personal Information Form asking about the personal information of school administrators and teachers. The second section included a 5-point Likert-type scale of 65 items and four sub-dimensions for evaluating the change management competencies of school administrators, developed by Helvacı et al. (2006). The scale consists of 67 items and four sub-dimensions, where 9 items are on determining the need for change in school, 32 on preparing the schools for the change process, 22 on implementing the change in school, and 5 on evaluating the change in school, respectively. This study includes only findings regarding the first two sub-dimensions of the scale, *determining the need for change in school* and *preparing the school for the change process*.

Regarding the change management competencies of school administrators, Helvacı et al. (2006) reported Cronbach reliability values of 0.93 and 0.98 for the sub-dimensions of determining the need for change in school and preparing the schools for the change process, respectively. In this study, the Cronbach reliability value was 0.95 for the sub-dimension of determining the need for change in school and 0.95 for the sub-dimension of preparing the schools for the change process.

2.4. Data Collection

The School Administrators' Change Management Competency Evaluation scale developed by Helvacı et al (2006) was used in the study using a Google Doc form online due to the Covid-19 pandemic. It was sent to teachers and school administrators serving in public primary and secondary schools affiliated with the Ministry of National Education in central districts of Mersin Province through SMS and various social communication networks. The participants were informed that they could contact the scale administrator via their contact number and email address in case of any issues that they may encounter regarding the scale. However, no inquiries were made regarding any issues related

to the scale administration. As the participation of participants in the survey was online and voluntary, time and cost were significantly saved in the research.

2.5. Data Analysis

The SPSS (Statistical Program for Social Sciences) program was used in data analysis. In order to evaluate the change management competencies of public school administrators, the arithmetic means and standard deviations of the responses provided by each study group (teachers and administrators) to the items related to school administrators' change management competencies in each dimension were calculated. In order to calculate the scale average scores in the subscales and to compare and interpret the positions of teachers and administrators in the subscales according to these scores, first the scores obtained from the items in each subscale were summed, and thus the change management competency levels of administrators' were determined for each study group. Later, these scores were reduced to the score limits to be taken from the five-point rating scale by dividing them by the number of items in each subscale. These scores were used in the analyses.

A t-test was applied to determine whether there was a significant difference between evaluations regarding the levels of change management competencies of basic education school administrators by position and gender. Herein, a significance level of 0.05 was used to test the differences between group mean scores.

In order to determine whether there were significant differences between the basic education school administrators' change management competencies by age and seniority variables, comparisons were made using ANOVA. The significance level of 0.05 was used as the basis for testing the differences between group mean scores.

3. FINDINGS

This section includes the socio-demographic characteristics of the participants in the survey, their opinions on school administrators' level of concern for using authority, normality tests, findings, and interpretations of the findings. When presenting the findings, the dimensions are separately addressed and provided according to the order of the sub-research questions.

3.1. Demographic distribution of survey participants

In this section, socio-demographic information, including the position, gender, age, and years of service (seniority) of school administrators and teachers is provided. Basic statistical concepts such as frequency, percentage distribution, and total percentage distribution are used for the presentation of demographic information for each variable.

Table 1. Demographic Information Of Research Participants

		f	%	Total %
Position	School Administrator	101	31.3	31.3
	Teacher	222	68.7	100.0
	Total	323	100.0	
Gender	Female	172	53.3	53.3
	Male	151	46.7	100.0
	Total	323	100.0	
Age	25-30	35	10.8	10.8
	31-35	38	11.8	22.6
	36-40	99	30.7	53.3
	41-45	77	23.8	77.1
	46-50	48	14.9	92.0
	51 and older	26	8.0	100.0
	Total	323	100.0	
Seniority	1-5 Years	41	12.7	12.7
	6-10 Years	42	13.0	25.7
	11-15 Years	80	24.8	50.5
	16-20 Years	73	22.6	73.1
	21+ Years	87	26.9	100.0
	Total	323	100.0	

Considering the distribution of the participants' positions in Table 1, out of 323 participants, 31.3% ($n = 101$) were school administrators and 68.7% ($n = 222$) were teachers. Considering their gender distribution, 53.3% ($n = 172$) were females and 46.7% ($n = 151$) were males. Most participants were females.

According to Table 1, 35 (10.8%) participants represented the 25-30 age group, 38 (11.8%) the 31-35, 99 (30.7%) the 36-40, 77 (23.8%) the 41-45, 48 (14.9%) the 46-50, and 26 (8%) the 51+. Considering the percentage of the survey participants, the 36-40 age group with 99 participants constituted the highest percentage by 30.7%.

As seen in Table 1, 41 (12.7%) participants had 1-5 years of seniority, 42 (22.6%) had 6-10, 80 (24.8%) had 11-15, 73 (22.6%) had 16-20, and 87 (26.9%) had 21+ years of seniority. Accordingly, the survey participants with 21+ years of seniority constituted the majority by 26.9% with 87 participants.

3.2. Findings Regarding the Change Management Competencies of Basic Education School Administrators

The research findings are presented as follows: The arithmetic means and standard deviations related to the perceptions of school administrators and teachers regarding the basic dimensions of change management and the competencies clustered under the dimensions are given in tables. In order to determine whether there was a significant difference in participants' perceptions of total competencies for each dimension of change management in terms of position, gender, age, and seniority, t-tests were performed for the variables of position and gender, and ANOVA tests were performed for the variables of age and seniority, and the results were presented in tables.

3.2.1. Findings and Interpretations on Participants' Perceptions of "Determining the Need for Change in School" Dimension and Their Competencies

Statistical measures are provided regarding the perceptions of teachers and administrators about the nine items included in this dimension of the change management competencies scale. The arithmetic mean (\bar{X}) was used to reveal the participation competency levels. The t-test results for position and gender and ANOVA test results for the age and seniority variables of participants were presented.

Table 2. Descriptive Statistics Regarding The Participants' Perceptions Of "Determining The Need For Change In School" Dimension

	Position								
	School Administrator			Teacher			Total		
	\bar{X}	<i>N</i>	<i>SD</i>	\bar{X}	<i>N</i>	<i>SD</i>	\bar{X}	<i>N</i>	<i>SD</i>
1. Redefines the duties and functions of the school in view of developments in the world.	4.18	101	.740	3.85	222	.872	3.95	323	.846
2. Continuously evaluates society's expectations of the school.	4.28	101	.723	4.01	222	.832	4.10	323	.808
3. Determines the expectations and demands of society, students, and parents by holding regular meetings.	3.66	101	.828	3.90	222	.877	3.83	323	.867
4. Determines how technological and socio-economic developments in the world would affect education.	3.87	101	.868	3.79	222	.948	3.82	323	.923
5. Constantly monitors the school operation and tries to identify any problems that exist.	4.30	101	.769	4.17	222	.842	4.21	323	.821
6. Holds regular meetings with school members (students, parents, and other staff) to obtain their views on making education effective.	3.95	101	.841	3.95	222	.938	3.95	323	.908
7. Clearly explains the importance and necessity of change for schools to all school members (students, parents, and other staff).	4.18	101	.754	3.99	222	.970	4.05	323	.911
8. Ensures that school members become sensitive to the pressures of change.	3.89	101	.786	3.95	222	.896	3.93	323	.863
9. Clearly explains the developments in education to school members.	4.13	101	.856	4.03	222	.929	4.06	323	.907
Grand Total	4.05	101	.635	3.96	222	.798	3.99	323	.751

According to the position distribution of the participants in Table 2 related to the dimension of determining the need for change in school, the perception levels of school administrators ($\bar{X} = 4.05$, $SD = 0.635$) and teachers ($\bar{X} = 3.96$, $SD = 0.798$) were high per their grand mean scores and also per their overall total mean ($\bar{X} = 3.98$, $SD = 0.751$). Considering the item means in Table 2, we could say that school administrators ($\bar{X} = 4.30$, $SD = 0.769$) and teachers ($\bar{X} = 4.17$, $SD = 0.842$) had the highest mean in item 5. However, school administrators ($\bar{X} = 3.66$, $SD = 0.828$) and teachers ($\bar{X} = 3.79$, $SD = 0.948$) had the lowest level of perception in item 4.

Table 3. T-Test Table By Participants' Position Regarding The Dimension Of "Determining The Need For Change In School"

Dimension	Variables	<i>N</i>	\bar{X}	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Determining the Need for Change in School	School Administrator	101	4.05	.635	.964	321	.336
	Teacher	222	3.96	.798			
	Total	323	3.99	.751			

According to Table 3, there was no significant difference between the participants ($p > 0.05$) in the dimension of school administrators' determining the need for change in school ($t = 0.964, p = 0.336$) considering the variable of position.

Table 4. T-Test Table By Participants' Gender Regarding The Dimension Of "Identifying The Need For Change At School"

Dimension	Variables	<i>N</i>	\bar{X}	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Determining the need for change in school	Female	172	3.84	.714	-3.619	321	.000
	Male	151	4.14	.763			
	Total	323	3.99	.751			

As seen in Table 4, there was a significant gender difference between the participants in determining the need for change in school ($t = -3.619, p = 0.000$). Accordingly, male participants ($\bar{X} = 4.14, SD = 0.763$) demonstrated a higher level of perception in the dimension of determining the need for change in school than female participants ($\bar{X} = 3.84, SD = 0.714$).

Table 5. ANOVA Table By Participants' Age Regarding The Dimension Of "Determining The Need For Change In School"

Age Groups	<i>N</i>	\bar{X}	<i>SD</i>
1. 25-30	35	4.13	.882
2. 31-35	38	3.91	.958
3. 36-40	99	4.05	.692
4. 41-45	77	3.88	.766
5. 46-50	48	3.95	.497
6. 51+	26	4.06	.795
Total	323	3.99	.751

ANOVA						
Source of Variance	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>	Significant difference
Between groups	2.377	5	.475	.840	.522	None
Within groups	179.371	317	.566			
Total	181.748	322				

As shown in Table 5, when the dimension of determining the need for change in school was examined according to age, the one-way variance analysis indicated no significant difference between the mean scores of the groups ($p = 0.522 > 0.05$). Considering their perception levels, the 25-30 age group had the highest mean score ($\bar{X} = 4.13$).

Table 6. ANOVA Table By Participants' Seniority Regarding The Dimension Of "Determining The Need For Change In School"

Groups	<i>N</i>	\bar{X}	<i>SD</i>			
1. 1-5 Years	41	4.27	.626			
2. 6-10 Years	42	3.94	.928			
3. 11-15 Years	80	3.83	.791			
4. 16-20 Years	73	4.03	.737			
5. 21+ Years	87	3.99	.653			
Total	323	3.99	.751			

ANOVA						
Source of Variance	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>	Significant difference
Between groups	5.588	4	1.397	2.522	.041	1-3
Within groups	176.160	318	.554			
Total	181.748	322				

When the ANOVA results related to the dimension of determining the need for change in school were examined by seniority in Table 6, there was a statistically significant difference between the mean scores of the groups ($p = 0.41 < 0.05$). Since the significance value was $p = 0.041 < 0.05$, there was a need for the test of homogeneity of variances.

Table 7. Test Of Homogeneity Of Variances By Seniority Regarding The Dimension Of "Determining The Need For Change In School"

Levene's Statistic	<i>df1</i>	<i>df2</i>	Sig.
2.428	4	318	0.048

According to Table 7, since the significance value related to the dimension of determining the need for change in school was $0.048 < 0.05$ considering the seniority variable, the variances of the groups were non-homogeneous. As the variances of the groups were non-homogeneous, the results of Tamhane's T2 Post Hoc test for Multiple Comparisons (Equal Variances Not Assumed) were examined to determine which groups differed by seniority in the dimension of determining the need for change in school.

Table 8. Table Of Tamhane’s T2 By Seniority For The Dimension Of “Determining The Need For Change In School”

(I) Years of Seniority	(J) Years of Seniority	Mean Difference	Sig. (p)
1. 1-5	2. 6-10	.335	.447
	3. 11-15	.445*	.011
	4. 16-20	.245	.481
	5. 21+	.283	.192
2. 6-10	1. 1-5	-.335	.447
	3. 11-15	.110	.999
	4. 16-20	-.090	1.000
	5. 21+	-.052	1.000
3. 11-15	1. 1-5	-.445*	.011
	2. 6-10	-.110	.999
	4. 16-20	-.200	.681
	5. 21+	-.162	.811
4. 16-20	1. 1-5	-.245	.481
	2. 6-10	.090	1.000
	3. 11-15	.200	.681
	5. 21+	.038	1.000
5. 21+	1. 1-5	-.283	.192
	2. 6-10	.052	1.000
	3. 11-15	.162	.811
	4. 16-20	-.038	1.000

A pairwise comparison of each group was made and the mean differences of these compared groups are given in Table 8. Asterisks (*) given next to these values indicate the presence of a significant difference between these pairs of mean scores. Values of $p < 0.05$ in pairwise comparisons indicate significant differences between the seniority groups. Considering the pairwise comparison of the mean differences in Table 8, there were significant differences between the participants having 1-5 and 11-15 years of seniority (MD = 0.445*, $p = 0.011$). The mean score of participants with 1-5 years of seniority was $\bar{X} = 4.27$, whereas the mean score of participants with 11-15 years of seniority was $\bar{X} = 3.83$.

3.2.2. Findings and Interpretations on Participants’ Perceptions of “Preparing the School for the Change Process” Dimension and Their Competencies

Statistical measures related to 31 items on teachers’ and administrators’ perceptions in this dimension of the change management competencies scale were provided. In order to reveal their level of agreement with these items, arithmetic means (\bar{X}) were used. The t-test results for position and gender and ANOVA test results for the age and seniority variables of participants were presented.

Table 9. Descriptive Statistics Regarding The Participants' Perceptions Of "Preparing The School For The Change Process"

Dimension	Position									
	School Administrator			Teacher			Total			
	\bar{X}	<i>N</i>	<i>SD</i>	\bar{X}	<i>N</i>	<i>SD</i>	\bar{X}	<i>N</i>	<i>SD</i>	
10	Able to put forward the essentiality of change for all members in the school environment with justifications.	4.18	101	.817	3.98	222	.956	4.04	323	.918
11	Able to create a sense of need for change in all school members	4.04	101	.720	3.97	222	.937	3.99	323	.874
12	Able to determine the aims and objectives of change together with school members.	3.87	101	.868	3.94	222	.954	3.92	323	.927
13	Able to clearly define the point intended to be reached through change.	4.11	101	.760	4.01	222	.932	4.04	323	.882
14	Able to develop a vision for change that can guide change efforts.	3.93	101	.803	3.93	222	.975	3.93	323	.923
15	Able to develop a feasible change model (project) together with school members.	3.93	101	.765	3.77	222	1.013	3.82	323	.944
16	Able to determine when and how to initiate the transition to change.	3.91	101	.736	3.81	222	.995	3.84	323	.922
17	Able to determine in which areas (technological, physical, program, teaching process, etc.) the change will occur in school.	4.09	101	.873	3.89	222	.898	3.95	323	.894
18	Able to decide together with school members what level of change (a fundamental or partial change?) is needed in the school.	4.04	101	.916	3.82	222	1.041	3.89	323	1.007
19	Able to ensure that everyone understands the benefits of change	4.05	101	.740	3.93	222	.927	3.97	323	.874
20	Able to identify people who will take on authority and responsibilities for change.	4.07	101	.897	3.99	222	.951	4.02	323	.934
21	Able to give confidence and support to all members involved in the change process at school.	4.37	101	.845	4.02	222	.958	4.13	323	.937
22	Able to effectively communicate to school members how the change will take place.	4.07	101	.828	3.95	222	.973	3.98	323	.931
23	Able to receive the school members' support for change.	4.22	101	.844	4.05	222	.945	4.11	323	.916
24	Able to communicate effectively with all school members to develop a shared sense of need for change.	4.24	101	.896	3.94	222	1.034	4.03	323	1.001
25	Able to try preparing school members for change emotionally.	4.26	101	.833	3.92	222	1.028	4.03	323	.982
26	Able to foresee what effects the change will have on school members.	4.06	101	.822	3.89	222	1.072	3.94	323	1.003
27	Able to consider that human beings are always at the core of the phenomenon of change.	4.14	101	.788	4.18	222	.869	4.17	323	.843
28	Able to look at the desired changes not only from their own perspectives but also from others' perspectives.	4.14	101	.825	4.12	222	.931	4.13	323	.898
29	Able to evaluate whether the change will meet the expectations and needs of society.	4.07	101	.816	4.03	222	.917	4.04	323	.885
30	Able to equip the school members with the necessary knowledge, attitude, and skills for change.	4.17	101	.788	3.99	222	.925	4.04	323	.887
31	Able to provide educational opportunities for school members to ensure that the change takes place in a healthy manner.	3.91	101	1.059	3.93	222	.963	3.92	323	.992
32	Able to evaluate whether school members are ready for change.	4.03	101	.830	3.88	222	.946	3.93	323	.913
33	Able to identify the new knowledge, skills, and attitudes that school members should have at the end of the change process.	4.05	101	.910	3.98	222	.917	4.00	323	.914

34	Able to prepare the necessary budget for change.	3.69	101	1.075	3.75	222	1.100	3.73	323	1.091
35	Able to prepare resources (e.g., tools, money, etc.) that support change.	3.81	101	1.017	3.81	222	1.065	3.81	323	1.049
36	Able to provide support for the school change process from central or local government and other social institutions.	4.04	101	.836	3.99	222	.949	4.00	323	.914
37	Able to identify possible factors that hinder change.	4.16	101	.674	3.97	222	.907	4.03	323	.845
38	Able to identify possible factors that facilitate change.	4.02	101	.735	4.01	222	.890	4.02	323	.843
39	Able to identify the causes of resistance to change.	4.07	101	.752	3.88	222	.855	3.94	323	.828
40	Able to determine strategies to eliminate resistance.	4.07	101	.840	3.81	222	.943	3.89	323	.919
Grand Total		4.06	101	.665	3.94	222	.861	3.98	323	.806

As seen in Table 9, when the dimension of preparing the school for the change process was examined according to the position distribution of the participants, the school administrators ($\bar{X} = 4.06$, $SD = 0.665$) and teachers ($\bar{X} = 3.94$, $SD = 0.861$) demonstrated high levels of perceptions, as also reflected by their overall mean score ($\bar{X} = 3.98$, $SD = 0.806$). According to the item mean scores in Table 9, in the dimension of preparing the school for the change process, school administrators had the highest mean score in item 21 ($\bar{X} = 4.37$, $SD = 0.845$), and teachers in item 27 ($\bar{X} = 4.18$, $SD = 0.869$). According to the mean scores, the item indicating the lowest perception level in school administrators ($\bar{X} = 3.69$, $SD = 1.075$) and teachers ($\bar{X} = 3.75$, $SD = 1.100$) was item 34.

Table 10. T-Test Table By Participants' Position Regarding The Dimension Of "Preparing The School For The Change Process"

Dimension	Variables	<i>N</i>	\bar{X}	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Preparing the School for the Change Process	School Administrator	101	4.06	.665	1.221	321	.223
	Teacher	222	3.94	.861			
	Total	323	3.98	.806			

According to Table 10, there was no significant difference ($p > 0.05$) between the participants in the dimension of school administrators' preparing the school for the change process ($t = 1.221$, $p = 0.223$) considering the variable of position.

Table 11. T-Test Table By Participants' Gender Regarding The Dimension Of "Preparing The School For The Change Process"

Dimension	Variables	<i>N</i>	\bar{X}	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Preparing the School for the Change Process	Female	172	3.85	.760	-3.025	321	.003
	Male	151	4.12	.834			
	Total	323	3.98	.806			

According to Table 11, there was a significant gender difference between the participants in preparing the school for the change process ($t = -3.025$, $p = 0.003$). Accordingly, male participants ($\bar{X} = 4.12$, $SD = 0.834$) demonstrated higher levels of perceptions in the dimension of preparing the school for the change process than female participants ($\bar{X} = 3.85$, $SD = 0.760$).

Table 12. ANOVA Table By Participants' Age Considering The Dimension Of "Preparing The School For The Change Process"

Age Groups	<i>N</i>	\bar{X}	<i>SD</i>
1. 25-30	35	4.21	.841
2. 31-35	38	3.85	.976
3. 36-40	99	4.06	.720
4. 41-45	77	3.80	.892
5. 46-50	48	3.97	.554
6. 51+	26	4.04	.853
Total	323	3.98	.806

ANOVA						
Source of Variance	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>	Significant difference
Between Groups	5.729	5	1.146			
Within Groups	203.221	317	.641	1.787	.115	None
Total	208.950	322				

As seen in Table 12, when the ANOVA table related to the dimension of preparing the school for the change process was examined, there was no significant differences ($p = 0.115 > 0.05$) between the participants. Considering their perception levels, participants aged 25-30 ($\bar{X} = 4.21$) had the highest mean score.

Table 13. ANOVA Table By Participants' Seniority Considering The Dimension Of "Preparing The School For The Change Process"

Groups	<i>N</i>	\bar{X}	<i>SD</i>
1. 1-5 Years	41	4.32	.679
2. 6-10 Years	42	3.93	.977
3. 11-15 Years	80	3.84	.875
4. 16-20 Years	73	3.97	.739
5. 21+ Years	87	3.97	.723
Total	323	3.98	.806

ANOVA						
Source of Variance	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>	Significant difference
Between Groups	6.631	4	1.658			
Within Groups	202.319	318	.636	2.605	.036	1-3
Total	208.950	322				

As illustrated in Table 13, when the one-way variance analysis result was examined, there was a statistically significant difference between the mean scores of the groups ($p = 0.036 < 0.05$) in the dimension of preparing the school for the change process. As the significance value was $p = 0.036 < 0.05$, there was a need for the test of homogeneity of variances.

Table 14. Test Of Homogeneity Of Variances By Seniority Considering The Dimension Of “Preparing The School For The Change Process”

Levene’s Statistic	<i>df1</i>	<i>df2</i>	Sig.
3.145	4	318	0.015

According to Table 14, the homogeneity test indicated that the variances of the groups were non-homogeneous ($p = 0.015 < 0.05$). As the variances of the groups were not homogeneous, the results of Tamhane's T2 Post Hoc test for Multiple Comparisons (Equal Variances Not Assumed) were examined to determine which groups differed by seniority in the dimension of preparing the school for the change process.

Table 15. Table of Tamhane’s T2 By Seniority For The Dimension Of “Preparing The School For The Change Process”

(I) Years of Seniority	(J) Years of Seniority	Mean Difference	Sig. (p)
1. 1-5	2. 6-10	.397	.296
	3. 11-15	.487*	.010
	4. 16-20	.353	.110
	5. 21+	.357	.077
2. 6-10	1. 1-5	-.397	.296
	3. 11-15	.090	1.000
	4. 16-20	-.044	1.000
	5. 21+	-.040	1.000
3. 11-15	1. 1-5	-.487*	.010
	2. 6-10	-.090	1.000
	4. 16-20	-.135	.973
	5. 21+	-.131	.970
4. 16-20	1. 1-5	-.353	.110
	2. 6-10	.044	1.000
	3. 11-15	.135	.973
	5. 21+	.004	1.000
5. 21+	1. 1-5	-.357	.077
	2. 6-10	.040	1.000
	3. 11-15	.131	.970
	4. 16-20	-.004	1.000

A pairwise comparison of groups was made, and the mean differences between these compared groups are provided in Table 15. Asterisks (*) given next to these values indicate the presence of a significant difference between these pairs of mean scores. Values of $p < 0.05$ in pairwise comparisons indicate significant differences between the seniority groups. Considering the pairwise comparison of the mean differences in Table 8, there were significant differences between the participants having 1-5 and 11-15 years of seniority ($MD = 0.487^*$, $p = 0.010$). Participants with 1-5 years of seniority had a mean score of $\bar{X} = 4.32$, whereas those with 11-15 years of seniority had a mean of $\bar{X} = 3.84$.

4. DISCUSSION AND CONCLUSION

According to the perceptions of public basic education school administrators, the competency level of school administrators was high within the scale limits. As such, the basic education school teachers demonstrated a high level of perception per their score from the scale regarding this dimension.

Studies in the literature report similar findings (Argon & Özçelik, 2008; Yıldız, 2012; Ak, 2006; Helvacı, 2004). However, Sayracı and Gündüz (2018) found that according to the perceptions of school administrators, the sub-dimension indicating the school administrators' lowest competency level was the ability to determine the need for change in school.

There was no significant difference between the perceptions of the participants regarding the basic education school administrators' levels of competency in the dimension of "determining the need for change in school" by position.

However, there was a significant gender difference between the perceptions of the participants regarding the basic education school administrators' levels of competency in the dimension of "determining the need for change in school". In this study, male participants demonstrated higher perceptions of determining the need for change in school than female participants.

There was no significant difference between the perceptions of the participants regarding the competency levels of basic education school administrators in the dimension of "determining the need for change in school" according to their age. The study showed that participants aged 25-30 had higher perceptions of determining the need for change in school than those in other age groups.

According to the variable of seniority, there was a significant difference between the perceptions of the participants regarding the competency levels of basic education school administrators in the dimension of "determining the need for change in school". Further, there was a significant difference in perception levels between the participants with 1-5 and 11-15 years of seniority in this study.

According to the perceptions of public basic education school administrators, the competency level related to this dimension was high within the scale limits. As per the perceptions of teachers working in public basic education schools, their administrators' competency levels related to this dimension were high within the scale limits. Some studies in the literature have obtained similar findings (Yıldız, 2012; Yürek & Cömert 2021).

There was no significant difference in the perceptions of the participants regarding the competency level of basic education school administrators in the dimension of "preparing the school for the change process" per variable of position.

There was a significant gender difference in the perceptions of participants regarding the competency levels of basic education school administrators in the dimension of "preparing the school for the change process". Accordingly, male participants had higher perceptions of determining the need for change in school than female participants.

The participants' perceptions of the competency level of basic education school administrators in the dimension of "preparing the school for the change process" did not significantly differ by age. Within the research boundaries, the perceptions of participants aged 25-30 were higher in determining the need for change in school than those in other age groups.

There was a significant difference in the perceptions of participants regarding the competency levels of basic education school administrators in the dimension of “preparing the school for the change process” by the years of seniority. The study showed a significant difference in perception levels between participants with 1-5 and 11-15 years of seniority.

5. RECOMMENDATIONS

Based on the research findings, the following recommendations could be made:

In the appointment of administrators to basic education schools, knowledge and skills that can effectively bring about change in schools and manage change should be considered as an important criterion.

All employees, student parents, and school association members working in basic education schools should be made aware of helping school administrators in their efforts toward change and innovation.

School administrators in Turkey should be provided with the conditions to make changes or innovations, and their roles and responsibilities in this regard should be redefined.

The competencies of high school, preschool, and special education school administrators in change management should be evaluated, and their similarities or differences with basic education school administrators should be uncovered.

Qualitative and quantitative research should be conducted to determine the level of school administrators in change management, according to the teachers who were not included in the study due to the limitations of the research.

The economic, cultural, political, psychological, and sociological reasons for the success of school administrators working in developed countries that are successful in change management should be reviewed, and education and management policies should be produced in our country in this context.

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GENİŞLETİLMİŞ TÜRKÇE ÖZET

TEMEL EĞİTİM OKULU YÖNETİCİLERİNİN DEĞİŞİMİ YÖNETME YETERLİKLERİ (MERSİN İLİ AKDENİZ İLÇE ÖRNEĞİ)

GİRİŞ

Türkiye’de de özellikle 1980’li yıllardan sonra çağdaş yaşamın gerektirdiği ölçülere ulaşmak ve eğitimin niteliğini artırmak amacıyla eğitim sisteminde, “yeniden yapılanma”, “eğitim reformu”, “yeniden düzenleme” ya da “geliştirme” çabaları altında çeşitli değişim faaliyetleri içine girildiği gözlemlenmektedir. Milli Eğitim Bakanlığı’nın Teşkilat ve Görevleri Hakkında Kanun değişikliği çalışmaları; okul müfredatlarındaki değişimler; Toplam Kalite Yönetimine yönelik çalışmalar; okullarda bilgisayar kullanımının başlatılması, öğretmenlik ünvanlarında yapılmak istenen birtakım değişiklikler (öğretmen, uzman öğretmen, başöğretmen) gibi yapısal, teknolojik, insan ve amaçlar hedefler boyutunda birtakım değişikliğe neden olabilecek bazı girişimler gerçekleştirilmiş ya da gerçekleştirilmek istenmektedir (Kaptan, 2001: 298; Toklucu, 2001: 70; Toptan, 2001: 388; Türk, 1998: 253; Hesapçioğlu, 2003: 155).

Bugün eğitim alanında ortaya çıkan reform, okul geliştirme ya da yeniden yapılanma girişimleri, okullar üzerinde karar veren kişilere daha çok sorumluluk yüklemektedir. Okullardan beklentiler ve bununla birlikte okul müdürünün rolü de değişmektedir. Okul müdürünün rol ve sorumluluklarının sürekli değişime uğrayacağı ve asla değişmez bir prensip olarak kalmayacağı ortak bir görüş olarak değerlendirilmektedir (Helvacı, 2005: 9). Eğitimde başarılı bir biçimde değişme ve yenilik yapmak isteyen okul yöneticilerinin, değişim süreçlerini, okul örgütlerini örgütsel yönden tanımaları, okulları değişmeye yönelten güçleri, bu güçlerin örgütlerin hangi öğelerini etkileyip onları değişme gereksinimiyle karşı karşıya getirdiğini, değişim sürecinde işgörenleri anlamayı, değişime karşı neden ve nasıl direndiklerini ve bu direnmelere karşı nasıl stratejik bir yaklaşım sergileyecekleri, değişim modelleri, değişim programları ve uygulamaları konularında yeterli bilgi ve beceriye sahip olmaları gerekmektedir. Bu bilgi ve beceriler değişimi yönetme kapsamını oluşturmaktadır ve okul yöneticilerinin birer değişim yöneticisi, dönüşümcü lider, değişim lideri ya da değişim uzmanı olması beklenmektedir (Alıç,1990: 12; Çalık, 1997: 53; Karip, 1996: 245). Bu açıdan eğitimde değişimin nasıl yönetileceği hakkında bilgi ve deneyim birikimine gereksinim duyulmaktadır. Bu nedenle, değişimin, eğitim sisteminde ya da okullarda nasıl yönetileceği, araştırılması ve biçimlendirilmesi gereken önemli bir konudur. Çünkü değişim belli bir sistematiği olan bir süreçtir (Erdoğan, 2002: 124; Özdemir, 1995:159; Tanrıoğen, 1995:138; Çelikten, 2000: 14; Alkan, 1992: 76; Alıç, 1990: 65). Bu araştırmanın amacı Mersin İli

Akdeniz İlçesi'nde Milli Eğitim Bakanlığına bağlı resmi temel eğitim okullarında görev yapan okul yöneticilerinin değişimi yönetme kapsamında sahip oldukları yeterlikleri, okul yöneticilerinin ve öğretmenlerin algılarına göre değerlendirmektedir.

Bu doğrultuda araştırmanın Problem cümlesi ve alt problemler şu şekildedir:

Temel eğitim okullarında görev yapan okul yöneticilerinin değişimi yönetme kapsamında sahip oldukları yeterlikleri, okul yöneticilerinin ve öğretmenlerin algılarına göre düzeyleri nasıldır?

Alt problemler

Temel Eğitim Okulu Yöneticilerinin;

1. “Okulun Değişim İhtiyacını Belirleme” boyutuna ilişkin yeterlikleri ve
2. “Okulu Değişim Sürecine Hazırlama” boyutuna ilişkin yeterlikleri ne düzeydedir?

YÖNTEM

Bu bölümde araştırmanın modeline, evren ve örnekleme, ölçme aracının geliştirilmesine, verilerin toplanması ve çözümlenmesine ilişkin bilgilere yer verilmiştir.

Araştırmanın Modeli

Milli Eğitim Bakanlığına bağlı resmi temel eğitim okulu yöneticilerinin “değişimi yönetme yeterlikleri” bakımından değerlendirilmesini amaçlayan bu araştırma karşılaştırmalı türden tarama modelindedir.

Çalışma Grubu

Araştırmanın çalışma grubunu; Mersin İli Akdeniz İlçesi'nde Millî Eğitim Bakanlığı'na bağlı 90 temel eğitim okulunda, 2020-2021 öğretim yılında görev yapan 101 öğretmen ve 222 okul yöneticisi olmak üzere toplam 323 kişi oluşturmaktadır.

Veri Toplama Aracı

Araştırmada kullanılan veri toplama araçları, ölçülmek istenen değişkenlere göre belirlenmiştir. Araştırmada veri toplamak amacıyla kullanılan form, iki bölümden oluşmaktadır. Birinci bölümde, okul yöneticisi ve öğretmenlere ait kişisel bilgilerin sorulduğu Kişisel Bilgi Formu yer almaktadır. İkinci bölümde, toplam 67 maddeden ve 4 alt boyuttan oluşan 5’li likert tipi okul yöneticilerin değişimi yönetme yeterliliklerini değerlendirme anketi yer almaktadır.

Verilerin toplanması

Mersin İli Merkez İlçesi sınırları içerisinde Milli Eğitim Bakanlığı'na bağlı resmi temel eğitim okullarına (ilkokul-ortaokul) covid-19 salgın hastalık nedeniyle ölçek google.doc. formlarda online

olarak hazırlanarak çeşitli sosyal haberleşme ve sms yoluyla anket formları okul yöneticilerine ve öğretmenlere ulaştırılmıştır.

Verilerin analizi

Temel eğitim okul yöneticilerinin değişimi yönetme yeterlikleri düzeylerine ilişkin değerlendirmeler arasında görev ve cinsiyet değişkenine bağlı olarak anlamlı bir farklılığın olup olmadığını belirlemek amacıyla t-testi uygulanmıştır. Grup ortalama puanları arasındaki farkların test edilmesinde 0.05 anlamlılık düzeyi esas alınmıştır. Temel eğitim okul yöneticilerinin değişimi yönetme yeterlikleri düzeylerine ilişkin değerlendirmeler arasında yaş ve kıdem değişkenine bağlı olarak anlamlı bir farklılığın olup olmadığını belirlemek amacıyla Anova uygulanarak tablolar arasında karşılaştırma yapılmıştır.

BULGULAR

Katılımcıların “Okulda Değişim İhtiyacını Belirleme” Boyutuna ve Yeterliklerine İlişkin Algılamaları ile İlgili, Bulgular ve Yorumları

Genel toplam ortalamasına göre okul yöneticilerin algı düzeyleri (\bar{X} :4,05 - SS: 0,635), öğretmenlerin algı düzeyleri (\bar{X} :3,96 - SS: 0,798) ile birlikte genel toplam katılımcı düzeylerinin (\bar{X} :3,98 - SS: 0,751) “çok” düzey aralığındadır. Öğretmen ve okul yöneticilerinin okulda değişim ihtiyacını belirleme boyutu ile ilgili görev değişkenine göre sig ($p>0,050$) değerine bakıldığında aralarında anlamlı bir fark bulunmamıştır ($t=0,964$ - $p=0,336$).

Katılımcıların “Okulu Değişim Sürecine Hazırlama” Boyutuna ve Yeterliklerine İlişkin Algılamaları ile İlgili, Bulgular ve Yorumları

Katılımcıların görev dağılımına göre okulu değişim sürecine hazırlama boyutunda genel toplam ortalamasına göre okul yöneticilerin algı düzeyleri (\bar{X} :4,06 - SS: 0,665), öğretmenlerin algı düzeyleri (\bar{X} :3,94 - SS: 0,861) ile birlikte genel toplam katılımcı düzeylerinin (\bar{X} :3,98 - SS: 0,806) “çok” düzey aralığındadır. Öğretmen ve okul yöneticilerinin okulu değişim sürecine hazırlama boyutu ile ilgili görev değişkenine göre sig ($p>0,050$) değerine bakıldığında aralarında anlamlı bir fark bulunmamıştır ($t=1,221$ - $p=0,223$).

TARTIŞMA VE SONUÇ

Resmi temel eğitim okul yöneticilerinin algılarına göre okul yöneticilerinin yeterlik düzeyi ölçek sınırları içerisinde “çok” düzeyine denk gelmektedir. Resmi temel eğitim okullarında görev yapan öğretmenlerin algılarına göre ise, yöneticilerinin bu boyuta ilişkin yeterlik düzeyi, ölçek sınırları içerisinde “çok” düzeyine denk gelmektedir. Alan yazında benzer bulgulara ulaşan çalışmalar bulunmaktadır. (Argon ve Özçelik, 2008; Yıldız, 2012; Ak, 2006; Helvacı, 2004). Buna karşın Sayracı ve Gündüz’ün (2018) çalışmalarında okul yöneticilerinin algılarına göre okul yöneticilerinin yeterlik düzeyinin en az olduğu alt boyutun okulda değişiklik gerekliliğini

belirleme yeterliđi olduđu bulunmuřtur. Katılımcıların, görev deđiřkenine gre temel eđitim okulu yneticilerinin “okulda deđiřim ihtiyaını belirleme” boyutundaki yeterlik dzeyine iliřkin algıları arasında anlamlı bir fark yoktur. Katılımcıların, görev deđiřkenine gre temel eđitim okulu yneticilerinin “okulu deđiřim srecine hazırlama” boyutundaki yeterlik dzeyine iliřkin algıları arasında anlamlı bir fark yoktur. Katılımcıların, cinsiyet deđiřkenine gre temel eđitim okulu yneticilerinin “okulu deđiřim srecine hazırlama” boyutundaki yeterlik dzeyine iliřkin algıları arasında anlamlı bir fark vardır. Arařtırma sınırları ierisinde erkek katılımcıların kadın katılımcılara gre okulda deđiřim ihtiyaını belirlemeye ynelik algıları daha yksektir.

HOW ARE SOCIAL VALUES DEPICTED IN MIDDLE SCHOOL MATHEMATICS CURRICULA AND TEXTBOOKS?

Fırat KILAVUZ¹

Fazilet KARAKUŞ²

Geliş Tarihi/Received: 06.05.2023 Elektronik Yayın / Online Published: 20.06.2023

DOI: 10.48166/ejaes.1293285

ABSTRACT

This study investigates the social values incorporated into middle school mathematics curricula and textbooks. The qualitative research methodology was employed, specifically document analysis (i.e., document scanning). Descriptive analysis techniques were used to examine four textbooks - one from each grade - to identify social values. To ensure the reliability and validity of the study, two experts were included in the analysis. In the qualitative data analysis, the agreement rate between the coders was 87%. The results of the analysis showed that only a small percentage of middle school mathematics curriculum content is classified as valuable social values. Specifically, 9.25% of fifth-grade achievements, 5.08% of sixth-grade achievements, 3.92% of seventh-grade achievements, and 3.84% of eighth-grade achievements were classified as valuable social values. Although it was discovered that social values were mainly included in the fifth-grade mathematics textbook, they were also found in the textbooks for grades six through eight. Furthermore, the results revealed that responsibility was the most commonly included social value in the textbooks, while universalism, sharing, and respect were the least frequently included. Based on these findings, suggestions were provided for incorporating social values into the mathematics curriculum and textbooks.

Keywords: Value; social value; curriculum; outcome

¹Teacher, Niğde Imam Hatip Secondary School, Niğde, Türkiye, firatkilavuz51@gmail.com, ORCID: 0000-0003-3420-0580

²Associate Professor, Mersin University, Mersin, Türkiye, kkfazilet@gmail.com, ORCID: 0000-0002-6455-9845

ORTAOKUL MATEMATİK ÖĞRETİM PROGRAMI VE DERS KİTAPLARININ SOSYAL DEĞERLER AÇISINDAN İNCELENMESİ

ÖZET

Bu çalışmanın amacı ortaokul matematik öğretim programı ve ders kitaplarında yer verilen sosyal değerleri incelemektir/analizini yapmaktır. Bu çalışmada nitel araştırma yöntemlerinden doküman analizi (belgesel tarama) kullanılmıştır. Ortaokul matematik öğretim programının giriş, açıklama, kazanımları ile MEB'in yayınladığı ortaokul matematik ders kitaplarının her sınıfından birer kitap olmak üzere dört kitap betimsel analiz tekniği kullanılarak sosyal değerler açısından incelenmiştir. Araştırmanın geçerlik ve güvenilirliğini sağlamak için araştırmacı haricinde eğitim programları ve öğretim alanında iki uzman analize dâhil edilmiştir. Nitel verilerin analizinde kodlayıcılar arasındaki uyum oranı %87 olarak tespit edilmiştir. Araştırma sonucunda ortaokul matematik öğretim programında yer alan kazanımlar da beşinci sınıf düzeyindeki kazanımların %9.25'inde, altıncı sınıf kazanımların %5.08'inde, yedinci sınıf kazanımların %3.92'sinde, sekizinci sınıf kazanımların %3.84'ünde değer yer aldığı tespit edilmiştir. Ayrıca matematik kitaplarındaki sosyal değerlerin en fazla beşinci sınıf matematik ders kitabında yer aldığı tespit edilirken, beşinci sınıf, altıncı sınıf, yedinci sınıf ve sekizinci sınıf sırasıyla takip ettiği sonucuna ulaşılmıştır. Ortaokul matematik ders kitaplarında en fazla yer alan sosyal değer sorumluluk iken en az yer alan sosyal değerler ise evrenselcilik, paylaşmak ve saygı olarak belirlenmiştir. Elde edilen sonuçlar ışığında matematik öğretim programında ve ders kitaplarında sosyal değerlerin kullanımına yönelik önerilerde bulunulmuştur.

Anahtar kelimeler: Değer; sosyal değer; öğretim programı; kazanım

1. INTRODUCTION

Aydurmuş, Kayan, and Arslan (2022) argue that the primary goal of teaching mathematics is to equip students with the necessary skills to solve real-life problems through active learning. Mathematics education helps students comprehend mathematical concepts and systems, apply them in everyday situations, and gain the knowledge and skills required for a good education. Uysal and İncikabı (2018) found that cognitive domains are the most commonly emphasized in mathematics education curricula, followed by domain-specific skills and general objectives for affective skills.

Although mathematics education and social values are often viewed as unrelated concepts, researchers acknowledge the importance of values education in mathematics (Bishop, 1999). In today's world, it is crucial to include social values in mathematics curricula and textbooks to foster children's value acquisition (Berkowitz, 2011). Children can internalize this information by reading textbooks and learning the social values embedded in them (Gül, 2017). Textbooks can be a tool for promoting social values, while curricula can include achievements that teach students about different values. By enriching the achievements in textbooks and curricula with social values, they can become powerful instruments for students to learn about the values of the society in which they live (Tanrıöver, 2003; Körükçü, Kapıkıran & Aral, 2016) To effect societal change and development, children must demonstrate the values they have acquired at home and school in real-life situations. Thus, educational systems aim to cultivate students who can effectively demonstrate their social values in their daily lives. To this end,

educational programs are designed to include exercises that enable children to apply the values they have learned in practical settings. The goal is not only to educate academically successful students, but also to develop individuals with positive character traits.

However, the degree to which values are incorporated into educational programs varies among countries. Some countries, such as Malaysia, China, and Russia, explicitly include social values in their educational programs and curricula. In contrast, social values are implicit in educational programs in countries like Sweden and South Korea (Öztürk et al., 2016). In Turkey, social values were only implicitly included in educational programs before 2005. However, after 2005, they were explicitly integrated into the curriculum (Bacanlı, 1999; Yaşaroğlu, 2013). Since 2018, the Ministry of National Education has increasingly included values in the curriculum, recognizing that social values continue to develop throughout one's lifetime. Including ten core values in the curriculum, such as justice, friendship, honesty, self-control, patience, respect, love, responsibility, patriotism, and helpfulness, has led to the more explicit inclusion of social values in mathematics curricula and textbooks. These values have now become an integral part of the curriculum, and serve as a foundation for lower-level values.

According to research in the literature, social values have been studied by researchers (Öztürk et al., 2016; Yaman, Taflan, Çolak, 2009; Ersoy, Şahin, 2012). However, these studies mainly focus on verbal course areas, and there is limited research on numerical course areas (Öztürk et al., 2016; Yaman, Taflan, Çolak, 2009). Some researchers believe mathematics is not connected to social values (Deniz, 2018). However, this is not accurate as mathematics is a field that contains values, such as rationality, consistency, creativity, openness, flexibility, and systematic work (Dede, 2007). Bishop (1999) also concluded that mathematics contains values. Despite this, research on the relationship between social values and performance in mathematics is limited (Dede, 2007). Dede's (2007) study aimed to identify the values taught in the mathematics classroom, classify them, and explain how to teach them. Although this area has limited research, it is essential to consider whether social values should be included in learning outcomes.

After reviewing the literature, it was found that research on values in mathematics needs to be improved. Özkaya and Duru (2020) stressed the significance of the renewed 2017 middle school mathematics curriculum in textbooks. Their analysis revealed that most of the equality values were included in all textbooks, while justice, sharing, saving, and aesthetics were the least represented. Şahin and Tuğrul (2020) explored how social values are incorporated into primary school mathematics textbooks according to grade level, learning area, and type of publisher. They discovered that the fewest social values were present in the first grade, while social values were equally distributed in the other three grades. Karaca and Uzunkol (2019) examined the values in mathematics textbooks and workbooks for the 3rd and 4th grades. They found that the values included in the third-grade mathematics textbook were 5.8% and 1.9% in the fourth-grade textbook. Although recent literature has seen an increase in studies on value education, research in the field of mathematics education has been primarily focused

on primary school textbooks (Karaca, Uzunkol, 2019; Şahin, Tuğrul, 2020), and there has been no study that evaluates middle school mathematics curricula and textbooks in terms of social values (Özkaya, Duru, 2020). There are many studies on values education in general conducted abroad, but the examination of textbooks in terms of values (Gebregeorgis, 2017; McMillan, Schumacher, 2010) is limited. Therefore, this study aims to investigate social values in middle school mathematics curricula and textbooks.

The identification of values in mathematics education and textbooks can be beneficial for values education practitioners and increase awareness of studies that contain values. The study results can answer questions about the inclusion of social values in the curriculum, learning outcomes, and mathematics textbooks. This information can be valuable for mathematics curriculum practitioners, teachers, and textbook authors. Furthermore, the findings can contribute to the literature by adding new knowledge about values in mathematics education.

2. METHOD

This study utilized the qualitative research method of document analysis, specifically documentary scanning. This method allows for the analysis of written, oral, and visual materials depending on the research goals (McMillan & Schumacher, 2010). Written documents are especially useful for providing information on a wide range of topics, making document analysis an effective research model for qualitative research. Document analysis involves analyzing materials containing information about the research subject and collecting data (Yıldırım & Şimşek, 2006). In this study, the quality and quantity of values education in the curriculum and mathematics textbooks were determined using document analysis to study the middle school mathematics curriculum and textbooks. Yıldırım and Şimşek (2011) noted that it is impractical to examine all documents in document analysis research and suggested that a sample could be taken from the available data set. Therefore, this study examined the mathematics textbooks published by the Ministry of National Education that are currently in use in schools, while excluding books published by private publishers.

2.1. Data Collection Process

The data collection process involved a literature search on the topic, reviewing national and international sources, and selecting the research model to be used. Next, the researcher and two experts reviewed the curriculum and mathematics textbooks separately for social values, and their latest findings were compared. The research documents were selected from the middle mathematics textbooks designated by the Ministry of National Education for teaching in middle schools during the 2021-2022 academic year, using the purposive sampling method to determine four texts from each level. While the researcher retrieved the physical copies of the research books from the schools, the PDF files of the

mathematics textbooks were downloaded from www.eba.gov.tr. The three coders' analysis of the mathematics curriculum and textbooks took approximately three months.

2.2. Analysis of Data

In this study, the descriptive analysis technique was employed to examine the acquisitions in middle school mathematics classes and the social values in middle school mathematics textbooks. With this technique, the researcher can analyze the data using pre-existing codes (Yıldırım & Şimşek, 2011). The social values investigated in this study include collaboration, helpfulness, universalism, responsibility, respect, sharing, equality, and love. To develop some of the values and indicators, three mathematics teachers and one mathematics education expert were consulted using the table "Values in the Renewed Curriculum and Attitudes and Behaviors Related to Values," published by the Ministry of National Education in 2018. The indicators and explanations of these values were used to guide the researchers in their data analysis.

Table 1. Values And Their Indicators

Values	Indicators
Collaborator	Likes to work in groups, fulfills a task
Helpfulness	Be generous, cooperate, be compassionate, be hospitable, share
Universalism	Cross-cultural harmony, everyone is equal
Responsibility	Being responsible to himself, his environment, his country, his family; keeping one's word, being consistent and reliable, taking on the consequences of one's actions
Respect	Being humble, treating others as one would like to be treated, valuing other people's personalities, observing the position, characteristics and condition of the interlocutor
To share	Equal distribution, distribution,
Equality	Different Representations, Expression in Terms, Analysis, Modeling, Conversion of Units
Love	Giving importance to family unity, making sacrifices, trusting, being compassionate, being loyal

The classification of social values in the literature played a significant role in this study's limitation (Nelson, 1974, as cited by Naylor & Diem, 1987; Rokeach, 1973; Schwartz, 1992; Spranger, 1928; Tillman, 2000; Şahin, 2019). To ensure the validity and reliability of the study, two experts, along with the researcher, independently performed the coding task. The researcher and two experts were doctoral students in educational programs and teaching and had prior experience in descriptive analysis studies. They evaluated the textbooks and curriculum separately, and the similarities and differences of the coding were compared and evaluated. After all these evaluations, the coding reliability index was calculated. Yıldırım and Şimşek (2011) suggest that the coding reliability index determined in such multi-coding studies should be at least 70%. The researchers calculated this ratio using Miles and Huberman's (1994) reliability formula (consensus/agreement + disagreement). In this study, the coding reliability index was 87%. After coding the data separately, the researchers discussed their different

scores and indicators and reached a consensus on the different codings. In other words, the data analysis was completed only after the three coders agreed on all the codings.

3. FINDINGS

The results of the research are presented in subheadings.

Findings for the first sub-problem

The middle school mathematics curriculum values, are included in the introduction and explanation sections (Table 3.1).

Table 2. Values In The Introduction And Explanation Section Of The Middle School Mathematics Curriculum

Grade Level	Embedded social values
5,6,7,8	Justice, Friendship, Integrity, Self-Control, Patience, Respect, Love, Responsibility, Patriotism, Benevolence

Table 2. shows that since 2018, the Ministry of National Education has included ten root values in the introduction and explanation part of the middle mathematics curriculum. In addition to these ten root values, the Ministry of National Education also includes the sub-values of the ten root values in its curriculum. The social values in the 5th-grade mathematics curriculum are shown in Table 3.

Table 3. Social Values In The 5th Grade Mathematics Curriculum

Unit	Earnings	Social Value
Unit 1: Natural Numbers	M.5.1.1.2. Specifies the divisions, digits, and place values of numbers of up to nine digits. In cases of associating these numbers with real life, studies on comparison and interpretation are included.	Responsibility
Unit 1: Natural Numbers	M.5.1.2.8. Interprets the remainder in problem situations related to division. Depending on the problem situation, the remainder is neglected or expressed as a fraction. For example, when dividing 11 apples equally between 2 people, the remaining number of apples is expressed as a fraction to find how many apples will fall on 1 person.	Equality, Sharing
Unit 1: Natural Numbers	M.5.1.2.9. By understanding the relationship between multiplication and division operations, it finds the elements (multiplier, quotient or divisor) that are not given in the operations. For example, Ahmet, who receives an allowance of 5 TL every week, has saved his money for 7 weeks. During this time, he bought a flute with all the money he had saved. How much did Ahmet buy the flute for?	Frugality
Unit 5: Data Processing	M.5.3.1.1. Creates research questions that require data collection. a) To create a research question "What are the favorite fruits of students in a class is a research question, but the question of what a person's favorite fruit is is not a research question." examples such as.	Love
Unit 5: Data Processing	M.5.3.1.1. Creates research questions that require data collection. b) Environmental awareness, frugality, cooperation, avoidance of waste, etc. topics are covered	Environmental awareness, benevolence, sharing, thrift, avoiding waste

Table 3 shows that social values were incorporated into five out of 54 fifth-grade middle school mathematics curricula. Social values were included in three units of the first unit of study, the natural number unit, and in two units of study in the fifth unit, the data processing unit. However, social values were not included in the other units. In four out of the five acquisitions where social values are included, the social values are mentioned discreetly in the sentence, while in the collection of "the issues are included," social values such as responsibility, equality, love, sharing, benevolence, environmental awareness, frugality, and waste prevention are incorporated into the fifth-grade mathematics curriculum of a middle school.

In the 5th-grade mathematics curriculum, Table 4. compares gains with social value to those without. The social values in the 6th-grade mathematics curriculum are also shown in Table 4.

Table 4. Social Values In The 6th-Grade Mathematics Curriculum

Unit	Earnings	Social Value
Unit 3: Ratio	M.6.1.7.2. In cases where a whole is divided into two parts, it determines the ratio of two parts to each other or each part to the whole; in problem situations, when one of the ratios is given, it finds the other. Example situations: If the number of girls in a class is equal to the number of boys, what is the ratio of the number of girls to the class size?	Equality
Unit 3: Ratio	M.6.1.7.3. It determines the ratio of two multiplicities of the same or different units to each other. For example, the ratio of the number of plastic caps collected by class 6A to the number of plastic caps collected by class 6B is written as 180 pieces 120 pieces = 3 2, and this ratio is unitless.	Responsibility

Table 4 illustrates that social values were incorporated into only 2 out of 59 acquisitions in the sixth-grade middle school mathematics curriculum. Social values were included in two learning units in the third unit, the rate unit, and one learning unit in the fourth unit, the data processing unit. Social values were not explicitly mentioned in the sixth-grade middle mathematics curriculum learning units but were surreptitiously mentioned in the sentence. For instance, the concept of responsibility was not directly mentioned in the learning units, but examples such as plastic lid collection were given to understand this value. Overall, the achievements of the sixth-grade mathematics curriculum at the middle level gave a small place to social values. The sixth-grade middle school mathematics curriculum included the social values of responsibility (once), equality (once), and love (once)."

The social values in the 7th-grade mathematics curriculum are listed in Table 5.

Table 5. Social Values In The 7th-Grade Mathematics Curriculum

Unit	Earnings	Social Value
Unit 4: Ratio and Proportion	M.7.1.4.3. Examines real-life situations and decides whether two multiplicities are proportional. a) It is emphasized that the equality of two ratios is called proportion.	Equality
Unit 3: Algebraic Expressions	M.7.2.1.3. Expresses the rule of the number patterns with a letter, and finds the desired term of the pattern whose rule is expressed with a letter. Example of daily life situation: Emine, who started to save 7 liras in the first week, adds 5 liras to her wallet every subsequent week. Indicate the relationship of the money in the wallet with the number of weeks as an algebraic expression.	Frugality

Table 5 indicates that social values were incorporated into only 2 out of the 51 learning outcomes in the seventh-grade middle school mathematics curriculum. Social values were included in one outcome in the third unit, algebraic expressions, and one outcome in the fourth unit, ratio. Social values were not explicitly mentioned in the seventh-grade middle school mathematics curriculum but were only subtly alluded to in a sentence. For instance, the value of frugality was not explicitly mentioned but was indicated through the use of expressions. Generally, social values were given less importance in the seventh-grade middle school mathematics curriculum. The social values of responsibility and equality were included only once in the seventh-grade mathematics curriculum.

The social values in the 8th-grade mathematics curriculum are given in 6.

Table 6. Social Values In The 5th And 8th-Grade Mathematics Curriculum

Unit	Earnings	Social Value
Unit 3: Probability of Simple Events	M.8.5.1.2. Distinguish the events with “more”, “equal”, and “less” probability and give examples. For example, a name randomly drawn from a list of all teachers and students in a school is more likely to belong to the student, 15 of whom are male. Studies are conducted stating that the probability of a randomly selected person from a class consisting of 15 students and 15 female students is equal to the probability of being a female student.	Equality
Unit 5: Polygons	M.8.3.2.3. It creates the appearance of polygons as a result of translations and reflections. c) Examples from our traditional arts (tile, ceramics, weaving, etc.) are also taken into account.	Responsibility

In this study, social values were included in 2 of the 52 learning outcomes in the eighth-grade middle school mathematics curriculum (see Table 6). Social values were included in an outcome in the

third unit, probability of occurrence of simple events, and in an outcome in the fifth unit, the unit on polygons. In the acquisitions in the eighth-grade middle mathematics curriculum, social values are not explicitly stated but are secretly stated in the sentence. In general, social values are given a small place in the achievements of the eighth-grade middle school mathematics curriculum. The social values of responsibility and equality were included once in the eighth-grade middle school mathematics curriculum.

Table 7. Outcomes With Social Value In The Middle Mathematics Curriculum

Grade Level	Number of Acquisitions Involved in Social Value	Number of Non-Social Value Gains	Percentage of Gains Involved in Social Value
5	5	49	%9.25
6	3	56	%5.08
7	2	49	%3.92
8	2	50	%3.84
Total	12	204	%5.88

When comparing the inclusion of social values in the middle school mathematics curriculum, it is evident that the fifth grade has the highest percentage of social values at 9.25%, followed by the sixth grade at 5.08%, and the seventh grade at 3.92%. The eighth grade has the lowest percentage of social values incorporated into the mathematics curriculum at 3.84%. The analysis shows that the percentage of social values in the curriculum decreases as the grade level increases. In terms of the specific social values included in the curriculum, the social value of responsibility ranks first, followed by equality and equity, which are related to responsibility, and then by the social value of love.

Findings For The Second Sub-Problem

This part of the study is about the social values in the middle mathematics textbook. The frequency of social values in the 5th-grade mathematics textbook is given in Table 8.

Table 8. Frequency Table Of Social Values In A 5th-Grade Mathematics Textbook

Unit	Section									Total
		Cooperative	Benevolence	Universalism	Responsibility	Respect	Sharing	Equality	Love	
Unit 1	Natural numbers	9	4	1	4	1	1	-	-	20
	Operations with natural numbers	3	2	4	3	-	4	-	-	16
Unit 2	fractions	-	2	-	-	-	1	3	-	6
	Operations with fractions	1	1	1	2	-	-	1	-	6
Unit 3	Decimal notation	2	-	2	2	2	-	-	-	8
	Percentages	1	-	1	3	1	-	1	3	11
Unit 4	Basic geometric concepts	2	1	1	3	1	-	-	-	8
	Triangles and quadrilaterals	-	-	-	-	-	-	-	1	1
Unit 5	Data processing	1	1	1	1	-	1	1	2	8
	Measuring length and time	1	-	-	2	1	-	-	2	6
Unit 6	Measuring area	1	-	1	-	-	-	-	-	2
	Geometric objects	-	-	-	-	-	-	1	1	2
Total		21	11	12	20	6	7	7	9	94

Table 8 reveals that certain values, such as cooperation (21), responsibility (20), and universalism (12), are the most prevalent in the fifth-grade mathematics textbook. Conversely, sharing (7), equality (7), and respect (6) are the least emphasized social values in the textbook. When considering units and sections, the results indicate that social values have a limited presence in the fifth-grade textbook, with the highest occurrences being in the first unit's natural number section (20) and operations with natural numbers (16) and percentages (11) in the third unit. In contrast, social values occupy a more significant place in only two units, namely measurement (2) and geometric objects (2) in the sixth unit and the section on triangles and quadrilaterals (1) in the fourth unit. Table 1 shows that social values are less frequent in the fourth, fifth, and sixth units where geometry topics are included in the mathematics textbook compared to other units.



Figure 1. The fifth-grade textbook includes an example at the beginning of the unit.

In figure 1, the example at the beginning of the unit in the fifth grade textbook is given.

“Failure to take adequate safety precautions causes many occupational accidents in the construction industry. Some of these work accidents are caused by improperly constructed scaffolds. In order to reduce occupational accidents, scaffolding should be established by the standards. Examine the scaffolding on the right. Have you seen similar piers around you? What do you think about whether they are safe?”

When examined in Figure 1 above for an example that includes the value of responsibility, the fifth-grade textbook generally begins with examples that arouse students' curiosity and teach them social values at the beginning of the unit.

In figure 2, the example of exercise in the fifth grade mathematics book is given.

“Failure to take adequate safety precautions causes many occupational accidents in the construction industry. Some of these work accidents are caused by improperly constructed scaffolds. In order to reduce occupational accidents, scaffolding should be established by the standards. Examine the scaffolding on the right. Have you seen similar piers around you? What do you think about whether they are safe?”

Figure 2. Example of exercise in the fifth-grade mathematics textbook is given.

Figure 2 when examined, the mathematics textbook usually includes questions incorporating social values into the practice questions.

In Table 9, the weight of the social values in the 6th grade mathematics lessons is also given.

Table 9. Frequency Table Of Social Values In The 6th Grade Mathematics Textbook

Unit	Section									Total
		Cooperative	Benevolence	Universalism	Responsibility	Respect	Sharing	Equality	Love	
Unit 1	Natural numbers	-	-	-	5	1	1	2	3	12
Unit 1	Operations with natural numbers	-	1	1	-	1	-	2	-	5
		-	1	-	1	-	-	-	1	3
Unit 2	Fractions	1	1	-	1	1	3	3	1	11
Unit 2	Operations with fractions	2	2	1	-	2	-	2	2	11
Unit 3	Decimal notation	-	1	-	4	1	1	2	3	12
Unit 3	Percentages	-	-	-	1	1	1	1	-	4
Unit 4	Basic geometric concepts	1	-	-	1	1	1	1	2	7
Unit 4	Triangles and quadrilaterals	1	-	-	-	-	-	-	1	2
		1	-	1	2	-	1	2	1	8
Unit 5	Data processing	-	-	-	1	1	-	-	-	2
Unit 5	Measuring Length and Time	-	1	-	1	1	-	-	-	3
Unit 6	Measuring area	-	-	-	-	-	-	-	-	0
Unit 6	Geometric objects	-	-	-	2	-	-	1	1	4
		-	-	1	1	-	-	-	-	2
Total		6	7	4	20	11	8	16	16	91

Table 9 shows that values such as responsibility (20), equality (16), and love (16) are the most commonly included social values in the sixth-grade mathematics textbook. On the other hand, universalism (4), cooperation (6), helpfulness (7), and sharing (8) are the least frequently included social values. In terms of units and sections, social values are rarely included in the fifth unit, which covers measurement (3) and angles (2), and the sixth unit, which covers circle (0), geometric objects (4), and liquid measurement (2). However, social values are given more space in operations with natural numbers (12) and second integers (11) and percentages in the first unit of the sixth-grade mathematics textbook. Compared to the fifth and sixth units, which contain geometry topics, social values are less frequent in

other units. It's worth noting that social values are not included in the first part of the circle, which is covered in the sixth unit.

Hazır mıyız?

Sağlık hizmeti veren kuruluşlarda bazı bireylerin hizmetlerden öncelikli olarak yararlanma hakkı vardır. Muayene olmak için sıra bekleyen hamile, engelli, 65 yaş üstü ve 7 yaş altı bireylerden birinci öncelik engellilerde, ikinci öncelik hamilelerde, üçüncü öncelik 65 yaş üstü bireylerde, dördüncü öncelik ise 7 yaş altı bireylerdedir.

Günlük hayatımızda yapmış olduğumuz birçok işlemden bir öncelik sırası vardır. Benzer şekilde matematikte de yaptığımız işlemlerde öncelik sırasını düşününüz ve açıklayınız.




Figure 3. An Example Of The Beginning Of A Unit In A Sixth-Grade Mathematics Textbook

Figure 3. When examined, it is clear that the value of responsibility is included. The figure above shows examples of the social value at the beginning of the unit in the sixth-grade textbook, as in the fifth-grade mathematics textbook.

An example from the geometry section of the sixth-grade mathematics textbook is shown in Figure 4. and is also presented.

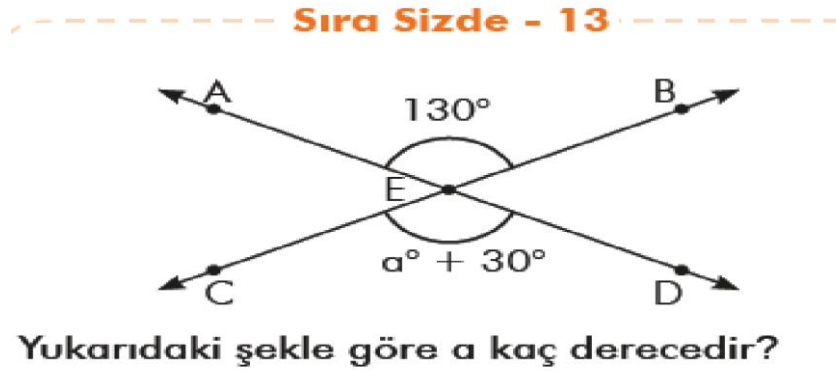


Figure 4. An Example From The Geometry Section Of The Sixth-Grade Mathematics Textbook

An example from the geometry section of the sixth-grade mathematics textbook is shown in Figure 5 and is also presented.

Birlikte Öğrenelim

Yandaki ABCD bir paralelkenardır. A noktasında bulunan bir karınca en kısa yolu kullanarak BC kenarında bulunan yuvalardan birine gidecektir. Karıncanın gidebileceği yolları çizerek en kısa olan yolu belirleyelim.

Yandaki şekilde A noktasından yuvalara giden doğru parçaları çizdiğimizde en kısa yolun A noktasından BC kenarına indirilen dikme olan 1. yuvaya giden yol olduğunu görürüz.

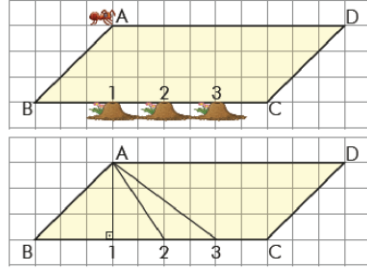


Figure 5. An Example From The Geometry Section Of The Sixth-Grade Mathematics Textbook

Figure 5 looking at the examples and questions about geometry in the sixth-grade mathematics textbook, we conclude that there are generally no social values and that there are expressions that contain short operations, as seen in the examples.

The frequency of social values in the 7th-grade mathematics textbook is shown in Table 10.

Table 10. Frequency Table Of Social Values In The Mathematics Textbook Of The 7

Unite	Section									Total
		Cooperative	Benevolence	Universalism	Responsibility	Respect	Sharing	Equality	Love	
Unit 1	Integers	-	-	1	4	-	-	-	-	5
Unit 1	Rational numbers	2	1	-	1	1	3	3	-	11
Unit 2	Rational Numbers Operations	-	1	-	-	1	1	1	-	6
Unit 2	Algebraic Expressions	-	-	1	-	-	-	-	-	1
Unit 3	Equation and Equation	2	1	-	1	-	1	3	-	8
Unit 3	Ratio and Proportion	2	1	1	1	1	1	4	2	13
Unit 4	Percentages	1	-	-	3	-	-	5	-	9
Unit 4	Lines and Angles	-	-	2	-	-	-	-	-	2
Unit 5	Polygons	1	-	1	-	-	-	-	1	3
Unit 5	Data analysis	-	-	-	1	-	-	-	-	1
Unit 6	View of Objects from Different Sides	-	-	-	-	-	-	-	-	0
Total		8	4	6	11	3	6	16	3	57

Table 10 indicates that the seventh-grade textbook incorporates more social values, such as equality (16) and responsibility (11), compared to other textbooks. In contrast, social values like

benevolence (4), love (3), and respect (3) are less common in the seventh-grade textbook. The seventh-grade textbook devotes less space to social values in the first unit (5), lines and angles (2), and polygons (3) of the fifth unit, data analysis (1) of the sixth unit, and looking at objects from different perspectives (0). Conversely, the ratio and proportion (13) and percentages (9) sections of the fourth unit of the seventh-grade mathematics textbook include more social values. According to Table 3, the social values are less prevalent in the fifth and sixth units of the seventh-grade mathematics textbook, which contains geometry compared to the fifth and sixth-grade mathematics textbooks. Additionally, the sixth unit of the seventh-grade mathematics textbook does not include the section on looking at objects from different perspectives and social values.

One of the examples of the beginning of the unit in the seventh-grade mathematics textbook is shown in Figure 6 It was also presented.

TAM SAYILARLA ÇARPMA İŞLEMİ

Yanda resmi verilen denizaltı, okyanusların derinliklerini konu alan bir belgesel çekimi için keşif gezisi yapmaktadır. Bu denizaltı dakikada 45 m derine inecek şekilde sabit hızla dalmaktadır.

- Denizaltının 4. dakikada indiği derinliği toplama işleminden yararlanarak bulunuz.
- Aynı derinliği bulabilmek için toplama işlemi dışında farklı bir yöntem belirleyiniz.
- Belirlediğiniz yöntemle denizaltının derine inmeye başladığı ilk andan itibaren 15 dakika sonraki derinliğini hesaplamak için gereken işlemi yazınız.

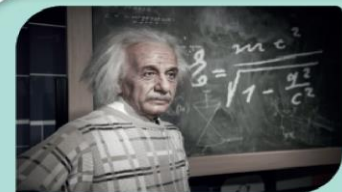


Figure 6. One Of The Unit Start Examples In The Seventh-Grade Mathematics Textbook

Figure 6 In examining the seventh-grade mathematics textbook, it was found that the examples at the beginning of the unit were more likely to pique students' curiosity and inform them than examples that included social values.

Instead of examples containing social values, the seventh-grade mathematics textbook states, "A drilling machine can drill 3 meters per hour into the soil. This drilling, which works continuously for 5 hours, Lets us determine the position of the depth reached by the tip of the machine about the surface of the ground." It was found that it consists of expressions that contain operations in style.

An example from the introductions of famous scientists in a seventh-grade math textbook is



"Bana bir problem ve 1 saat süre verilse bu sürenin 45 dakikasını problemi anlamaya, 10 dakikasını çözüm yolları üretmeye, 5 dakikasını çözmeye ayırırm." Albert Einstein

- Albert Einstein (Albert Aynştayn) bu sözleriyle neyi vurgulamaya çalışmıştır?

Figure 7. Sn Example Of The Introduction Of Famous Scientists In A Seventh-Grade Mathematics Textbook

Figure 7 many parts of the seventh-grade mathematics textbook contain information about the lives and views of famous scientists. Attempts are made to teach students social values such as responsibility and diligence by presenting scientists' views on life and their work. The frequency of social values in the 8th-grade mathematics textbook is shown in Table 11.

Table 11. Frequency Table Of Social Values In A Mathematics Textbook For Grade 8

Unit	Section	Cooperative	Benevolence	Universalism	Responsibility	Respect	Sharing	Equality	Love	Total
Unit 1	Multipliers and Multiples	1	1	1	4	1	1	4	3	16
	Exponential Expressions	-	-	-	2	1	-	1	1	4
Unit 2	Square Root Expressions	-	-	-	2	1	-	1	1	5
	Data analysis	-	1	-	3	-	-	-	1	5
Unit 3	Probability of Simple Events	-	1	-	1	-	1	2	-	5
	Algebraic Expressions and Identities	-	-	-	-	-	-	1	-	1
Unit 4	Linear Equations	-	-	-	2	-	-	-	-	2
	Inequalities	-	1	-	2	-	-	-	-	3
Unit 5	triangles	-	-	-	1	1	-	-	-	2
	Parity Similarity	-	-	-	-	-	-	-	-	0
Unit 6	Transformation Geometry	-	-	-	-	-	-	-	1	1
	Geometric Bodies	-	-	-	-	-	-	-	-	0
Total		1	4	1	17	4	2	9	7	44

The research presented in Table 11 reveals that certain values, such as responsibility (17), equality (9), and love (7), are the most prevalent in the eighth-grade textbook. Conversely, values like cooperation (1), universalism (1), and sharing (2) are considered the least represented social values in the same textbook. When analyzed by unit and section, the study found that social values had a minor presence in the Triangles (2) and Congruence and Similarity (0) sections of the fifth unit, as well as the Transformational Geometry (1) and Geometric Objects (0) sections of the sixth unit. In contrast, social values played a more significant role in the first (20) and second (10) units of the eighth-grade mathematics textbook.

Table 4 provides further evidence that social values are less frequent in the fifth and sixth units of the eighth-grade mathematics textbook, which contain the subject of geometry, than in the other units. Additionally, the study discovered that the parity and similarity section of the fifth unit and the geometric objects section of the sixth unit in the eighth-grade mathematics textbook did not include any social values.

An example of the beginning of the ebob topic in an eighth-grade mathematics textbook is shown in Figure 8.

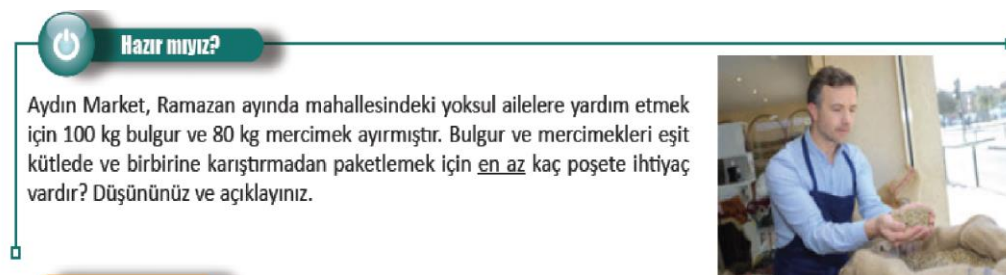


Figure 8. Example Of Ebob Topic Starts In Eighth Grade Mathematics Textbook

Figure 8 as explored, there are examples of social values, such as helping each other in the eighth-grade math textbook.

An example of beginning the topic of eco in the eighth-grade mathematics textbook is shown in Figure 9.

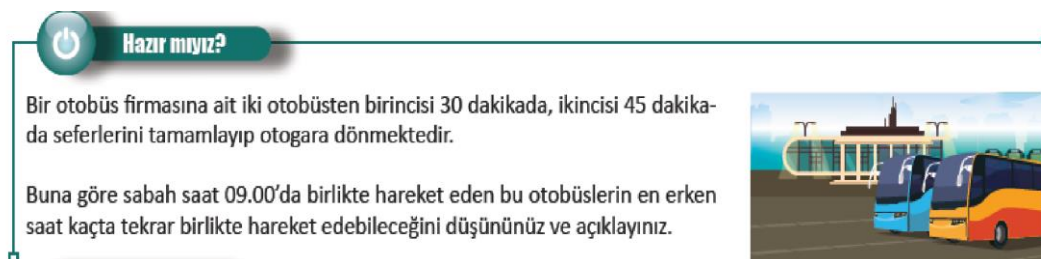


Figure 9. Example Of Beginning Eco-Topics In An Eighth-Grade Mathematics Textbook

In Figure 3.9, examples of direct operations can be found in the eighth-grade math textbook, rather than socially valuable expressions like "helping poor families" or "dividing the cake equally." Instead, the textbook presents problems such as "Calculate the mass of a hydrogen atom using powers of 10 with a mass of 1.00794 g/mol" and "Arrange the numbers 0.75 - 10¹²; 75 - 10⁻¹⁵; 7.5 - 10⁻¹⁶; 7500 in scientific notation and order the result. Some of these expressions have no social value.

Table 12 the frequency of social values in mathematics textbooks at all middle levels is also included.

Table 12. Frequency Table Of Social Values In Mathematics Textbooks At All Levels Of Middle Education

Grade Level	Cooperative	Benevolence	Universalism	Responsibility	Respect	Sharing	Equality	Love	Total
5th grade	21	11	12	20	6	7	7	9	94
6th grade	6	7	4	20	11	8	16	16	91
7th grade	8	4	6	11	3	6	16	3	57
8th grade	1	4	1	17	4	2	9	7	44
Total	36	26	23	68	24	23	48	35	286

When examining middle school mathematics textbooks in General, Table 12 illustrates that the fifth-grade textbook has the highest number of social values, with 94 in total. The sixth grade follows closely with 91 social values, while the seventh grade contains 57 social values. The eighth grade has the lowest number of social values, with only 44 in total. Consequently, the inclusion of social values in mathematics textbooks decreases as grade level increases.

Responsibility is the social value most frequently included in middle school mathematics textbooks, with 68 instances across the textbooks analyzed in Table 5. This is followed by equality (48) and cooperation (36). In contrast, the social values that are least included in these textbooks are universalism (23), sharing (23), and respect (24). Overall, the fifth-grade mathematics textbook contains the highest number of social values, while the eighth-grade textbook has the fewest.

4. DISCUSSION AND CONCLUSION

This study focuses on social values present in middle school mathematics curricula and textbooks. Our analysis revealed that the fifth-grade mathematics textbook includes the highest number of social values, followed by the sixth, seventh, and eighth grades. Responsibility is the most commonly occurring social value, followed by equality and cooperation. In contrast, the social values least included in middle school mathematics textbooks are universalism, sharing, and respect. These findings align with those of Şahin and Başgöl (2019), who also found that responsibility is the most common value in mathematics textbooks.

However, Şahin and Tuğrul's (2020) study found that love is the most common social value in primary school mathematics textbooks. This study's results differ from Şahin and Tuğrul's (2020) findings. Seah and Bishop (2010) similarly discovered that mathematics textbooks primarily contain abstract concepts, making it challenging to integrate values. Their study found that the incorporation of

values in mathematics textbooks is limited. Therefore, our research results are consistent with Seah and Bishop's (2010) findings.

The study's results indicate that middle school mathematics textbooks contain fewer social values in their geometry sections than in other sections. The social values included in these textbooks are those published by the Ministry of National Education in 2018. While only ten root values, including equity, are emphasized in the textbooks, the sub-value of equality is also highlighted in the mathematics curriculum. Additionally, the value of universalism, not among the ten root values, is included in the textbooks.

The study's first sub-problem revealed that responsibility and equality are the most emphasized values in the mathematics curriculum. The value of equality is subsumed under the fundamental value of justice in the curriculum.

Another significant finding is that fundamental values such as justice, friendship, honesty, self-control, patience, respect, love, responsibility, patriotism, and benevolence are included in the introductory and explanatory sections of the mathematics curriculum. However, they are not integrated into the mathematics learning outcomes. For instance, the sixth-grade learning outcome is about the ratio of two multiplicities in the same or different units, which is expressed as a unitless ratio. Meanwhile, the acquisition of this outcome is based on the value of social responsibility, which is implicit.

This study demonstrates that values such as cooperation, responsibility, and universalism are predominantly incorporated in the fifth-grade mathematics curriculum, whereas sharing, equality, and respect are perceived to be the least included social values in the textbook. This suggests that the fifth-grade textbooks diverge from the goals of mathematics education in terms of the values that are emphasized. In contrast, the achievements of the sixth-grade mathematics curriculum appear to emphasize values such as responsibility, equality, and love, while universalism, cooperation, helpfulness, and sharing are perceived to be the least included social values in the textbook. This suggests that the sixth-grade textbooks do not align with the goals of the mathematics curriculum in terms of perceived value.

The seventh-grade mathematics curriculum appears to prioritize values such as equality and responsibility, while benevolence, love, and respect are perceived to be the least prevalent social values in the textbook. This suggests that the seventh-grade textbooks must align with the goals of mathematics education in terms of the values that are emphasized. In contrast, the eighth-grade mathematics curriculum emphasizes values such as responsibility, equality, and love, while cooperation, universalism, and sharing are perceived to be the least included social values in the textbook. This suggests that the eighth-grade textbooks do not align with the goals of mathematics education in terms of perceived value.

When evaluating middle school mathematics textbooks on a grade-by-grade basis, it was observed that the fifth-grade textbook had the highest social value at ninety-four, followed by the sixth-grade textbook with ninety-one social values and the seventh-grade textbook with fifty-seven social values. The eighth-grade textbook had the lowest social value with only forty-four social values in the middle school mathematics textbooks. The limited inclusion of social values in middle school textbooks can be attributed to the historical lack of emphasis on values in educational programs. As a result, the awareness of textbook authors regarding the importance of incorporating social values may not be sufficiently developed.

One significant finding of this study is that the distribution of values in the textbooks published by the Ministry of National Education is not uniform. Responsibility, love, and respect receive more attention than other social values. These findings are in line with the research of Seah and Bishop (2000), who investigated values education in mathematics in Singapore and Victoria, Australia. Despite being from the same country, they found that different values were emphasized in mathematics textbooks in different states, indicating regional variation in the textbooks' values.

Another critical insight from the study is that responsibility is the most commonly occurring social value in middle school mathematics textbooks, followed by equality and cooperation. Conversely, universalism, sharing, and respect are the least prevalent social values in these textbooks. Gebregeorgis (2016) has argued that textbooks are not just a source of information but can also be used to teach values. In the eighth-grade textbook studied by Gebregeorgis (2016), values such as tolerance, solidarity, and responsibility were emphasized. The present study also found cooperation, universalism, and sharing to be present in the eighth-grade middle school textbook, indicating some similarity to the findings of Gebregeorgis (2016).

A study conducted by Şahin and Başgöl (2019) on mathematics textbooks found that the seventh grade had the highest inclusion of social values, while the eighth grade had the lowest. However, the present study found that the fifth grade had the highest inclusion of values, followed by the sixth, seventh, and eighth grades. Therefore, this study differs from Şahin and Başgöl (2019) as they identified the value of responsibility as the most frequently included value in mathematics curricula and textbooks, followed by equality and cooperation.

Bishop (2007) noted that textbooks and curricula do not sufficiently address the values of education, and research in this area is inadequate. Although there is relevant research on the affective domain, mathematics, and social and cultural issues, there needs to be more direct research on values or appreciation. Teachers are generally unaware of the explicit or implicit teaching of values, which occurs overtly or implicitly. Simons et al. emphasized the significance of teaching values through mathematics textbooks and curricula in mathematics education. In light of the calls for students to be more economically oriented and globally aware, mathematics educators were asked to identify the values that

should be developed through mathematics education. Hence, this study contributes to filling the literature gap.

In studies similar to the current study, values are determined according to the subject area of the book under review (Ersoy & Şahin, 2012; Yaman, Taflan, & Çolak, 2009; Kuş, Merey, & Karatekin, 2013). Although the subject area is mathematics, it was found that values differ depending on the author and publisher of the book (Kılıç & Aktan, 2015; Şahin & Başgöl, 2018). According to Years (2016), textbooks and texts play an important role in value education since they are significant in shaping the worldview and meaning of educated individuals in schools that provide the cultural transfer. The ratio of values in textbooks depends on the subject, author, and publisher, and the variation of these factors results in a lack of standardization in textbooks, which are considered essential tools in value education.

5. RECOMMENDATIONS

The findings of the study suggest that the middle school mathematics curriculum should be revised to include values more explicitly, as values are currently being taught mostly implicitly. The revised curriculum should include clear statements of values in the performance sections, and teachers should be provided with guidance on how to teach values effectively to their students. The results also indicate that values should be distributed more evenly across the units of the curriculum. The textbooks used in middle school mathematics classes could be reconstructed to achieve this. It may also be useful for researchers to examine publications from other publishers that are used in schools. It is important to note that this study relied solely on document analysis, and it would be beneficial for future research to examine teachers' classroom practices to determine which social values they teach.

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GENİŞLETİLMİŞ TÜRKÇE ÖZET

ORTAOKUL MATEMATİK ÖĞRETİM PROGRAMI VE DERS KİTAPLARININ SOSYAL DEĞERLER AÇISINDAN İNCELENMESİ

GİRİŞ

Aydın (1990) matematik eğitiminin gayelerini; matematiğin öğretim hedeflerini tespit etmek, matematiğin her seviyede kalıcı öğrenimi sağlamak olarak ifade etmiştir. Ayrıca matematiği iyi matematik alanında, ölçme değerlendirme uzmanı, bilgisayar uzmanı, müfredat programlayıcısı gibi uzmanları yetiştirmek, insanların matematiğe karşı tutum ve davranışlarını belirleyebilmek ve bu amaçlara ulaşabilmek için bilimsel araştırmalar yapmayı matematik eğitiminin gayesi olarak ifade etmiştir. Matematik dersi ve sosyal değerler genel olarak araştırmacılar tarafından birbirinden uzak kavramlar olarak görülmektedir. Bununla birlikte, matematik dersinde değerler eğitiminin yeri açık ve nettir (Bishop,1999).

Matematik eğitiminin çok önemli olduğu günümüzde öğretim programlarındaki kazanımlar ve matematik ders kitaplarında yer alan sosyal değer içeren ifadeler çocukların değer kazanımı açısından çok önemlidir (Berkowitz, 2011). Ders kitaplarında yer alan sosyal değer içerikli soru ve örnekler sayesinde çocuklar bu verilen bilgileri kafalarında yorumlayabilirler (Gül, 2017). Bu sayede ders kitapları da sosyal değer kazandıran bir araç haline gelebilir. Aynı şekilde öğretim programlarında ki kazanımlar da sosyal değerlere yer vererek çocuklara farklı değerler kazandırılabilir. Ders kitapları ve öğretim programındaki kazanımlar değerler ile zenginleştirilerek ile öğrencilerin yaşadıkları toplumun değerlerini kazandırabileceği bir araç haline getirilebilir (Tanrıöver, 2003; Körükçü, Kapıkıran & Aral, 2016).

Bu çalışma ile ortaokul matematik öğretim programı ve ortaokul matematik ders kitaplarında yer alan sosyal değerlerin neler olduğunu saptamak hedeflenmiştir. Ayrıca matematik dersinin sosyal değerlerle olan ilişkisini ortaya çıkarmak araştırmanın bir diğer amacıdır. Bu durumdan dolayı matematik dersinin sosyal değerlerden bağımsız bir şekilde düşünülmemeyeceğine dair dikkat çekmesi açısından önem arz etmektedir. Ayrıca bu çalışma matematik dersinin sadece matematiksel değerleri barındırmadığı, aynı zaman da diğer sosyal değerleri barındırdığını da tespit etmesi açısından önem arz etmektedir. Yapılan açıklamalar doğrultusunda ortaokul matematik öğretim programının ve ortaokul matematik ders kitabının sosyal değerler açısından incelenmesi önem taşımaktadır. Öğretim programında hangi kazanımda hangi sosyal değere yer verildiği, öğretim programındaki kazanımların ne kadarında sosyal değerlere yer verildiği, matematik ders kitabında hangi konularda sosyal değerlere yer verildiği, en çok hangi sosyal değerlerin ortaokul matematik ders kitabında kendine yer bulduğu sorularına bu çalışma ile cevap aranmaya çalışılmaktadır. Değerlerin öğretim programlarında ve matematik kitaplarında ne kadar yer aldığı tespit edilmesi eğitim ve öğretim programı yapıcılara yol

göstereceği bu sayede değerlerin öğretim programı ve ders kitaplarında daha fazla yer almasını sağlayacağı düşünülmektedir. Ayrıca matematik öğretim programını uygulayıcı olan matematik öğretmenleri de programda kitaplarda hangi değerlerin yer aldığı hatırlatılarak, öğretmenlerin dikkati çekilerek değer eğitime önem verilmesi sağlanacaktır.

Araştırma kapsamında bu araştırmanın ana problemi ve alt problemleri aşağıda sunulmuştur

Ana problem: Ortaokul matematik öğretim programı ve ortaokul matematik ders kitaplarında yer alan sosyal değerler nelerdir?

Alt Problemler

1. Ortaokul matematik öğretim programında yer alan sosyal değerler nelerdir?
2. Ortaokul matematik ders kitabında yer alan sosyal değerler nelerdir?

YÖNTEM

Bu çalışmada nitel araştırma yöntemleri içinde yer alan *doküman analizi (belgesel tarama)* tekniği kullanılmıştır. Doküman analizi yönteminde; yazılı, sözlü ve görsel materyaller araştırmanın amacı doğrultusunda kullanılabilir (McMillian ve Schumacher, 2010). Yazılı dokümanlar bize bilgi sahibi olmak istediğimiz çoğu konu hakkında bilgiler sunmaktadır. Bu nedenle doküman analizi (belgesel tarama) nitel araştırmalarda etkin bir şekilde kullanılan araştırma modellerinden biridir. Doküman incelenmesi araştırılması istenen konu hakkında bilgi içeren materyallerin analiz edilip bilgiler toplanması esasına dayanır (Yıldırım ve Şimşek,2006). Bu noktadan hareketle matematik öğretim programı ve ortaokul matematik ders kitapları doküman analizi yöntemi ile incelenerek öğretim programında ve matematik ders kitaplarında değerler eğitime yapılan vurgunun niteliği ve niceliği tespit edilmeye çalışılmıştır. Ayrıca Yıldırım ve Şimşek (2011:197) doküman incelenmesine yönelik araştırmalarda tüm dokümanları incelemenin imkansız olduğunu belirtmiş ve eldeki veri setinden bir örneklem oluşturulabileceğini söylemiştir. Bundan dolayı bu çalışmada hala okullarda kullanılan MEB'nın yayınladığı matematik ders kitapları incelenmiş, diğer özel yayınevlerinin yayınladığı kitaplar incelenmemiştir.

BULGULAR

Araştırmanın bulguları alt başlıklar halinde belirtilmiştir.

Birinci Araştırma Sorusuna Yönelik Bulgular

Matematik eğitim programı ve kazanımlarında hangi sosyal değerlere yer verilmiştir? araştırma sorusuna yönelik bulgulara bu bölümde yer verilmiştir.

Tablo 1. 5.Sınıf Matematik Öğretim Programında Kazanımlarda Yer Alan Sosyal Değerler

Ünite	Kazanım	Sosyal Değer
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1. Ünite: Doğal Sayılar	M.5.1.1.2. En çok dokuz basamaklı doğal sayıların bölüklerini, basamaklarını ve rakamların basamak değerlerini belirtir. Bu sayıları gerçek hayatla ilişkilendirme durumlarında karşılaştırma ve anlamlandırmaya yönelik çalışmalara yer verilir.	Sorumluluk
1. Ünite: Doğal Sayılar	M.5.1.2.8. Bölme işlemine ilişkin problem durumlarında kalan yorumlar. Problem durumuna göre kalan ihmal edilir veya kesir olarak belirtilir. Örneğin 11 adet elmayı 2 kişiye eşit olarak paylaştırırken 1 kişiye ne kadar elma düşeceğini bulmak için kalan elma sayısı kesirle ifade edilir.	Eşitlik, Paylaşmak
1. Ünite: Doğal Sayılar	M.5.1.2.9. Çarpma ve bölme işlemleri arasındaki ilişkiyi anlayarak işlemlerde verilmeyen öğeleri (çarpan, bölüm veya bölünen) bulur. Örneğin her hafta 5 TL harçlık alan Ahmet 7 hafta boyunca parasını biriktirmiştir. Bu süre içinde biriktirdiği tüm parasıyla bir flüt almıştır. Ahmet flütü kaç liraya almıştır?	Tutumluluk
5. Ünite: Veri İşleme	M.5.3.1.1. Veri toplamayı gerektiren araştırma soruları oluşturur. a) Araştırma sorusu oluşturabilmek için "Bir sınıftaki öğrencilerin en sevdiği meyvelerin neler olduğu bir araştırma sorusudur ancak bir kişinin en sevdiği meyvenin ne olduğu sorusu araştırma sorusu değildir." gibi örnekler üzerinde durulur.	Sevgi
5. Ünite: Veri İşleme	M.5.3.1.1. Veri toplamayı gerektiren araştırma soruları oluşturur. b) Araştırma soruları oluşturulurken çevre bilinci, tutumluluk, yardımlaşma, israftan kaçınma vb. konulara yer verilir	Çevre bilinci, yardımseverlik, paylaşımcılık, tutumluluk, israftan kaçınma

Tablo 1 de ortaokul beşinci sınıf matematik öğretim programının da yer alan 54 kazanımın beş tanesinde sosyal değerlere yer verilmiştir. Birinci ünite olan doğal sayılar ünitesinde üç kazanımda ve beşinci ünite olan veri işleme ünitesinde iki kazanımda sosyal değerlere yer verilmiştir. Diğer ünitelerin kazanımlarında sosyal değerlere yer verilmemiştir. Sosyal değerlerin yer aldığı beş kazanımın dördünde sosyal değerler cümlelerin içerisinde gizli olarak verilirken "M.5.3.1.1. Veri toplamayı gerektiren araştırma soruları oluşturur. b) Araştırma soruları oluşturulurken çevre bilinci, tutumluluk, yardımlaşma, israftan kaçınma vb. konulara yer verilir" kazanımında sosyal değerlere açıkça yer verilmiştir. Ortaokul beşinci sınıf matematik öğretim programının da sorumluluk değerine üç, eşitlik, sevgi, paylaşımcılık, yardımseverlik, çevre bilinci, tutumluluk ve israftan kaçınma sosyal değerlerine birer defa yer verilmiştir.

6. Sınıf matematik öğretim programında yer alan sosyal değerler aşağıdaki tablo 2' de verilmiştir.

Tablo 2. 6.Sınıf Matematik Öğretim Programında Yer Alan Sosyal Değerler

Ünite	Kazanım	Sosyal Değer
3. Ünite: Oran	M.6.1.7.2. Bir bütünün iki parçaya ayrıldığı durumlarda iki parçanın birbirine veya her bir parçanın bütüne oranını belirler, problem durumlarda oranlardan biri verildiğinde diğerini bulur. Örnek durumlar: Bir sınıfta kızların sayısı erkeklerin sayısına eşit ise kızların sayısının sınıf mevcuduna oranı nedir?	Eşitlik
3. Ünite: Oran	M.6.1.7.3. Aynı veya farklı birimlerdeki iki çokluğun birbirine oranını belirler. Örneğin 6A sınıfının topladığı plastik kapakların sayısının 6B sınıfının topladığı plastik kapakların sayısına oranı 180 adet 120 adet = 3 2 olarak yazılır ve bu oran birimsizdir.	Sorumluluk

Tablo 2’ de ortaokul altıncı sınıf matematik öğretim programın da yer alan 59 kazanımın 2 tanesinde sosyal değerlere yer verilmiştir. Üçüncü ünite olan oran ünitesinde iki kazanımda ve dördüncü ünite olan veri işleme ünitesinde bir kazanımda sosyal değerlere yer verilmiştir. Ortaokul altıncı sınıf matematik öğretim programın da yer alan kazanımlarda sosyal değerler açıkça belirtilmemiş cümlelerin içerisinde gizli olarak verilmiştir. Örneğin kazanımlarda değerler açıkça olarak belirtilmemiş genel olarak örtük olarak ifade edilmiştir. Ortaokul altıncı sınıf matematik öğretim programın da sorumluluk, eşitlik ve sevgi sosyal değerlerine birer defa yer verilmiştir.

7. Sınıf matematik öğretim programında yer alan sosyal değerler aşağıdaki tablo 3’ de verilmiştir.

Tablo 3. 7. Sınıf Matematik Öğretim Programında Yer Alan Sosyal Değerler

Ünite	Kazanım	Sosyal Değer
4. Ünite: Oran ve Orantı	M.7.1.4.3. Gerçek hayat durumlarını inceleyerek iki çokluğun orantılı olup olmadığına karar verir. a) İki oran eşitliğinin orantı olarak adlandırıldığı vurgulanır.	Eşitlik
3. Ünite: Cebirsel İfadeler	M.7.2.1.3. Sayı örüntülerinin kuralını harfle ifade eder, kuralı harfle ifade edilen örüntünün istenilen terimini bulur. Günlük hayat durumu örneği: Birinci hafta 7 lira para biriktirmeye başlayan Emine, sonraki her hafta cüzdanına 5 lira eklemektedir. Cüzdandaki parasının hafta sayısı ile ilişkisini cebirsel ifade olarak belirtiniz.	Tutumluluk

Tablo 3 incelendiğinde ortaokul yedinci sınıf matematik öğretim programın da yer alan 51 kazanımın 2 tanesinde sosyal değerlere yer verilmiştir. Üçüncü ünite olan cebirsel ifadeler ünitesinde bir kazanımda ve dördüncü ünite olan oran orantı ünitesinde bir kazanımda sosyal değerlere yer

verilmiştir. Ortaokul yedinci sınıf matematik öğretim programın da yer alan kazanımlarda sosyal değerler açıkça belirtilmemiş cümlelerin içerisinde gizli olarak verilmiştir. Örneğin tutumluluk değeri direk olarak söylenmemiş ve değeri çağrıştıracak ifadeler kullanılmıştır. Ortaokul yedinci sınıf matematik öğretim programın da bir defa sorumluluk ve bir defa eşitlik sosyal değerlerine yer verilmiştir.

8.Sınıf Matematik Öğretim Programında Yer Alan Sosyal Değerler aşağıda tablo 4’ de verilmiştir.

Tablo 4. 8.Sınıf Matematik Öğretim Programında Yer Alan Sosyal Değerler

Ünite	Kazanım	Sosyal Değer
3. Ünite: Basit Olayların Olma Olasılığı	M.8.5.1.2. “Daha fazla”, “eşit”, “daha az” olasılıklı olayları ayırt eder, örnek verir.. Örneğin bir okuldaki tüm öğretmen ve öğrencilerin isimlerinin yazılı olduğu bir listeden rastgele çekilen bir ismin öğrenciye ait olma olasılığının daha fazla olduğu, 15’i erkek öğrenci ve 15’i kız öğrenci olan bir sınıftan rastgele seçilen birinin kız öğrenci olma olasılığı ile erkek öğrenci olma olasılığının eşit olduğunu belirten çalışmalar yapılır.	Eşitlik
5. Ünite: Çokgenler	M.8.3.2.3. Çokgenlerin öteleme ve yansımalar sonucunda ortaya çıkan görüntüsünü oluşturur. Geleneksel sanatlarımızdan (çini, seramik, dokuma vb.) örnekler de dikkate alınır.	Sorumluluk

Tablo 4 incelendiğinde ortaokul sekizinci sınıf matematik öğretim programın da yer alan 52 kazanımın 2 tanesinde sosyal değerlere yer verilmiştir. Üçüncü ünite olan basit olayların olma olasılığı ünitesinde bir kazanımda ve beşinci ünite olan çokgenler ünitesinde bir kazanımda sosyal değerlere yer verilmiştir. Ortaokul sekizinci sınıf matematik öğretim programın da yer alan kazanımlarda sosyal değerler açıkça belirtilmemiş cümlelerin içerisinde gizli olarak verilmiştir. Ortaokul sekizinci sınıf matematik öğretim programın da sorumluluk ve eşitlik sosyal değerlerine birer defa yer verilmiştir.

Tablo 5. Ortaokul Matematik Öğretim Programında Sosyal Değer İçeren Kazanımlar

Sınıf Düzeyi	Sosyal Değer Yer Alan Kazanım Sayısı	Sosyal Değer Yer Alan Kazanım Sayısı	Sosyal Değer Yer Alan Kazanımların Yüzdesi
5	5	49	%9.25
6	3	56	%5.08
7	2	49	%3.92
8	2	50	%3.84
Toplam	12	204	%5.88

Ortaokul matematik öğretim programındaki kazanımları sosyal değer içermesi bakımından karşılaştırdığımızda yüzde olarak en fazla sosyal değere yer verilen sınıf %9,25 ile beşinci sınıf kazanımları olurken, bunu %5.08 ile altıncı sınıf, %3.92 ile yedinci sınıf izlemektedir. %3.84 ile matematik öğretim programının kazanımlarında sosyal değerlere en az yer verilen sınıf sekizinci sınıf olmuştur. Kazanımlarda sosyal değer yer alma yüzdesine bakıldığı zaman sınıf ilerledikçe kazanımlarda sosyal değer yer almasının yüzde olarak azaldığı görülmektedir. Ortaokul matematik öğretim programının kazanımlarına sosyal değer olarak incelendiğinde birinci sırada sorumluluk sosyal değerinin yer aldığı görülmektedir. Sorumluluk değerini eşitlik ve sevgi değerleri izlemektedir.

İkinci Araştırma Sorusuna Yönelik Bulgular

Ortaokul matematik ders kitaplarında hangi sosyal değerlere yer verilmiştir? araştırma sorusuna yönelik bulgulara bu bölümde yer verilmiştir.

5. Sınıf matematik ders kitabında yer alan sosyal değerlerin dağılımları aşağıdaki tablo 6' de verilmektedir.

Tablo 6. 5. Sınıf Matematik Ders Kitabında Yer Alan Sosyal Değerlerin Dağılım Tablosu

Ünite	Bölüm	İşbirlikçi	Yardımsızlık	Evranselcilik	Sorumluluk	Saygı	Paylaşmak	Eşitlik	Sevgi	Toplam
1. Ünite	Doğal sayılar	9	4	1	4	1	1	-	-	20
	Doğal sayılarla işlemler	3	2	4	3	-	4	-	-	16
2. Ünite	Kesirler	-	2	-	-	-	1	3	-	6
	Kesirlerle işlemler	1	1	1	2	-	-	1	-	6
3. Ünite	Ondalık gösterim	2	-	2	2	2	-	-	-	8
	Yüzdeler	1	-	1	3	1	-	1	3	11
4. Ünite	Temel geometrik kavramlar	2	1	1	3	1	-	-	-	8
	Üçgenler ve dörtgenler	-	-	-	-	-	-	-	1	1
5. Ünite	Veri işleme	1	1	1	1	-	1	1	2	8
	Uzunluk ve zaman ölçme	1	-	-	2	1	-	-	2	6
6. Ünite	Alan ölçme	1	-	1	-	-	-	-	-	2

Geometrik cisimler	-	-	-	-	-	-	-	1	1	2
Toplam	21	11	12	20	6	7	7	9	94	

Tablo 6 incelendiğinde beşinci sınıf ders kitabında en fazla işbirlikçi (21), sorumluluk (20) ve evrenselcilik (12) gibi değerlerin yer aldığı görülmektedir. Buna karşın beşinci sınıf ders kitabında paylaşmak (7), eşitlik (7) ve saygı (6) en az yer alan sosyal değerler olarak görülmektedir. Ünite ve bölüm olarak ise 5. Sınıf ders kitabında sosyal değerlere altıncı üniteye yer alan ölçme (2) ve geometrik cisimler (2) ile dördüncü üniteye yer alan üçgenler ve dörtgenler (1) bölümünde sosyal değerlere az yer verildiği bulgusuna ulaşılmıştır. Buna karşın beşinci sınıf matematik ders kitabında birinci üniteye yer alan doğal sayılar (20) ve doğal sayılarla işlemler (16) bölümü ile üçüncü ünite yüzdeler (11) bölümünde sosyal değerlere daha fazla yer verildiği sonucuna ulaşılmıştır. Tablo 1'e göre matematik ders kitabında geometri konularının yer aldığı dört, beş ve altıncı ünitelerde sosyal değerlerin diğer ünitelere göre daha az yer aldığı bulgusuna ulaşılmıştır.

Tablo 7. 6.Sınıf Matematik Ders Kitabında Yer Alan Sosyal Değerlerin Dağılım Tablosu

Ünite	Bölüm	İşbirlikçi	Yardımsızlık	Evrenselcilik	Sorumluluk	Saygı	Paylaşmak	Eşitlik	Sevgi	Toplam
1. Ünite	Doğal Sayılarla İşlemler	-	-	-	5	1	1	2	3	12
	Çarpanlar ve Katlar	-	1	1	-	1	-	2	-	5
	Kümeler	-	1	-	1	-	-	-	1	3
2. Ünite	Tam Sayılar	1	1	-	1	1	3	3	1	11
	Kesirlerle İşlemler	2	2	1	-	2	-	2	2	11
3. Ünite	Ondalık gösterim	-	1	-	4	1	1	2	3	12
	Oran	-	-	-	1	1	1	1	-	4
4. Ünite	Cebirsel İfadeler	1	-	-	1	1	1	1	2	7
	Veri Toplama ve Değerlendirme Veri Analizi	1	-	-	-	-	-	-	1	2
5. Ünite	Açılar	1	-	1	2	-	1	2	1	8
	Alan Ölçme	-	1	-	1	1	-	-	-	3

6. Ünite	Çember	-	-	-	-	-	-	-	-	0
	Geometrik Cisimler	-	-	-	2	-	-	1	1	4
	Sıvı Ölçme	-	-	1	1	-	-	-	-	2
Toplam		6	7	4	20	11	8	16	16	91

Tablo 7 incelendiğinde altıncı sınıf ders kitabında en fazla sorumluluk (20), eşitlik (16) ve sevgi (16) gibi değerlerin yer aldığı görülmektedir. Buna karşın altıncı sınıf ders kitabında evrenselcilik (4), işbirlikçi (6), yardımseverlik (7) ve paylaşmak (8) en az yer alan sosyal değerler olarak görülmektedir. Ünite ve bölüm olarak ise altıncı sınıf ders kitabında sosyal değerlere beşinci üniteye yer alan ölçme (3) ve açılar (2) ile altıncı üniteye yer alan çember (0), geometrik cisimler (4), sıvı ölçme (2) bölümünde sosyal değerlere az yer verildiği bulgusuna ulaşılmıştır. Buna karşın altıncı sınıf matematik ders kitabında birinci üniteye yer alan doğal sayılar işlemler (12) ve ikinci tam sayılar (11) ve yüzdeler bölümünde sosyal değerlere daha fazla yer verildiği sonucuna ulaşılmıştır. Tablo 2'ye göre matematik ders kitabında beşinci sınıf ders kitabında da olduğu şekilde geometri konularının yer aldığı beş ve altıncı ünitelerde sosyal değerlerin diğer ünitelere göre daha az yer aldığı bulgusuna ulaşılmıştır. Altıncı ünite birinci bölüm olan çember konusunda sosyal değerlere hiç yer verilmemiştir.

Tablo 8. 7. Sınıf Matematik Ders Kitabında Yer Alan Sosyal Değerlerin Dağılım Tablosu

Ünite	Bölüm	İşbirlikçi	Yardımseverlik	Evrenselcilik	Sorumluluk	Saygı	Paylaşmak	Eşitlik	Sevgi	Toplam
1. Ünite	Tam Sayılar	-	-	1	4	-	-	-	-	5
2. Ünite	Rasyonel Sayılar	2	1	-	1	1	3	3	-	11
	Rasyonel Sayılar İşlemler	-	1	-	-	1	1	1	-	6
3. Ünite	Cebirsel İfadeler	-	-	1	-	-	-	-	-	1
	Eşitlik ve Denklem	2	1	-	1	-	1	3	-	8
4. Ünite	Oran ve Orantı	2	1	1	1	1	1	4	2	13
	Yüzdeler	1	-	-	3	-	-	5	-	9
5. Ünite	Doğrular ve Açılar	-	-	2	-	-	-	-	-	2
	Çokgenler	1	-	1	-	-	-	-	1	3
6. Ünite	Veri Analizi	-	-	-	1	-	-	-	-	1
	Cisimlerin Farklı Yönlerden Görünümü	-	-	-	-	-	-	-	-	0
Toplam		8	4	6	11	3	6	16	3	57

Tablo 8 incelendiğinde yedinci sınıf ders kitabında en fazla eşitlik (16) ve sorumluluk (11) gibi değerlerin yer aldığı görülmektedir. Buna karşın yardımseverlik (4), sevgi (3) ve saygı (3) en az yer alan sosyal değerler olarak görülmektedir. Ünite ve bölüm olarak ise sosyal değerlere birinci ünite (5), beşinci ünite de yer alan doğrular ve açılar (2) ve çokgenler (3) ile altıncı ünite de yer alan veri analizi (1) ve cisimlerin farklı yönlerden görünümü (0) bölümlerinde sosyal değerlere az yer verildiği görülmüştür. Buna karşın yedinci sınıf matematik ders kitabında dördüncü ünite de yer alan oran ve orantı (13) ve yüzdeler (9) bölümünde sosyal değerlere daha fazla yer verildiği sonucuna ulaşılmıştır. Tablo 3'e göre aynı altıncı ve beşinci sınıf matematik ders kitaplarında olduğu şekilde yedinci sınıf matematik ders kitabında da geometri konularının yer aldığı beş ve altıncı ünitelerde sosyal değerlerin diğer ünitelere göre daha az yer aldığı bulgusuna ulaşılmıştır. Ayrıca altıncı ünitenin cisimlerin farklı yönlerden görünümü bölümünde sosyal değerlere hiç yer verilmediği sonucuna ulaşılmıştır.

Tablo 9. 8. Sınıf Matematik Ders Kitabında Yer Alan Sosyal Değerlerin Dağılım Tablosu

Ünite	Bölüm	İşbirlikçi	Yardımseverlik	Evrenselcilik	Sorumluluk	Saygı	Paylaşmak	Eşitlik	Sevgi	Toplam
1. ünite	Çarpanlar ve Katlar	1	1	1	4	1	1	4	3	16
	Üslü İfadeler	-	-	-	2	1	-	1	1	4
2. ünite	Kareköklü İfadeler	-	-	-	2	1	-	1	1	5
	Veri Analizi	-	1	-	3	-	-	-	1	5
3. ünite	Basit Olayların Olma Olasılığı	-	1	-	1	-	1	2	-	5
	Cebirsel İfadeler ve Özdeşlikler	-	-	-	-	-	-	1	-	1
4. ünite	Doğrusal Denklemler	-	-	-	2	-	-	-	-	2
	Eşitsizlikler	-	1	-	2	-	-	-	-	3
5. ünite	Üçgenler	-	-	-	1	1	-	-	-	2
	Eşlik Benzerlik	-	-	-	-	-	-	-	-	0
6. ünite	Dönüşüm Geometrisi	-	-	-	-	-	-	-	1	1
	Geometrik Cisimler	-	-	-	-	-	-	-	-	0
Toplam		1	4	1	17	4	2	9	7	44

Tablo 9 incelendiğinde sekizinci sınıf ders kitabında en fazla sorumluluk (17), eşitlik (9) ve sevgi (7) gibi değerlerin yer aldığı görülmektedir. Buna karşın sekizinci sınıf ders kitabında işbirlikçi (1), evrenselcilik (1) ve paylaşmak (2) en az yer alan sosyal değerler olarak görülmektedir. Ünite ve bölüm olarak ise sekizinci sınıf ders kitabında sosyal değerlere beşinci ünite de yer alan üçgenler (2) ve eşlik ve benzerlik (0) ile altıncı ünite de yer alan dönüşüm geometrisi (1) ve geometrik cisimler (0)

bölümlerinde sosyal değerlere az yer verildiği tespit edilmiştir. Buna karşın sekizinci sınıf matematik ders kitabında birinci (20) ve ikinci ünitelerde (10) sosyal değerlere daha fazla yer verildiği sonucuna ulaşılmıştır. Tablo 4'e göre aynı beşinci, altıncı ve yedinci sınıf matematik ders kitaplarında olduğu şekilde sekizinci sınıf matematik ders kitabında da geometri konularının yer aldığı beş ve altıncı ünitelerde sosyal değerlerin diğer ünitelere göre daha az yer aldığı bulgusuna ulaşılmıştır. Ayrıca sekizinci sınıf matematik ders kitabında beşinci ünitenin eşlik benzerlik bölümünde ve altıncı ünitenin geometrik cisimler bölümünde sosyal değerlere hiç yer verilmediği tespit edilmiştir.

TARTIŞMA VE SONUÇ

Bu çalışmanın amacı ortaokul matematik öğretim programında ve ders kitaplarında yer alan sosyal değerleri tespit etmektir. Çalışma sonucunda ortaokul beşinci sınıf matematik öğretim programında yer alan elli dört kazanımın beşinde, altıncı sınıfın elli dokuz kazanımın ikisinde, yedinci sınıfın elli bir kazanımın ikisinde, sekizinci sınıfın elli iki kazanımın ikisinde sosyal değerlere yer verilmiştir. Matematik öğretim programında oransal olarak en fazla beşinci sınıf kazanımlarında değerlerin yer aldığı tespit edilmiştir. Beşinci sınıfı altı, yedi ve sekizinci sınıf takip etmektedir. Ortaokul matematik öğretim programı kazanımlarında en fazla yer alan değer sorumluluk iken bunu eşitlik, paylaşmak tutumluluk değerleri izlemektedir.

Bu araştırmanın ortaya çıkardığı bir önemli sonuç ise MEB'nin yayınladığı ders kitapların da değerler homojen olarak dağılmamıştır. Sorumluluk, sevgi, saygı gibi değerlere diğer sosyal değerlere göre daha çok yer verilmiştir. Ders kitaplarında değerler homojen olarak yer almasa da sınıf düzeyi farklı olmasına karşın benzer değerlerin yer aldığı bulunmuştur. Bu bulgular Seah, Bishop (2000)'ün çalışmalarıyla farklılık göstermektedir. Seah, Bishop (2000) Avustralya da Singapur ve Victoria eyaletlerindeki matematik ders değerler eğitimi açısından incelemişlerdir. Elde ettikleri sonuçlar aynı ülke de olmasına rağmen farklı eyaletlerde okutulan matematik ders kitaplarında farklı değerlerin ön planda olduğu tespit edilmiştir. Ülkemizde ise bu durumun tam zıttı olarak tüm bölgelerde aynı kitaplar okutulurken aynı değerler kazandırılmaya çalışılmıştır. Bu durum bölgeden bölgeye değişmesi gereken değer eğitimi ile çelişmektedir. Çünkü her ne kadar evrensel değerler yer alsın da genel olarak değerler toplumsaldır ve bireyin dışındadır ve toplumun baskısı özelliklerine sahiptir. Birey değerleri doğduğu toplumda hazır bulur, toplumsallaşma sürecinde değerleri öğrenir ve bir sonraki kuşağa aktarılır (Yazıcı, 2016).

İkinci alt probleme yönelik elde edilen bir diğer önemli bulgu ise ortaokul matematik ders kitaplarında en fazla yer alan sosyal değer sorumluluk olmasıdır. Sorumluluğu eşitlik ve işbirliği takip etmektedir. Ortaokul matematik ders kitabında en az yer alan sosyal değerler ise evrenselcilik, paylaşmak ve saygıdır. Gebregeorgis (2016) ders kitaplarının sadece bilgi kaynağı olmadığını aynı zaman da değer eğitimi için kullanabileceğini ifade etmiştir. İncelediği sekizinci sınıf ders kitabında hoşgörü, dayanışma, sorumluluk değerlerinin yer aldığını tespit etmiştir. Yapılan çalışmada ortaokul

sekizinci ders kitabında işbirlikçi, evrenselcilik ve paylaşmak değerleri tespit edilmiştir. Bu bakımdan sonuçlar Gebregeorgis (2016)'ın sonuçlar ile benzerlik göstermektedir.

Yapılan çalışmaya benzer olarak yapılan ders kitabı inceleme çalışmalarında değerlerin yer alma oranları, incelenen kitabın ders alanına göre (Ersoy, Şahin 2012; Yaman, Taflan, Çolak, 2009; Kuş, Merey, Karatekin, 2013) ve matematik alanında olmasına karşın kitabı yazan yazarına ve yayınevine göre (Kılıç ve Aktan, 2015; Şahin ve Başgöl, 2018) farklılaştığı tespit edilmiştir. Yıllar (2016) ders kitabı ve metinlerin değer eğitimindeki önemini kültürün aktarılmasını sağlayan okullarda, yetişen bireylerin algı ve anlam dünyasının oluşmasında, ders kitapları ve metinler önemli bir yer tutmaktadır şeklinde ifade etmiştir. Ders kitaplarında yer alan değer oranının ders alanına, yazara, yayınevine vb. değişkenlere göre farklılık göstermesi değer eğitiminin en önemli araçlarından biri olarak görülen ders kitaplarında standardın sağlanamamasına neden olmaktadır. Oysa değer eğitime yönelik olarak eğitim sistemimizin belirli bir politikasının bulunması gerekmektedir. Örneğin, okulla, ya da sınıf düzeyinde öğrenciler hangi değerlere yönelik sorunlar yaşıyorsa öğretmenler bu değerleri programa dahil edebilmelidirler.

ÖNERİLER

Bu bölümde araştırmada elde edilen sonuçlar doğrultusunda uygulamaya ve araştırmacılara yönelik öneriler belirtilmiştir.

Uygulamaya Yönelik Öneriler

Çalışma sonucunda ortaokul matematik öğretim programı değerler bakımından yeterli olmadığı ve verilen değerlerin genel olarak örtük olarak verildiği tespit edilmiştir. Yapılacak matematik öğretim programı çalışmalarında değerlere daha fazla ve açık bir şekilde yer verilebilir. Öğretim programının kazanım kısımlarında değerler açıkça belirtilerek öğretmenlerin öğrencilere değerler kazandırılmasında yol gösterici olunabilir. Araştırma sonucunda değerlerin ünitelerde homojen bir şekilde dağılmadığı tespit edilmiştir. Yeniden oluşturulacak ders kitaplarında değerler homojen bir şekilde dağıtılabilir. Değer eğitimi kavramını içselleştiren öğretmen ve idareciler ile okullarda planlı ve programlı bir biçimde değer eğitimi verilebilir. Ders kitabı yazarlarına program okuryazarlığı becerileri eğitimi verilerek, değer eğitime yönelik bilgi, beceri ve uygulama becerileri geliştirilebilir.

Araştırmacılara Yönelik Öneriler

Bu çalışmada MEB yayınevinin yayınladığı matematik ders kitapları incelenmiştir. Araştırmacılar diğer yayınevlerinin yayınlarını inceleyebilirler. Bu çalışma bir doküman analizi çalışmasıdır. O yüzden basılı kaynaklardan veriler elde edilmiştir. Öğretmenlerin ders sürecinde hangi sosyal değerleri kazandırdıkları ile ilgili öğretmenlerin sınıf içi uygulamalarını inceleyen araştırmaların yapılması önerilebilir. Öğretmenlerin öğretim programında yer alan değerlere yönelik görüş ve uygulamalarının belirlendiği araştırmalar yapılabilir.

**LIFE SATISFACTION DURING UNIVERSITY EDUCATION PERIOD:
EXAMINATION OF ITS RELATIONSHIP WITH LONE WOLF PERSONALITY
AND POSITIVITY**

Nezir EKİNCİ¹

Ozan KORKMAZ²

Geliş Tarihi/Received: 09.05.2023

Elektronik Yayın/Online Published:20.06.2023

DOI: 10.48166/ejaes.1294700

ABSTRACT

Life satisfaction is one of the essential goals of individuals in life. Today, the effects of increasingly lonely working and acting behaviors on life satisfaction have not been sufficiently studied. This study investigated the mediating role of positivity in the relationship between university students' life satisfaction and the tendency to act and work alone (i.e., lone wolf personality). The participants of the research are 249 people. The age of the participants is between 18-29 (Mean = 22.28, SD = 4.00). The Life Satisfaction with Life Scale, Lone Wolf Scale, and Positivity Scale were used as data collection tools in the study. The data were analyzed with the structural equation modeling method. According to the results, the lone wolf personality affects life satisfaction. In addition, it has been determined that positivity has a fully mediating role in the relationship between life satisfaction and lone wolf personality. The findings were discussed in the context of the literature.

Keywords: Life satisfaction; positivity; lone wolf personality; university education period; well-being.

¹Dr. Öğretim Üyesi, Karamanoğlu Mehmetbey Üniversitesi, Karaman, Türkiye, ekincinezir@gmail.com, ORCID: 0000-0002-2065-2992

²Dr. Öğretim Üyesi, Karamanoğlu Mehmetbey Üniversitesi, Karaman, Türkiye, pd.ozankorkmaz@gmail.com, 0000-0002-0541-200X

ÜNİVERSİTE EĞİTİMİ DÖNEMİNDE YAŞAM DOYUMU: YALNIZ KURT KİŞİLİK VE POZİTİFLİK İLE İLİŞKİSİNİN İNCELENMESİ

ÖZET

Yaşam doyumu, bireylerin yaşamdaki temel amaçlarından biridir. Günümüzde giderek artan yalnız çalışma ve hareket etme davranışlarının yaşam doyumu üzerindeki etkileri yeterince araştırılmamıştır. Bu çalışma, üniversite öğrencilerinin yaşam doyumları ile yalnız hareket etme ve çalışma eğilimleri (yani yalnız kurt kişiliği) arasındaki ilişkide pozitifliğin aracı rolünü araştırmıştır. Araştırmanın katılımcıları 249 kişidir. Katılımcıların yaş aralıkları 18-29 arasındadır (Ortalama = 22.28, SS = 4.00). Araştırmada veri toplama araçları olarak Yaşam Doyumu Ölçeği, Yalnız Kurt Ölçeği ve Pozitiflik Ölçeği kullanılmıştır. Veriler yapısal eşitlik modellemesi yöntemi ile analiz edilmiştir. Bulgulara yalnız kurt kişiliği yaşam doyumunu etkilemektedir. Ayrıca yaşam doyumu ile yalnız kurt kişiliği arasındaki ilişkide pozitifliğin tam aracı role sahip olduğu tespit edilmiştir. Bulgular literatür bağlamında tartışılmıştır.

Anahtar Kelimeler: Yaşam doyumu; pozitiflik; yalnız kurt kişiliği; üniversite eğitimi dönemi; iyi oluş.

1. INTRODUCTION

Happiness is one of the main goals of human existence (Datu & King, 2016). This goal is seen as the highest and best motivation for human action. Throughout the history of humanity, it has always been a matter of curiosity about how happiness is obtained, preserved, or increased (Diener, 1984). This curiosity has started to take place in psychology and its research subjects. There are many different definitions of "What is happiness?". The main reason why the definitions are different is that happiness is obtained in many different ways. In this context, for happiness, the individual needs to be aware of the strengths and virtues in the main areas of life and develop them. Our life responsibilities, choice of job and spouse, parenting, finding purpose and meaning are the ways individuals achieve happiness (Seligman, 2002a). These ways have made happiness at the top of the topics of interest in every period of life (Civitci, 2012). The university education period, which is one of the critical periods in an individual's life, is an essential stage for business and professional development. University students struggle with developmental tasks and risks such as profession, work, and relationships during this period. In this period, high life satisfaction is seen as a protective factor. In this context, it can be said that it would be important to conduct studies on university students' life satisfaction (Isik, 2021).

Personality traits and subjective evaluations of individuals are closely related to life satisfaction. In previous studies, the individual's happiness was discussed in the context of variables such as quality of life, well-being, and life satisfaction (Dost, 2007). Happiness is called subjective well-being according to positive psychology. Subjective well-being consists of positive and negative affect and life satisfaction sub-dimensions. Positive and negative affect is the emotional dimension, and the area in which the satisfaction of life is evaluated is the cognitive dimension. With general cognitive evaluation, this dimension is life satisfaction (Diener, 1984; Diener et al., 1985). Life satisfaction occurs as a result

of the individual's subjective evaluation of life standards and quality (Schalock & Felce, 2004). In the studies on life satisfaction, the relationships between the individual's living standards and personality traits and life satisfaction were examined (Yilmaz & Arslan, 2013). Gender, age, personality traits, quality of close relationships, vocational satisfaction, and self-esteem are important variables that affect an individual's life satisfaction (Diener, 1984).

There are variables in the literature that have significant relationships with life satisfaction. In a study, the relationships between university students' future orientation, career adaptability, and life satisfaction were examined (Cabras & Mondo, 2018). In another study, the relationships between university students' life satisfaction and academic self-efficacy, positive relationships, and psychological resilience were examined (Mao et al., 2022). There are studies in which hope, self-efficacy, and personality traits have significant relationships with life satisfaction (Atilla & Yildirim, 2023; Ekinci & Koc, 2023; van Zyl & Dhurup, 2018). Some studies reveal the relationship between perceived social support, spiritual well-being, and life satisfaction among university students (Alorani & Alradaydeh, 2018). On the other hand, significant relationships were found between social skills and life satisfaction. In addition, it is seen that life satisfaction is also related to loneliness (Ozben, 2013).

1.1. Lone Wolf Personality: Its Relationship with Life Satisfaction

An individual's personality traits are one of the strongest and most consistent predictors of life satisfaction (Diener et al., 1999). As the social skill level of the individual increases, loneliness decreases. In addition, as the level of loneliness decreases, life satisfaction increases (Ozben, 2013). Preferring to be alone while making decisions and determining life goals is defined as the lone wolf personality trait. In addition, individuals with this characteristic are less patient with others. Besides, they see the influence of other individuals less, and they value their ideas less (Dixon et al., 2003). Since lone wolves prefer to make decisions and work alone, they do not like the ideas and group processes of others (Barr et al., 2005). Therefore, individuals with high lone wolf personality traits have less social and organizational ties. On the other hand, adapting and getting used to external conditions is one of the important components of life satisfaction (Diener et al., 1999). In addition, life satisfaction is formed not only by meeting the individual's basic needs, but also by reaching the life goals (Bradley & Corwyn, 2004). Based on this information, it can be said that the lone wolf personality trait of the individual may be related to the level of life satisfaction. In this context, the following hypothesis was developed to be tested.

H₁: The lone wolf personality predicts life satisfaction.

1.2. Positivity: The Mediating Role in the Relationship Between Lone Wolf Personality and Life Satisfaction

In recent years, the influence and contribution of positive psychology, as well as the examination and development of the positive characteristics of the individual, have increasingly become the focus of research (Seligman & Csikszentmihalyi, 2000). It is considered necessary for the individual to evaluate himself/herself and her/his life experiences with a positive attitude in order to fulfill her life functions

at the most appropriate level (Caprara et al., 2009). Positivity is a personality trait that reveals whether the individual exhibits a positive attitude towards both herself/himself and the situations they encounter in life. An individual's trust in other people, life satisfaction, self, and future expectations affect the level of positivity (Cikrikci et al., 2015). This attitude of the individuals contributes to coping with the failures and negativities they encounter. As a result, the individual cares about life, and the development of the individual continues positively (Alessandri et al., 2012; Caprara et al., 2010).

In the positive psychology movement, both researchers and practitioners are working on what the most appropriate level of functionality of the individual is and how it works (Caprara et al., 2012a). In previous studies on the level of positivity, it is seen that positivity is associated with life satisfaction, optimism, and self-esteem (Caprara et al., 2010). Positivity is also defined as the ability of individuals to regulate their happiness experiences to the highest level. This regulation skill predicts life satisfaction through positive emotions (Datu & King, 2016). In a study, the mediating role of positivity was determined between extraversion and happiness (Lauriola & Iani, 2017). In another study, significant relationships were found between positivity and psychological well-being (Boyaci, 2019; Boyaci & Ozhan, 2021; Ozhan & Uzbe-Atalay, 2022). In another study, it was found that high levels of positivity act as a mediator between emotional intelligence and life satisfaction (Moroń, 2018). In an experimental study, it was concluded that the 6-week positivity training given to the workplace employees increased the life satisfaction of the employees (Lord et al., 2019). In another study, significant relationships were found between the individual's level of positivity and career future and cognitive flexibility levels (Yildiz-Akyol & Boyaci, 2020). In addition, it was observed that there was a positive significant relationship between positivity and hope and a negative significant relationship with burnout (Boyaci & Ozhan, 2021). It was also determined that there was a significant relationship between positivity and social support (Boyaci, 2019).

One of the critical factors affecting an individual's life satisfaction is their relationships with other people. An important area of well-being models includes relationships with other people, success, and positive affect (Ryff, 1989; Ryff & Keyes, 1995; Seligman, 2018). The critical area of life where both relationships with other people and success occur are professional experiences. Professional experience and activities affect life satisfaction. An increase is also observed in studies conducted to increase job satisfaction. In a study, significant relationships were found between the level of positivity and job satisfaction of the individual (Orkibi & Brandt, 2015). The results of the research examining the individual's job activities and organizational commitment also reveal the positive relationship between positivity and life satisfaction (Hausmann et al., 2013). In addition, those with high lone wolf personality were found to have low organizational commitment (Dixon et al., 2003). In another study, it was determined that the lone wolf personality had a significant indirect effect on life satisfaction through career adaptability and proactive career behaviors (Korkmaz, 2023). In a study conducted with sales representatives, negative relationships were found between lone wolf personality and cognitive trust, affective trust, and team orientation, while positive relationships with autonomy (Dixon et al., 2003). In

another study, it was determined that the inclusion of students with high lone wolf personality traits in study teams had negative effects on group performance (Barr, 2005). It can be said that an individual should be involved in effective teamwork to succeed in job life. Communication, cooperation, and compromise skills are required for this effective teamwork (Katzenbach 1997). The following hypothesis has been developed in line with the literature information mentioned above.

H₂: Positivity has a mediating role in the relationship between lone wolf personality and life satisfaction.

1.3. The Present Study

Problem-focused traditional psychology approaches function according to the disease model, which strives for the individual's reduction or complete disappearance of the disorder (Hefferon & Boniwell, 2011). On the other hand, positive psychology aims not only to examine the problem, illness, and mental weakness of the individual but also to research and develop their strong and good characteristics (Seligman, 2002). In other words, positive psychology does not focus only on the positive aspects of people and their lives. It accepts both positive and negative aspects of people and life by taking a holistic approach (Demir & Fulya, 2020). In this context, examining the effects of acting alone and working alone, which can be considered as negative aspects of university students, and the effects of positivity levels on general life satisfaction is appropriate for the positive psychology approach. Therefore, the theoretical framework of this study is positive psychology.

The study group of this research consists of university students. University life is a process that encompasses important changes both in the personal and career fields of the individual (Kim, 2019). This process is a challenging phase for university students with sudden changes in career, social and emotional problems (Boyaci, 2019). University students' life satisfaction is seen as an important factor in this challenging process. The relationship between lone wolf personality and life satisfaction has been determined in previous studies (Korkmaz, 2023). Acting and working alone, and not being able to communicate effectively with others can negatively affect both life satisfaction and job performance (Katzenbach 1997; Lauriola & Iani, 2017; Ozben, 2013). Positivity is defined as a positive attitude towards the difficulties and obstacles faced by the individual (Caprara et al., 2009; Cikrikci et al., 2015). In previous studies, significant relationships were obtained between positivity and life satisfaction, psychological well-being, and happiness (Boyaci & Ozhan, 2021; Caprara et al., 2010; Ozhan & Uzbe-Atalay, 2022). In this context, it is important to investigate the variables that affect the life satisfaction of university students. It is thought that examining the life satisfaction of university students will benefit the preventive, and protective guidance and psychological counseling services to be prepared by mental health professionals. The hypothetical structural model of the research is presented in Figure 1.

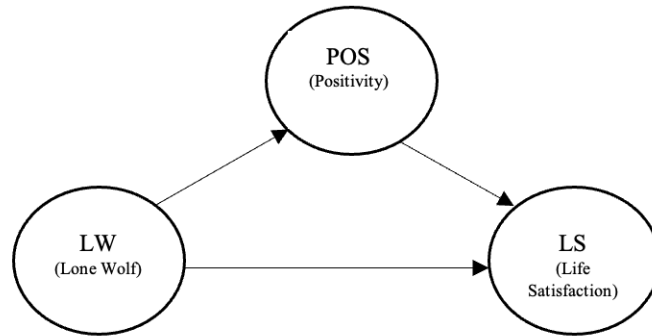


Figure 1. Research Model

2. METHOD

2.1. Participants

The study's participants are 249 university students from Turkiye in a province. Of the participants, 149 (59.8%) were female and 100 (40.2%) were male. The ages of the participants are between 18 and 29. The average age of the participants is 22.28 (SD = 4.00). The participants stated their socioeconomic levels as follows: 10.4% low (N = 26), 86.3% moderate (N = 2015), and 3.2% high (N = 8).

2.2. Data Collection Tools

Demographic information form (gender, age, perceived socio-economic level), Lone Wolf Scale, Positivity Scale, and Life Satisfaction Scale were used to collect the study data.

2.2.1. Lone Wolf Scale (LWS)

LWS was developed by Barr et al. (2005). It measures the lone wolf tendencies of individuals. The scale, a 6-point Likert-type (1: Strongly disagree to 5: Strongly agree), consists of one dimension and seven items. The increase in the total scores obtained from the LWS indicates an increase in the lone wolf tendency. The Turkish version of the scale (Korkmaz, 2022) was used in the current study. The Cronbach Alpha internal consistency coefficient obtained from the data collected within the scope of the current study is .74.

2.2.2. Positivity Scale (PS)

PS was developed by Caprara et al. (2012b). It measures the general positivity levels of individuals. The scale, a 5-point Likert-type (1: Not appropriate at all to 5: Completely appropriate), consists of one dimension and eight items. The increase in the total scores obtained from the PS indicates an increase in the positivity. The Turkish version of the scale (Cikrikci et al., 2015) was used in the current study. The Cronbach Alpha internal consistency coefficient obtained from the data collected within the scope of the current study is .85.

2.2.3. The Satisfaction with Life Scale (SLS)

SLS was developed by Diener et al. (1985). It measures the life satisfaction levels of individuals. The scale, a 7-point Likert-type (1: Strongly disagree to 7: Strongly agree), consists of one dimension and five items. The increase in the total scores obtained from the SLS indicates an increase in the life satisfaction. The Turkish version of the scale (Koker, 1991) was used in the current study. The Cronbach Alpha internal consistency coefficient obtained from the data collected within the scope of the current study is .86.

2.3. Data Analysis

First, the distribution of the data was examined. In the distribution of the data, skewness, and kurtosis between ± 1.5 was taken as a criterion. Accordingly, the fact that the skewness and kurtosis values are in this range indicates that the distribution of the data is normal (Hair et al., 2010; Kline, 2011). When the skewness and kurtosis values of the variables of the current study are examined, it is seen that the distribution of the data is normal (see Table 1). First of all, descriptive statistics (mean, standard deviation, skewness, and kurtosis coefficients), internal consistency coefficients, and Pearson correlation coefficients were calculated within the scope of statistical analysis in the study. The mediating role of positivity in the relationship between lone wolf tendencies and life satisfaction was analyzed using the structural equation model. In assessing the model, $\chi^2/df < 5$; CFI, GFI $> .90$; RMSEA $< .10$ was taken as a good fit indices' criterion (Hu & Bentler, 1999). The bootstrap 10.000 resampling method was used to examine the significance of direct and indirect effects. In determining the significance, confidence intervals not covering zero were taken as the criterion (Hayes, 2013). IBM SPSS 28 and IBM AMOS 24 were used for data analysis.

2.4. Ethical Approval

An informed consent form was presented to the participants before the study. Individuals who wanted to participate in the study voluntarily were included. Within the scope of ethical standards, the 1975 Helsinki Declaration was followed.

3. FINDINGS

Descriptive statistics and correlation coefficients of the variables used in the study are presented in Table 1.

Table 1. Descriptive Statistics of the Variables

Variable	1	2	3
1. Lone wolf tendency			
2. Positivity	-.35		
3. Life Satisfaction	-.35	.72	
Mean	24.57	26.31	13.78
SD	5.75	5.44	3.76
Skewness	.70	-.27	-.26
Kurtosis	.56	.05	-.11

Note: N = 249. All correlations are significant at the $p < .001$ level.

As seen in the Table 1, the lone wolf tendency was negatively correlated with the positivity ($r = -.35, p < .001$) and the life satisfaction ($r = -.35, p < .001$). In addition, the positivity was positively correlated with the life satisfaction ($r = .72, p < .001$). Figure 1 shows the mediating role of positivity in the relationship between the lone wolf tendency and the life satisfaction.

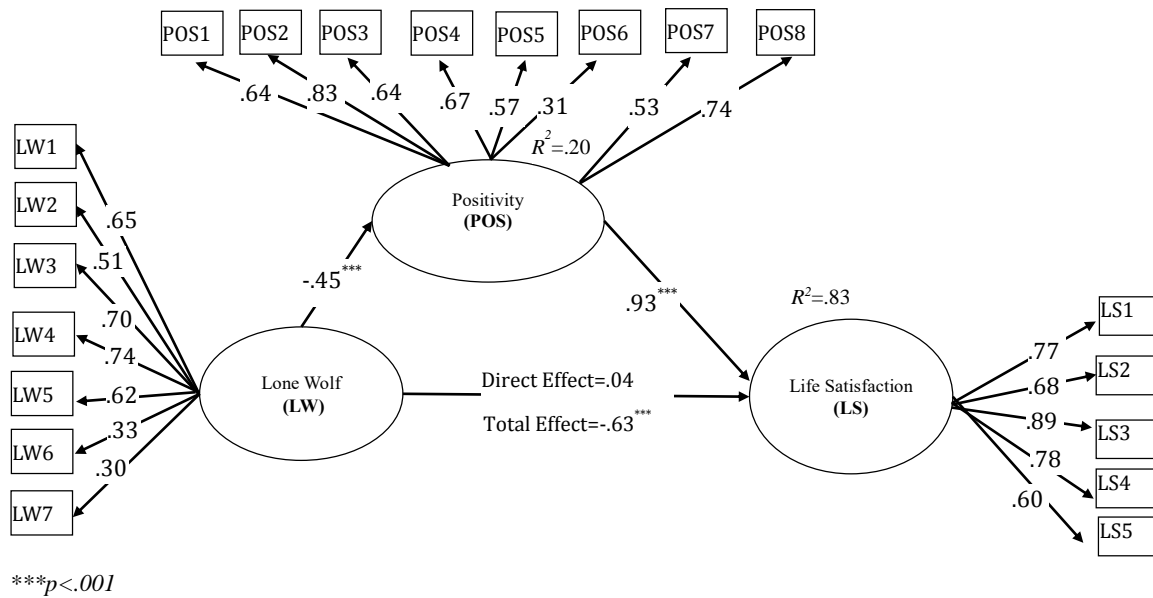


Figure 1. Findings Regarding the Research Model

It has been obtained that fit indices of the research model show good fit [$\chi^2 = 464.482, df = 163, p < .001, \chi^2/df = 2.85; GFI = .91; CFI = .94; RMSEA = .086$ (90% CI = .077 to .096)]. In the model, it is seen that the lone wolf tendency predicts the positivity negatively ($\beta = -.45, p < .001$). In addition, it was found that the direct effect of the lone wolf tendency on the life satisfaction was not significant. The indirect effect of the lone wolf tendency on life satisfaction is significant ($\beta = -.42, p < .001$). In other words, the positivity has a full mediator role in the relationship between the lone wolf tendency and the life satisfaction. The findings regarding the confidence intervals of the direct and indirect effects of the variables are given in Table 2.

Table 2. Mediation Analysis Findings

Pathway	B	S.E.	C.R.	Coefficient	CI Lower-bound	CI Upper-bound
<i>Total effect</i>						
LW→LS				-.63***	-1.77	-.32
<i>Direct effects</i>						
LW → POS	-.74	.23	-3.21	-.45***	-.57	-.30
POS → LS	.95	.10	9.17	.93***	.85	1.01
LW → LS	.06	.10	.67	.04	-.09	.19
<i>Indirect effect</i>						
LW → POS → LS				-.41***	-.56	-.27

*** $p < .001$; $N = 249$.

Note: CI: Confidence Interval Bias %95; LW: Lone Wolf Scale; POS: Positivity Scale; LS: Life Satisfaction Scale.

4. DISCUSSION

In this study, the extent to which university students' lone wolf personality and positivity levels predict their life satisfaction was analyzed using the structural equation model. As a result, it was determined that the lone wolf personality of university students significantly predicted their life satisfaction. Another result of the study is that university students' positivity levels have a fully mediating role in the relationship between lone wolf personality and life satisfaction.

The first finding of the study is that the lone wolf personality predicts life satisfaction negatively. Therefore, the H_1 hypothesis was accepted. There are a limited number of studies in the literature in which the lone wolf personality predicts life satisfaction (e.g., Korkmaz, 2023). In this current study, it was observed that the lone wolf personality had a negative effect on life satisfaction. In the literature, there are negative significant relationships between lone wolf personality, cognitive and emotional trust, and team orientation. In addition to these findings, it was observed that there were negative significant relationships between lone wolf personality and organizational commitment (Dixon et al., 2003). On the other hand, in the literature, it is considered necessary for the individual to be involved in teamwork in her professional activities. Collaboration and compromise are also required for functional teamwork (Katzenbach 1997). Not exhibiting an attitude towards cooperation and reconciliation with others can negatively affect teamwork performance (Barr, 2005). In addition, there is a negative relationship between social skills and loneliness and a negative relationship between loneliness and life satisfaction (Ozben, 2013). In other words, not having a cooperative and conciliatory attitude and weak social skills increase loneliness, and loneliness decreases life satisfaction. In the context of these pieces of information, it can be said that the lone wolf personality is effective in reducing life satisfaction.

In this study, it was also aimed to examine the mediating role of positivity in the relationship between lone wolf personality and life satisfaction. As a result of the analysis, it was determined that positivity had a fully mediating role in the relationship between lone wolf personality and life satisfaction. Therefore, the H₂ hypothesis was accepted. This result means that with the increase in the positivity levels of university students, the negative effect of the lone wolf personality on life satisfaction decreases. In other words, positivity functions to reduce the negative reflections of the lone wolf personality trait on life satisfaction. The individual's positive expectations about herself/himself and the future increase the level of positivity (Caprara et al., 2009; Cikrikci et al., 2015). There is a significant relationship between future orientation, having long-term goals, and reaching these goals and life satisfaction (Cabras & Mondo, 2018). As the tendency to evaluate one's life positively increases, the level of a positive outlook towards the future increases in parallel. At the same time, as their life satisfaction increases, their level of optimism also increases (Avsaroglu & Koc, 2019; Demir & Murat, 2017). Optimism explains a significant part of life satisfaction (Sapmaz & Dogan, 2012). In addition, individuals with high hope levels get more satisfaction from life (Atilla & Yildirim, 2023; Ekinci & Koc, 2023). In another study, a positive and significant relationship was found between optimism and subjective well-being (Eryilmaz & Atak, 2011). In this context, it can be said that positive attitudes about the future are an important predictor of life satisfaction. An individual's positive attitude towards herself/himself and the idea of self-efficacy facilitate both life satisfaction and happiness (van Zyl & Dhurup, 2018). General positivity was found to mediator between the extroversion personality and happiness (Lauriola & Iani, 2017). In addition, prioritizing a positive attitude is associated with higher life satisfaction through positive emotions (Datu & King, 2016; Moroń, 2018). The results of the research examining the professional activities and organizational commitment of the individual also support the positive relationship between positivity and life satisfaction (Hausmann et al., 2013). On the other hand, there is a significant relationship between university students' positive interpersonal relationships and life satisfaction. Positive attitudes and giving importance to other individuals contribute to life satisfaction (Mao et al., 2022). In another study, it was found that social skills and life satisfaction were positively and significantly correlated, while the level of loneliness was negatively correlated with life satisfaction (Ozben, 2013). Social support perceived by university students increases their life satisfaction. Establishing positive relationships with others and receiving social support contribute to life satisfaction (Alorani & Alradaydeh, 2018). Lone wolves prefer to decide and work alone in their individual and social activities. They consider others to be less effective and place little value on the opinions of others. As a result, they show little patience and participation in group processes (Barr et al., 2005; Dixon et al., 2003). It was also found that including lone wolves in teams negatively impacted student team performance (Barr et al., 2005). On the other hand, it has been revealed as a result of research that the positive orientation of the individual is a personal resource that increases the job satisfaction of the employees (Orkibi & Brandt, 2015). In this context, it can be said that the relevant literature and previous research results are consistent with the findings of the current study. In line with

this information, it can be said that positive relations with others, cooperation, and a conciliatory attitude, as well as an increase in the individual's positive expectations for herself/himself and the future, increase life satisfaction.

5. CONCLUSION

This study revealed that positivity has a mediating role in the relationship between lone wolf personality and life satisfaction. The findings contribute to the understanding of the factors that increase the life satisfaction of university students in their education and career life. In addition, it is anticipated that the findings will shed light on the psychological counseling practices that protect and improve the mental health of students. Within the scope of the results of the current study, some suggestions can be made for research and application areas. In order to reduce the negative effects of the lone wolf personality on the relationship between the lone wolf personality trait and life satisfaction, research can be continued with other positive concepts such as hope and social skills. Thus, the role of the positive psychology approach can be better understood in this relationship. Career and psychological counseling and guidance units of universities can carry out activities that strengthen and protect students' ability to cooperate with the group, and their own and future expectations. Positive psychology differs from traditional psychology theories in that it develops and strengthens the existing positive characteristics of the individual rather than focusing on the negative or pathology (Seligman & Csikszentmihalyi, 2000). With this unique aspect, beneficial situations arise in terms of both research and practice. In this context, the current study has revealed that it is important to increase university students' perceptions of trust in people, construct relationships with others, and their expectations about themselves and the future in order to reduce the effect of lone wolf personality on life satisfaction. Therefore, it can be said that it is important to identify students who show a high level of lone wolf personality. The life satisfaction and positivity levels of students with high lone wolf personality can be evaluated together and appropriate studies can be planned for these students within the framework of the positive psychology approach.

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GENİŞLETİLMİŞ TÜRKÇE ÖZET

ÜNİVERSİTE EĞİTİMİ DÖNEMİNDE YAŞAM DOYUMU:

YALNIZ KURT KİŞİLİK VE POZİTİFLİK İLE İLİŞKİSİNİN İNCELENMESİ

GİRİŞ VE ARAŞTIRMA PROBLEMLERİ VE AMAÇ

Mutluluk, insan varoluşunun temel amaçlarından biridir. İnsanlık tarihi boyunca mutluluğun nasıl elde edildiği, nasıl korunduğu veya nasıl arttırıldığı hep merak konusu olmuştur. Mutluluk, pozitif psikolojiye göre öznel iyi oluş olarak adlandırılır. Öznel iyi oluş, olumlu ve olumsuz duygulanım ve yaşam doyumunu alt boyutlarından oluşmaktadır. Olumlu ve olumsuz duygulanım duygusal boyut, yaşam doyumunun değerlendirildiği alan ise bilişsel boyuttur. Bilişsel olarak değerlendirilen bu boyut yaşam doyumudur. Bir bireyin kişilik özellikleri, yaşam doyumunun en güçlü ve en tutarlı yordayıcılarından biridir. Bireyin yalnız kurt kişilik özelliği yaşam doyum düzeyi ile ilişkili olabilir. Pozitiflik, bireyin hem kendine hem de hayatta karşılaştığı durumlara karşı olumlu bir tutum sergileyip sergilemediğini ortaya koyan bir kişilik özelliğidir. Bireyin diğer insanlara olan güveni, yaşam doyumunu, kendisi ve gelecekte beklenenleri olumluluk düzeyini etkiler. Bireyin yaşam doyumunu etkileyen önemli faktörlerden biri diğer insanlarla olan ilişkileridir. İyi oluş modellerinin önemli bir alanı, diğer insanlarla ilişkileri, başarıyı ve olumlu etkiyi içerir. Bu araştırmanın çalışma grubu üniversite öğrencilerinden oluşmaktadır. Üniversite hayatı, bireyin hem kişisel hem de kariyer alanlarında önemli değişiklikleri kapsayan bir süreçtir. Bu bağlamda üniversite öğrencilerinin yaşam doyumlarını etkileyen değişkenlerin araştırılması önemlidir. Üniversite öğrencilerinin yaşam doyumlarının incelenmesinin, ruh sağlığı profesyonelleri tarafından hazırlanacak önleyici ve koruyucu rehberlik ve psikolojik danışma hizmetlerinin yararına olacağı düşünülmektedir.

LİTERATÜR TARAMASI

Literatürde yaşam doyumunu ile anlamlı ilişkileri olan değişkenler bulunmaktadır. Yapılan çalışmalarda üniversite öğrencilerinin gelecek yönelimi, kariyer uyumu, akademik öz-yeterlik, olumlu ilişkiler, psikolojik sağlamlık ve yaşam doyumunu arasındaki ilişkiler incelenmiştir. Umut, öz yeterlik ve kişilik özelliklerinin yaşam doyumunu ile anlamlı ilişkilere sahip olduğu araştırmalar mevcuttur. Ayrıca üniversite öğrencilerinde manevi iyi oluş, algılanan sosyal destek ve yaşam doyumunu arasındaki ilişkiyi ortaya koyan araştırmalara rastlamak mümkündür. Öte yandan, sosyal beceriler ile yaşam doyumunu arasında anlamlı ilişkiler bulunmuştur. Ayrıca yaşam doyumunun yalnızlıkla da ilişkili olduğu görülmektedir. Kişilik özelliklerinin bireylerin yaşam doyumunun güçlü ve en tutarlı yordayıcıları olduğu bilinmektedir. Bu çalışmada bireyin tek başına hareket etme ve çalışma özelliğini yansıtan Yalnız Kurt kişilik özelliğinin yaşam doyumunu pozitiflik aracılığıyla ne düzeyde yordayabileceği çalışmanın

özgün yanını oluşturmaktadır. Özellikle Yalnız Kurt eğiliminde olmanın bireyin yaşamdan elde ettiği doyuma ne ölçüde yansıtacağı önemlidir. Üniversite öğrencilerinin yaşam ve çalışma hayatlarının başlarında olduğu düşünüldüğünde bu araştırmanın bulgularının üniversite öğrencilerine yönelik önemli sonuçlar üreteceği söylenebilir.

YÖNTEM

Bu araştırma ilişkisel desende yürütülmüştür. Araştırmada Yalnız Kurt kişilik özelliği ile pozitifliğin yaşam doyumu üzerindeki yordayıcılığının incelenmesi amaçlanmıştır. Ayrıca pozitifliğin Yalnız Kurt kişilik özelliği ile yaşam doyumu arasındaki ilişkide aracı rolü incelenmiştir. Bu kapsamda “H₁: Yalnız Kurt kişiliği yaşam doyumunu yordamaktadır.” ve “H₂: Yalnız Kurt kişiliği ile yaşam doyumu arasındaki ilişkide pozitifliğin aracı rolü vardır.” hipotezleri test edilmiştir. Çalışma Türkiye’den 249 üniversite öğrencisi ile gerçekleştirilmiştir. Verilerin toplanmasında cinsiyet, yaş, algılanan sosyoekonomik düzey bilgilerinin yer aldığı Demografik Bilgi Formu, Yalnız Kurt Ölçeği, Pozitiflik Ölçeği ve Yaşam Doyumu Ölçeği kullanılmıştır. Verilerin analizinde Pearson Korelasyon Analizi ile yapısal eşitlik modellemesi analiz yöntemleri kullanılmıştır.

TARTIŞMA VE SONUÇ

Analizlerden elde edilen sonuçlara göre Yalnız Kurt kişiliği yaşam doyumunu yordamaktadır. Ayrıca yaşam doyumu ile Yalnız Kurt kişiliği arasındaki ilişkide pozitifliğin tam aracı role sahip olduğu tespit edilmiştir. Araştırmanın ilk bulgusu, Yalnız Kurt kişiliğinin yaşam doyumunu olumsuz yönde yordadığıdır. Bu bulguya göre Yalnız Kurt kişiliğinin yaşam doyumunu azaltmada etkili olduğu söylenebilir. Araştırmanın bir diğer bulgusu ise yaşam doyumu ile Yalnız Kurt kişiliği arasındaki ilişkide pozitifliğin tam aracı role sahip olmasıdır. Bu bulgu, üniversite öğrencilerinin pozitiflik düzeylerinin artmasıyla birlikte Yalnız Kurt kişiliğinin yaşam doyumu üzerindeki olumsuz etkisinin azaldığı anlamına gelmektedir. Başka bir deyişle pozitiflik, Yalnız Kurt kişilik özelliğinin yaşam doyumu üzerindeki olumsuz yansımalarını azaltma işlevi görmektedir. Bu bilgiler doğrultusunda üniversite öğrencilerinde başkalarıyla olumlu ilişkiler, işbirliği ve uzlaşmacı bir tutumun yanı sıra bireyin kendisi ve geleceğe yönelik olumlu beklentilerinin artmasının yaşam doyumunu artırdığı söylenebilir. Bu çalışma pozitifliğin Yalnız Kurt kişiliği ile yaşam doyumu arasındaki ilişkide aracı rolü olduğunu ortaya koymuştur. Elde edilen bulgular, üniversite öğrencilerinin eğitim ve kariyer hayatlarında yaşam doyumlarını artıran faktörlerin anlaşılmasına katkı sağlamaktadır. Mevcut çalışmanın sonuçları kapsamında araştırma ve uygulama alanlarına yönelik bazı önerilerde bulunulabilir. Yalnız Kurt kişilik özelliği ile yaşam doyumu arasındaki ilişkide Yalnız Kurt kişiliğinin olumsuz etkilerini azaltmak için umut ve sosyal beceriler gibi diğer olumlu kavramlarla araştırmalara devam edilebilir. Böylece bu ilişkide pozitif psikoloji yaklaşımının rolü daha iyi anlaşılabilir. Üniversitelerin kariyer ve psikolojik danışma ve rehberlik birimleri, öğrencilerin grupta birlikte hareket etme, işbirliği yapma, kendi ve gelecekteki beklentilerini güçlendiren ve koruyan faaliyetler gerçekleştirebilir. Pozitif psikoloji, olumsuz ya da patolojiye odaklanmak yerine bireyin var olan olumlu özelliklerini

geliřtirmesi ve gçlendirmesiyle geleneksel psikoloji kuramlarından ayrılır. Bu eřsiz yön ile hem arařtırma hem de uygulama aısından faydalı durumlar ortaya çıkmaktadır. Bu baėlamda mevcut alıřma, Yalnız Kurt kiřiliėinin yařam doyumunu zerindeki etkisini azaltmak iin niversite ėrencilerinin insanlara gven algılarının artırılması, bařkalarıyla iliřki kurmaları, kendileri ve gelecekle ilgili beklentilerinin artırılmasının nemli olduėunu ortaya koymaktadır. Bu nedenle yksek dzeyde yalnız kurt kiřiliėi gsteren ėrencilerin belirlenmesinin nemli olduėu sylenebilir. Yalnız Kurt kiřiliėi yksek olan ėrencilerin yařam doyumları ve pozitiflik dzeyleri bir arada deėerlendirilebilir ve pozitif psikoloji yaklařımı erevesinde bu ėrenciler iin uygun alıřmalar planlanabilir.

**THE MEDIATING ROLES OF TRIANGULAR LOVE
COMPONENTS IN THE RELATIONSHIP BETWEEN ROMANTIC RELATIONSHIP
BELIEFS AND MARRIAGE ATTITUDES**

Müzeyyen SOYER¹

Önder SÜNBÜL²

Geliş Tarihi/Received: 20.05.2023

Elektronik Yayın/Online Published:20.06.2023

DOI: 10.48166/ejaes.1299809

ABSTRACT

This study examined the mediating roles of triangular love components (intimacy, passion, and commitment) in the relationship between university students' romantic relationship beliefs and marriage attitudes. The research sample consisted of 376 undergraduate students, 289 of whom were female and 87 were male, studying at a public university. In addition to the Personal Information Form, four measurement tools, namely the İnönü Marriage Attitude Scale, the Sternberg Triangular Love Scale (STLS and STLS-M forms), and the Romantic Relationship Beliefs Scale, were employed in this study. According to the study results, romantic relationship beliefs significantly and positively predicted triangular love components, triangular love components predicted marriage attitude, and romantic relationship beliefs predicted marriage attitudes. Another finding of the study, the triangular love components, intimacy had a partial mediating role, while passion and commitment had full mediating roles in the relationship between romantic relationship beliefs and marriage attitudes. All the adjustments regarding the collected data were conducted in the R programming environment. The findings were discussed based on the existing literature, followed by suggestions for various practices in the field and future studies.

Keywords: Attitudes toward marriage; triangular love; romantic relationship beliefs

¹ Dr., Mersin University, Mersin, Türkiye, mkarslan@mersin.edu.tr, ORCID: 0000-0002-4596-4116

² Assoc. Dr., Mersin University, Mersin, Türkiye, ondersunbul@gmail.com, ORCID: 0000-0002-1775-1404

ROMANTİK İLİŞKİ İNANÇLARI VE EVLİLİK TUTUMLARI ARASINDAKİ İLİŞKİDE ÜÇGEN AŞK BİLEŞENLERİNİN ARACI ROLÜ

ÖZET

Bu araştırmada, üniversite öğrencilerinin romantik ilişki inançları ve evlilik tutumu arasındaki ilişkide üçgen aşk bileşenlerinin (yakınlık, tutku ve bağlılık) aracı rolü incelenmiştir. Araştırmanın örneklemini, bir kamu üniversitesinde öğrenim gören 289'u kadın, 87'si erkek olmak üzere toplam 376 lisans öğrencisinden oluşmaktadır. Bu araştırmada Kişisel Bilgi Formunun yanı sıra, İnönü Evlilik Tutum Ölçeği, Sternberg Üçgen Aşk Ölçeği (ÜAÖ-A ve ÜAÖ-B formları) ve Romantik İnançlar Ölçeği olmak üzere toplam dört ölçme aracı kullanılmıştır. Araştırma sonuçlarına göre, romantik ilişki inançları üçgen aşk bileşenlerini, üçgen aşk bileşenleri evlilik tutumunu ve romantik ilişki inançları evlilik tutumlarını anlamlı ve pozitif yönde yordamaktadır. Araştırmanın bir diğer bulgusu, üçgen aşk bileşenleri, romantik ilişki inançları ile evlilik tutumları arasındaki ilişkide yakınlığın kısmi aracı role sahip olduğu, tutku ve bağlılığın ise tam aracı role sahip olduğudur. Elde edilmiş olan verilere ilişkin bütün düzenlemeler, R programlama ortamında gerçekleştirilmiştir. Elde edilen bulgular, alanyazın temelinde tartışılmış ve ardından alandaki çeşitli uygulamalara ve gelecek çalışmalara yönelik öneriler sunulmuştur.

Anahtar Kelimeler: Evliliğe yönelik tutum; üçgen aşk; romantik ilişki inançları

1. INTRODUCTION

People go through many processes throughout their lives and develop and continue their lives with the impact of these processes. Sometimes, they make decisions in this ongoing flow of life and add new meaning to their lives. Marriage is considered a life mission that individuals should fulfill in most societies (Cüceloğlu, 2019). Indeed, it is believed that individuals need to get married in order to complete romantic relationships according to social norms. In this context, individuals often feel the need to share their lives with another person after completing certain developmental tasks, and as a result, they consider finding a suitable spouse and getting married (Ondaş, 2007). The importance of the decision to get married increases, as it constitutes a crucial turning point in individuals' lives, and the time spent in marriage covers a significant part of their lives. Indeed, individuals' thoughts and beliefs about marriage and their established positive and negative attitudes are important determinants in deciding whether to get married (Park & Rosen, 2013). Attitudes towards marriage are expressed as individuals' expectations about marriage, the meanings they attribute to marriage, and all family relationships they expect to have in the future (Willoughby, 2010). The meanings and values that individuals attribute to marriage affect their attitude towards marriage in a positive or negative direction (Karabacak & Çiftçi, 2016). Therefore, a positive attitude increases individuals' likelihood of getting married, while a negative attitude may cause them to distance themselves from marriage. In addition, attitudes towards marriage are also reflected in individuals' experiences in their romantic relationships. It is stated that individuals who have a positive attitude toward marriage exhibit more positive behaviors in their relationships and have more positive experiences (Etcheverry & Le, 2005; Larson, Benson, Wilson, & Medora, 1998).

One of the variables examined in this study is romantic relationship beliefs. Romantic relationship beliefs encompass individuals' perceptions and expectations about their romantic relationships. Indeed, many individuals start a relationship with the various beliefs that they should love the person they are emotionally together with and that the relationship should be a mutually satisfying process. Therefore, almost everyone has some basic pre-existing beliefs about how their ongoing relationship should be (Sprecher & Metts, 1999). Sprecher and Metts discuss these beliefs in four dimensions: "love at first sight", "one and only", "idealization", and "love finds a way". These beliefs are learned through other socialization channels where observed marriages, media, cultural values, and norms are shared. As such, it is argued that these beliefs, formed through media reflections and popular definitions, affect attitudes toward marriage (Sharp & Ganong, 2000). Romantic relationship beliefs are necessary to some extent in terms of empowering the relationship (Sprecher & Metts, 1999). Sprecher and Metts argue that beliefs about romantic relationships reflect romantic ideology and indicate the level of romanticism, which is the increasing relationship expectations in an individual's romantic relationship. From a parallel perspective, according to Anderson (2005), the ideology of romantic love includes basic beliefs such as love at first sight is possible, love is the most important foundation for marriage, true love lasts forever, and love can overcome all obstacles (Weaver & Ganong, 2004). In the meantime, the ideology of love is an expression of the extraordinary power of love that suggests we can overcome all obstacles if we are with our soul mate. Thus, individuals tend to expect to be attached to their partners with passionate and romantic love (Sharp & Ganong, 2000). Similarly, it is observed that the relationship satisfaction of spouses increases when they idealize each other more or express that their emotional level is higher (Sprecher & Metts, 1999).

In this study, the mediating effect of the variable that will be examined in the relationship between romantic relationship beliefs and marriage attitudes is individuals' levels of triangular love. When the literature is examined, the most important motivation for romantic relationships is expressed as love. In many cultures, marriage and romantic love are seen as sources of self-expression and self-realization (Acevedo & Aron, 2009). In this respect, perceptions, attitudes, and expectations towards love appear to be significant determinants of individuals' positive feelings in their lives and future marriage processes. One of the important theories explaining love is Sternberg's (1986) triangular theory of love. In this theory, love is represented by three components: "intimacy", "passion", and "commitment," which are assumed to represent the emotional, motivational, and cognitive aspects of love. Sternberg points out that each component reveals a different aspect of love, and the perceived intensity of love increases or decreases depending on these components. Of these components, *intimacy* reflects the need for mutual understanding with the romantic partner, such as honesty and intimacy. It also involves mutual self-disclosure, sharing secrets, and feeling close emotions toward each other. *Passion* reflects physical attraction, sexual arousal, and the need for physical intimacy with a romantic partner. Therefore, the passion component constitutes the motivational aspect of the relationship that

leads to romance, physical attraction, and sexual intercourse. *Commitment* reflects the need for the relationship to have meaning for the future and the need to decide on that relationship. In other words, the commitment component signifies one's decision to love someone at a certain point in time and to continue their commitment to maintaining this love in the ongoing process (Sternberg, 1997).

The study group addressed in this study consists of university students. The university years, when romantic relationships begin to develop, are crucial because they are a period in which students enter into more meaningful and serious romantic relationships. As stated in Erikson's (1968) psychosocial development theory, students are in the "intimacy versus isolation" period in this period and feel the need to establish intimacy with the opposite sex. Similarly, Havighurst (1980) emphasizes that individuals entering the young adulthood period should accomplish developmental tasks related to career choice and mate selection. In addition, romantic relationships established during university years determine the quality of intimate relationships to be established in adulthood and the individual's mate selection in the marriage process (Furman, 2002). At the same time, it is thought that determining the romantic relationship beliefs of individuals will affect their perspectives on marriage and the mate selection process. From this perspective, it is estimated that the studies carried out to transform expectations and beliefs about love into more realistic beliefs will lead to healthier marriage processes. In conclusion, it would be meaningful to examine the mediating roles of intimacy, passion, and commitment, the three components of triangular love, in the relationship between university students' romantic relationship beliefs and their attitudes towards marriage.

2. METHOD

2.1. Study Group

The study group includes 376 university students enrolled in various faculties of a public university, determined through a random sampling method. The study group consisted of 289 (77%) female and 87 (23%) male students.

2.2. Data Collection Tools

2.2.1. Personal Information Form

To describe the sample group, a questionnaire prepared by the researchers under the name of "Personal Information Form" was administered to determine the participants' department, class, gender, age, and whether they had romantic relationships.

2.2.2. Inonu Marriage Attitude Scale (IMAS)

The IMAS, developed by Bayoğlu and Atli (2014), is used for measuring individuals' attitudes toward marriage. The IMAS is a unidimensional scale that is assessed based on the total score. It is a 5-point Likert scale, where the level of agreement for each statement is rated on a scale of 1 (strongly disagree) to 5 (strongly agree). The lowest obtainable score from the total of the scale is 21, and the highest score is 105. High scores indicate positive attitudes toward marriage, while low scores indicate negative attitudes toward marriage (Bayoğlu & Atli, 2014). Cronbach's alpha reliability coefficient was reported as 0.90 in the original study where the scale was developed. Within the scope of this study, the item-total test correlations of this scale ranged from 0.375 to 0.763. In addition, the calculated Cronbach alpha internal consistency coefficient was 0.931. All these calculations show that the reliability of the scale is at a sufficient level.

2.2.3. Romantic Beliefs Scale (RBS)

The RBS was developed by Sprecher and Metts in 1989. This scale, which measures the beliefs identified as constituents of romantic ideology, was adapted to Turkish by Küçükarslan and Gizir (2013). The lowest score that can be obtained from the RBS, which uses a 5-point Likert-type rating, is 13 and the highest score is 65. Furthermore, each item in the scale is rated from 1 (strongly disagree) to 5 (strongly agree). The scale consists of 13 items under four factors called *love finds a way*, *one and only*, *idealization*, and *love at first sight*. At the same time, the scale is also assessed based on the total score, where the lowest obtainable score is 13, and the highest score is 65. The total score obtained from the scale determines an individual's level of romanticism. According to the results of the reliability studies of the RBS, Cronbach's alpha value obtained to determine the internal consistency of the scale was 0.84, and the test-retest reliability was 0.83. Within the scope of this study, the item-total test correlations of this scale ranged from 0.449 to 0.665. In addition, the calculated Cronbach alpha internal consistency coefficient was 0.874. All these calculations show that the reliability of the scale is at a sufficient level.

2.2.4. Sternberg Triangular Love Scale (STLS)

The STLS (Sternberg, 1997) aims to measure the levels of intimacy, commitment, and passion of individuals in romantic relationships within the framework of the triangular theory of love. Accordingly, an individual's amount of love or level of perceived intensity toward love depends on the absolute strength of these three components. Soyer and Gizir (2021) adapted the scale to Turkish and reported that it had a 24-item, three-factor (intimacy, commitment, and passion) structure. Participants respond to the scale items using a 9-point Likert-type rating, where each item is responded to on a scale

of 1 (strongly disagree) to 9 (strongly agree). Cronbach's alpha internal consistency coefficient of the STLS has been reported as 0.96 and its test-retest reliability as 0.95.

2.2.5. Sternberg Triangular Love Scale – Modified (STLS-M)

The STLS-M (Soloski, Pavkov, Sweeney, & Wetchler, 2013) is a revised version of the STLS, used for determining the thoughts and expectations of individuals having no romantic relationships regarding the components of *intimacy*, *passion*, and *commitment* mentioned in the triangular theory of love. The Turkish adaptation of the scale was carried out by Soyer and Gizir (2021), and similar to the STLS, the STLS-M had a 24-item and three-factor structure (intimacy, commitment, and passion). Participants respond to the scale items based on a 9-point Likert-type rating scale, with response categories of 1 (strongly disagree) to 9 (strongly agree). The internal consistency of the Turkish STLS-M is 0.95, and its test-retest reliability coefficient is 0.81. In this study, the original version of the Triangular Love Scale (Sternberg, 1997) was used for university students having romantic relationships, and the adapted version of the Triangular Love Scale was used for individuals having no romantic relationships (Soloski, Pavkov, Sweeney, & Wetchler, 2013), named STLS and STLS-M, respectively. Soyer (2019) examined the validity, reliability, and measurement equivalence of the STLS and STLS-M scales. As a result of examining their measurement equivalence, it was determined that the STLS and STLS-M had a 24-item three-factor structure (intimacy, commitment, and passion) and satisfied the measurement equivalence criteria. Within the scope of this study, the item-total test correlations of this scale ranged from 0.341 to 0.774. In addition, the calculated Cronbach alpha internal consistency coefficient was 0.943. All these calculations show that the reliability of the scale is at a sufficient level.

2.3. Procedure

Initially, necessary permissions were obtained from Mersin University Social Sciences Research Ethics Committee during the study. After the research model and sample were determined, a personal information form was prepared. During the applications process, the participation of participants in the study was voluntary. In classroom applications, the purpose of the study and the instructions for the application of measurement tools were explained to the participants. The scales were administered by the researchers, and the approximate time determined was 20 minutes.

2.4. Data Analysis

The data were analyzed using the SPSS 22 program. All the adjustments regarding the collected data were conducted in the R programming environment. Mediation analysis was conducted according to the Hayes Approach based on Baron and Kenny's (1986) steps. Mediation analyses and visualizations were carried out using the Psych package.

3. FINDINGS

The analysis results for the mediating effects of triangular love components (intimacy, passion, and commitment) in the relationship between romantic relationship beliefs and marriage attitudes are displayed in Tables 1, 2, and 3, respectively, following the mediation analysis steps.

Table 1. Hayes Mediation Analysis Results for the Mediation Role of Intimacy (A1) in the Relationship between Romantic Relationship Beliefs and Marriage Attitudes

	Coefficient	Standard Error	<i>t</i>	<i>df</i>	<i>p</i>	LLCI	ULCI
D → C (c)	0.46	0.11	4.05	374	0.001		
D → C (c')	0.26	0.13	2.04	373	0.042		
D → A1 (a)	0.58	0.06	10.24	374	0.001		
A1 → C (b)	0.35	0.1	3.39	373	0.001		
Indirect effect (ab)	0.2					0.09	0.34

Note: A1: Intimacy; A2: Passion; A3: Commitment; D: Romantic Relationship Beliefs; C: Marriage Attitudes

As seen in Table 1, the Baron and Kenny mediation steps were fulfilled. However, when the mediating variable of intimacy was included in the model, the effect of romantic relationship beliefs on marriage attitudes decreased from 0.46 to 0.26. Upon examining the bootstrap results of the indirect effect obtained, the coefficient of 0.20 fell in the range of 0.09–0.34, indicating that it was significant. Accordingly, one could state that the indirect effect is statistically significant. Since the direct effect was still significant, the intimacy dimension was a partial mediator. Figure 1 illustrates the results related to the model.

Figure 1. Mediating Role of Intimacy between Romantic Relationship Beliefs and Marriage Attitudes

Mediation Model for the A1 Dimension of Love

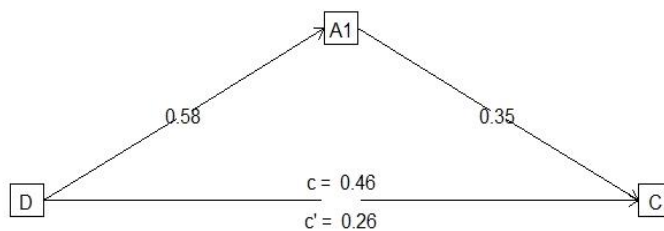


Table 2. Hayes Mediation Analysis Results for the Mediation Role of Passion (A2) in the Relationship between Romantic Relationship Beliefs and Marriage Attitudes

	Coefficient	Standard Error	<i>t</i>	<i>df</i>	<i>p</i>	LLCI	ULCI
D → C (c)	0.46	0.11	4.05	374	0.001		
D → C (c')	0.22	0.14	1.58	373	0.120		
D → A2 (a)	0.72	0.05	14.02	374	0.001		
A2 → C (b)	0.34	0.11	2.96	373	0.003		
Indirect effect (ab)	0.24					0.09	0.42

Note: A1: Intimacy; A2: Passion; A3: Commitment; D: Romantic Relationship Beliefs; C: Marriage Attitudes

As seen in Table 2, the Baron and Kenny mediation steps were fulfilled. However, when the mediating variable of passion was included in the model, the effect of romantic relationship beliefs on marriage attitudes decreased from 0.46 to 0.22. Considering the bootstrap results for the indirect effect, the coefficient of 0.24 fell in the range of 0.09–0.42, indicating that it was significant. Accordingly, one could argue that the indirect effect is statistically significant. The resultant direct effect value was 0.22 ($p > 0.05$) and non-significant. Herein, one could state that passion holds a full mediator role. Figure 2 displays the results related to the model.

Mediation Model for the A2 Dimension of Love

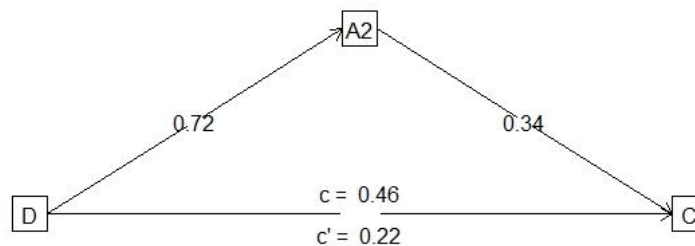


Figure 2. Mediating Role of Passion between Romantic Relationship Beliefs and Marriage Attitudes

Table 3. Hayes Mediation Analysis Results for the Mediation Role of Commitment (A3) in the Relationship between Romantic Relationship Beliefs and Marriage Attitudes

	Coefficient	Standard Error	<i>t</i>	<i>df</i>	<i>p</i>	LLCI	ULCI
D → C (c)	0.46	0.11	4.05	374	0.001		
D → C (c')	0.17	0.13	1.36	373	0.170		
D → A3 (a)	0.69	0.06	11.24	374	0.001		
A3 → C (b)	0.42	0.09	4.44	373	0.001		
Indirect effect (ab)	0.29					0.17	0.43

Note: A1: Intimacy; A2: Passion; A3: Commitment; D: Romantic Relationship Beliefs; C: Marriage Attitudes

As seen in Table 3, the Baron and Kenny mediation steps were fulfilled. However, when the mediating variable of commitment was included in the model, the effect of romantic relationship beliefs on marriage attitudes decreased from 0.46 to 0.17. Considering the bootstrap results for the indirect

effect, the coefficient of 0.29 fell in the range of 0.17–0.43, indicating that it was significant. Accordingly, one could argue that the indirect effect is statistically significant. The resultant direct effect value was 0.17 ($p > 0.05$) and non-significant. Thus, one could state that commitment holds a full mediator role. Figure 3 displays the results related to the model.

Mediation Model for the A3 Dimension of Love

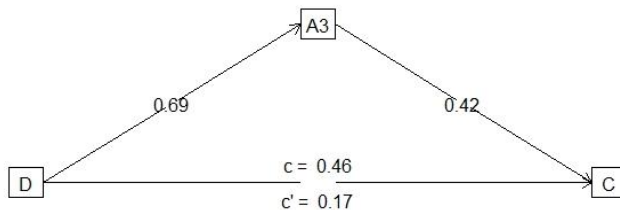


Figure 3. Mediating Role of Commitment between Romantic Relationship Beliefs and Marriage Attitudes

4. DISCUSSION

This study examined the mediating role of triangular love components (intimacy, passion and commitment) in the relationship between university students' romantic relationship beliefs and marriage attitudes. According to the study results, romantic relationship beliefs significantly and positively predicted triangular love components, triangular love components predicted marriage attitude, and romantic relationship beliefs predicted marriage attitude. Another findings of the study the triangular love components, intimacy had a partial mediating role, while passion and commitment had full mediating roles in the relationship between romantic relationship beliefs and marriage attitudes.

The primary finding of the study was that romantic relationship beliefs significantly and positively predicted the components of triangular love, namely intimacy, passion, and commitment. Considering the literature, many studies have examined the association between romantic relationship beliefs and love (Beştav, 2007; Hendrick & Hendrick, 1989; Karabacak & Çiftçi, 2016). However, these studies draw attention to the relationships between irrational beliefs and love styles. However, as discussed in this study, romantic relationship beliefs express perceptions and expectations towards romantic relationships and reveal an individual's level of romanticism. In this respect, it is expected that the individual's level of romanticism significantly affects the level of love in romantic relationships, or, in other words, the perceived intensity of love.

Romantic relationship beliefs form perceptions and expectations that represent romantic ideology and play a significant role in the development of individuals' seemingly ideal relationships (Healy, Scheidegger, Meyers, & Friedlen, 2009; Holmberg & Mackenzi, 2002). Therefore, the closer the perceptions of individuals toward the emotions, thoughts, and behaviors of their romantic partners

in romantic relationships are to their ideal standards, the more likely they are to evaluate their relationships positively (Fletcher & Simpson, 2000). Hence, it seems that increasing romanticism may affect the intensity of love.

Another finding of the study was that triangular love components (intimacy, passion, and commitment) significantly predicted marriage attitudes in a positive direction. Very few studies in the literature draw attention to the relationship between love and marriage attitudes. However, many studies in the literature have focused on the relationships between love, marital satisfaction, and marital adjustment. In parallel with the findings of this research, Yıldırım and Parlar (2010) showed in their study that love styles significantly and positively predicted marriage attitudes. From a similar perspective, Larson (1992) emphasize that premarital couples believe that their love, which is strong enough to overcome all difficulties, will naturally lead to marriage.

Commitment, which is one of the triangular love components, is also emphasized as being quite important in making marriage decisions due to its role in maintaining consistency in the relationship. In long-term relationships, commitment provides continuity and validation to the relationship, protecting the individual from doubt, uncertainty, and loneliness within the framework of personal beliefs. Therefore, in many romantic relationships, couples dedicate themselves strongly to continuing their relationship. To maintain their relationships, they often tend to overlook their spouse's negative traits and focus more on their praiseworthy attitudes (Overall & Sibley, 2008). As per the intimacy component, when it is considered that the continuation of a romantic relationship may be related to the level of satisfaction in the relationship, one could argue that the importance placed on intimacy increases over time depending on the fulfillment of individuals' needs for loving and being loved. Compared to other components of triangular love, passion forms the motivational aspect of love and can have a greater impact on one's evaluation of love in a romantic relationship. From this perspective, positive attitudes towards marriage significantly increase with an increase in the perceived intensity of love.

Another finding was that romantic relationship beliefs significantly and positively predicted marriage attitudes. Similarly, Shimkowski, Punyanunt-Carter, Colwell, and Norman's (2017) study revealed that there was a significant and positive relationship between romantic relationship beliefs and marriage. In another study, Karabacak and Çiftçi (2016) reported significant and positive relationships between romantic relationship beliefs and marriage attitudes. These findings indicate that beliefs add dynamism to relationships to some extent and therefore positively affect attitudes towards marriage. Crosby (1985) notes that the concept of romantic love is the sole reason for marriage and emphasizes that the belief in a "one and only" soulmate encourages the search for one true spouse. On the other hand, Cosby emphasizes that individuals who look for alternative spouses have high standards, which in turn reduces their chances of getting married. Therefore, the increase in romantic ideology may affect positive evaluations of marriage.

Lastly, in the relationship between romantic relationship beliefs and marriage attitude, it was determined that intimacy, which is the triangular love component, has a partial mediator role, while passion and commitment have a full mediator role. This finding could be interpreted that an increase in the level of romanticism, together with the perceived intensity of love, has a greater significant effect on marriage attitudes. In other words, when romanticism combines with love, positive attitudes toward marriage increase. According to Park and Rosen (2013), positive and negative attitudes towards marriage, beliefs about relationships, and behaviors within relationships affect marriage-related behaviors. At this point, if an individual plans to marry their romantic partner and if this partner meets the standards of a romantic relationship, the dating process starts being guided by the individual's assumptions about who the ideal partner is (Reis, Sprecher, & Sprecher, 2009).

On the other hand, Sprecher and Metts (1999) focused on the association between romantic relationship beliefs and relationship quality in their study. Contrary to popular and professional opinions, growing evidence suggests that spouses who idealize each other more or exhibit higher levels of romanticism also tend to have higher levels of relationship satisfaction and liking for their spouses (Murray & Holmes, 1997; Sprecher & Metts, 1999). In the meantime, Sprecher and Metts (1999) emphasize that romantic relationship beliefs cause an increase in commitment over time. This finding raises doubts concerning the assumption that romantic idealism in a relationship is harmful or leads to disappointment.

To conclude, each component of triangular love seems to have significant effects on romantic relationship beliefs and marriage attitudes. Indeed, considering that passion is a significant determinant of romanticism, intimacy is a significant determinant of emotional and social support in romantic relationships, and commitment is a determinant that takes the romantic relationship to more serious relationships in the future (such as engagement and marriage), it is highly meaningful that all these components are significant determinants in the relationship between romantic relationship beliefs and attitudes towards marriage.

5. CONCLUSIONS AND IMPLICATIONS

In conclusion, this study determined that intimacy plays a partial mediator role in the relationship between romantic relationship beliefs and attitudes towards marriage, while the passion and commitment components of triangular love play a full mediator role. Considering the resultant findings of the study, it appears highly meaningful for university counseling and guidance centers to establish various preventive and developmental programs that enable students to make more realistic assessments of love and romantic relationships.

In addition, through services including group counseling, workshops, group guidance activities, brochures, posters, and various seminars carried out in universities, university students could be

informed about what romantic love and beliefs are, how they are formed, why they are important, and how to overcome the challenges experienced in romantic relationships. This way, students could be enabled to develop a healthier perspective on marriage. On the other hand, premarital relationship development programs could be developed to raise awareness of university students' attitudes towards marriage and increase couple adjustment.

Meanwhile, children's and young adults' tendencies to resemble the characters in movies, TV series, and magazine programs they watch are reflected in their lives as part of the modeling process. Thus, especially in regards to romantic relationship beliefs and themes related to love, TV series, movies, or commercials could be structured more realistically, avoiding exaggeration and rigidity toward love.

Lastly, this study is limited to Mersin University students. Therefore, restructuring similar studies in different universities and with different sample groups would be useful. In addition, new studies could be conducted within the framework of different analyses with variables (such as well-being, relationship satisfaction, attachment styles, and relationship quality) other than those addressed in the present study.

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GENİŞLETİLMİŞ TÜRKÇE ÖZET

ROMANTİK İLİŞKİ İNANÇLARI VE EVLİLİK TUTUMLARI ARASINDAKİ İLİŞKİDE ÜÇGEN AŞK BİLEŞENLERİNİN ARACI ROLÜ

Bu araştırmada, üniversite öğrencilerinin romantik ilişki inançları ve evlilik tutumu arasındaki ilişkide üçgen aşk bileşenlerinin (yakınlık, tutku ve bağlılık) aracı rolü incelenmiştir. Evlilik yönelik tutumlar, bireyin evliliğe ilişkin beklentisi, evliliğe yüklediği anlamlar ve gelecekte olmasını beklediği aile ilişkilerinin tamamı olarak ifade edilmektedir (Willoughby, 2010). Romantik ilişki inançları, bireylerin romantik ilişkilerine yönelik algı ve beklentilerini içermektedir (Sprecher & Metts, 1999). Bu çalışmada romantik ilişki inançları ve evlilik tutumları arasındaki ilişkide aracılık etkisi incelenecek olan değişken, bireylerin üçgen aşk düzeyleri olacaktır. Sternberg 'in (1986) üçgen aşk kuramı aşkın duygusal, güdüsel ve bilişsel yönlerini temsil ettiği öngörülen “yakınlık”, “tutku” ve “bağlılık” bileşenlerinden söz etmektedir. Her bileşenin aşkın farklı bir yönünü ortaya koyduğunu belirten Sternberg, algılanan aşk yoğunluğunun bu bileşenlere bağlı olarak arttığına veya azaldığına dikkat çekmektedir. Bu çalışmada ele alınan çalışma grubu üniversite öğrencilerini oluşturmaktadır. Üniversite yıllarında kurulan romantik ilişkiler yetişkinlik döneminde kurulacak yakın ilişkilerin niteliğini ve bireyin evlilik sürecinde eş seçimini belirlemektedir (Furman, 2002). Bu bakış açısıyla, üniversite öğrencilerinin romantik ilişki inançları ve evlilik tutumları arasındaki ilişkide üçgen aşkın bileşenleri olan yakınlık, tutku ve bağlılık düzeylerinin aracı rolünün incelenmesinin anlamlı olacağı düşünülmektedir.

Araştırmanın örneklemini, bir kamu üniversitesinde öğrenim gören 289'u kadın, 87'si erkek olmak üzere toplam 376 lisans öğrencisinden oluşmaktadır. Bu çalışmada Kişisel Bilgi Formunun yanı sıra, İnönü Evlilik Tutum Ölçeği, Sternberg Üçgen Aşk Ölçeği (ÜAÖ-A ve ÜAÖ-B formları) ve Romantik İnançlar Ölçeği olmak üzere toplam dört ölçme aracı kullanılmıştır. Bayoğlu ve Atli (2014) tarafından geliştirilen İETÖ aracılığıyla, bireylerin evliliğe ilişkin tutumlarını değerlendirmek amaçlanmaktadır. Romantik İnançlar Ölçeği, 1989 yılında Sprecher ve Metts tarafından geliştirilmiştir. Romantik ideolojiyi oluşturduğu tespit edilen inançları ölçmek amacıyla kullanılan ölçek (Küçükarslan & Gizir, 2013) tarafından Türkçe'ye uyarlanmıştır. Sternberg Üçgen Aşk Ölçeği (ÜAÖ-A ve ÜAÖ-B formları) Soyer ve Gizir (2021) tarafından Türkçe'ye uyarlanmıştır.

Araştırma sürecinde öncelikle Mersin Üniversitesi Sosyal Bilimler Araştırmaları Etik Kurulu'ndan gerekli izinler alınmış, araştırmanın modeli ve örneklemi belirlendikten sonra kişisel bilgi formu düzenlenmiştir. Verilerin analizi, SPSS 22 paket programı kullanılarak yapılmıştır. Uygulamalar esnasında katılımcıların araştırmaya gönüllü katılımları esas alınmıştır. Sınıf içerisinde gerçekleştirilen uygulamalarda araştırmanın amaçları ve ölçme araçlarının uygulanmasına yönelik yönergeler

katılımcılara açıklanmıştır. Ölçek uygulamaları araştırmacılar tarafından yapılmış ve yaklaşık süre 20 dakika olarak belirlenmiştir. Elde edilmiş olan verilere ilişkin bütün düzenlemeler, R programlama ortamında gerçekleştirilmiştir. Aracılık Analizi Baronv e Kenny (1986) adımları esas alınarak Hayes Yaklaşımı'na göre gerçekleştirilmiştir. Aracılık analizleri ve grafiklemeler psych paketi kullanarak yapılmıştır.

Araştırmadan elde edilen sonuçlara göre, romantik ilişki inançları ve evlilik tutumu arasındaki ilişkide, üçgen aşkın bileşenleri olan yakınlığın kısmi, tutku ve bağlılığın ise tam aracılık rolüne sahip olduğu tespit edilmiştir. Elde edilen bu bulgu romantiklik düzeyinin artmasının, aşka yönelik algılanan yoğunlukla beraber evlilik tutumunu daha anlamlı etkileyeceğini şeklinde yorumlanabilir. Yani romantizm aşk ile birleştiğinde evliliğe yönelik olumlu tutum artmaktadır. Rosen ve Park'a (2013) göre pozitif ve negatif evlilik tutumları, ilişkiler ile ilgili inançlar ve ilişki içerisindeki davranış şekilleri evlilik ile ilgili davranışlarını etkilemektedir. Bu noktada, birey romantik eşi ile evlenmeyi planlıyorsa ve bu eş romantik ilişkide sahip olunan standartlara uygunsuzsa, flört etme süreci ideal eşin kim olduğuna ilişkin bireyin sahip olduğu varsayımlar tarafından yönlendirilmeye başlamaktadır (Reis, Sprecher ve Sprecher, 2009). Diğer taraftan [Sprecher ve Metts \(1999\)](#) yaptıkları çalışmada, romantik ilişki inançları ve ilişki kalitesi arasındaki ilişkiye odaklanmıştır. Popüler ve profesyonel düşüncenin aksine, birbirlerini daha fazla idealleştiren veya daha yüksek düzeyde romantizm sergileyen eşlerin aynı zamanda daha yüksek düzeyde ilişki doyumu ve eşlerinden hoşlanma eğiliminde olduklarını öne süren kanıtlar artmaktadır (Murray & Holmes, [1997](#); [Sprecher ve Metts, 1999](#)). Aynı zamanda Sprecher ve Metts (1999), romantik ilişki inançlarının zaman içinde bağlılıkta artışa neden olduğunu vurgulamaktadır. Bu bulgu, bir ilişkideki romantik idealizmin zararlı olduğu veya hüsrana yol açtığı varsayımına şüphe uyandırmaktadır. Üçgen aşkın her bir bileşeninin romantik ilişki inançları ve evlilik tutumu arasındaki önemli etkileri olduğu görülmektedir. Nitekim ilişkide tutku bileşeninin, romantizmin önemli bir belirleyicisi olduğu, yakınlık bileşeninin de romantik ilişkilerde duygusal ve sosyal desteğin önemli belirleyicisi olduğu ve bağlılık bileşeninin de romantik ilişkiyi gelecekte daha ciddi ilişkilere (nişanlanmak ve evlenmek gibi) taşıyan bir belirleyici olduğu düşünüldüğünde; tüm bu bileşenlerin romantik ilişkideki inançlar ve evliliğe yönelik tutumları arasındaki ilişkide önemli bir belirleyici olması oldukça anlamlı olmaktadır.

Araştırmadan elde edilen bulgulardan hareketle, üniversitelerde hizmet veren Üniversite Psikolojik Danışma ve Rehberlik Merkezleri'nin, öğrencilerin aşk ve romantik ilişkilere yönelik daha gerçekçi değerlendirmeler yapmalarını sağlayacak çeşitli önleyici ve gelişimsel programlar oluşturmaları oldukça anlamlı görünmektedir. Bununla birlikte, üniversite bünyelerinde gerçekleştirilecek grupla psikolojik danışma, çalışma grupları, grup rehberliği etkinlikleri, broşürler, afişler ve çeşitli seminerleri kapsayan hizmetler temelinde üniversite öğrencileri için, romantik aşkın ve inançların ne olduğu, nasıl oluştuğu, neden önemli olduğu ve aşk ilişkilerinde yaşanan zorluklarla nasıl baş edileceği konusunda bilgilendirme çalışmaları yapılabilir. Aynı zamanda, çocukların ve genç

yetişkinlerin izlenen filmlerdeki, dizilerdeki ve magazin programlarındaki karakterlere benzeme eğilimleri, modelleme süreçlerinin bir parçası olarak yaşamlarına yansımaktadır. Bu nedenle özellikle romantik ilişki inançlarına ve aşka yönelik temaları dizi, film ya da reklamların daha gerçekçi bir şekilde yapılandırılması ve aşka yönelik abartı ve katılıktan uzak olması sağlanabilir. Son olarak, bu çalışma Mersin üniversitesi öğrencileri ile sınırlıdır. Farklı üniversite ve farklı örneklem gruplarında benzer çalışmaların yeniden yapılandırılmasında yarar vardır. Bununla beraber, çalışmada ele alınan değişkenler dışında değişkenlerle (iyi oluş, ilişki doyumu, bağlanma stilleri, ilişki niteliği gibi) farklı analizler çerçevesinde yeni çalışmalar yapılabilir.

IS DIGITAL STORYTELLING FUNCTIONAL IN SOCIOSCIENTIFIC ISSUES? PRE-SERVICE SCIENCE TEACHERS' EXPERIENCES

Feride ERCAN YALMAN¹

Geliş Tarihi/Received: 12.05.2023

Elektronik Yayın/Online Published:20.06.2023

DOI: 10.48166/ejaes.1296395

ABSTRACT

This study sought answers to the following question: "Is digital storytelling functional in teaching socioscientific issues?" In the framework of the study, digital stories were prepared individually by nine pre-service teachers on nine different socioscientific topics to find the answer to this question. The data of the present study, which was conducted with action research, were collected by using two different methods: pre and post-interviews and digital stories. Content analysis was used to analyze the interviews and the digital stories were analyzed by using the "digital story evaluation rubric". According to the results obtained during pre-interviews, the participants did not have digital storytelling experience before and did not have much knowledge about digital storytelling. After the implementation, the participants had predominantly positive views towards digital storytelling and that the digital storytelling could be a functional method in teaching socioscientific issues. When the participant products (digital stories) were evaluated in line with the criteria in the literature, it was concluded that the digital stories were prepared at a very satisfactory level, but the content part of the digital stories prepared by the participants lacked discussion questions about the selected socioscientific issues and the issues could not be addressed impartially.

Keywords: Digital storytelling; socioscientific issues; pre-service science teachers

¹Assit. Prof. Mersin University, Faculty of Education, Department of Science Education Mersin, Turkey, feride@mersin.edu.tr, ORCID:0000-0003-1037-1473

DİJİTAL ÖYKÜLER SOSYOBİLİMSEL KONULARDA İŞLEVSEL Mİ? ÖĞRETMEN ADAYLARININ DENEYİMLERİ

ÖZET

Bu çalışmada “dijital öykülerin sosyobilimsel konuların öğretiminde işlevsel mi?” sorusuna cevap aramaktadır. Bu cevabı bulabilmek adına dokuz öğretmen adayı tarafından dokuz farklı sosyobilimsel konuda bireysel olarak dijital öyküler hazırlanmıştır. Eylem araştırmasına göre gerçekleştirilen çalışmada veriler iki yolla toplanmıştır. Birinci veri toplama aracını ön ve son görüşmeler, ikinci veri toplama aracını dijital öyküler oluşturmaktadır. Görüşmeler içerik analizine göre analiz edilirken dijital öyküler “dijital öykü değerlendirme rubriğine” göre analiz edilmiştir. Elde edilen sonuçlara göre uygulama öncesi görüşmelerde katılımcıların dijital öykü deneyimini daha önce yaşamadığı ve dijital öyküye dair yeterli düzeyde bilgi sahibi olmadığı tespit edilmiştir. Uygulama sonrasında katılımcıların dijital öyküye yönelik çoğunlukla olumlu görüşlerinin olduğu ve sosyobilimsel konuların öğretiminde dijital öykünün işlevsel bir yöntem olabileceği sonucuna ulaşılmıştır. Katılımcı ürünleri (dijital öyküler) alanyazındaki kriterler doğrultusunda değerlendirildiğinde dijital öykülerin oldukça iyi düzeyde hazırlandığı görülmüştür. Ancak içerik kısmında sosyobilimsel konulara yönelik tartışma sorusu oluşturma ve konuları tarafsız bir şekilde ele almada yeterli düzeyde performans gösterilemediği tespit edilmiştir.

Anahtar Kelimeler: Dijital öykü; sosyobilimsel konular; fen bilgisi öğretmen adayları

1. INTRODUCTION

Technological advances are affecting our lives more and more, especially the children and teenagers (Sadik, 2008). All kinds of technology, from mobile phones to tablets, are always beside us, and people want to record and share their memories with these digital tools. This desire and tendency encourages educators to use digital storytelling (DS) applications in educational environments (Kocaman Karoglu, 2015). The development of technology is not limited to multimedia tools. Progress in science and technology affects many areas such as the topics on the agenda, curricula, etc. For example, a science teacher in the 1970s did not have to cover the effects of biotechnology in lectures when teaching concepts such as heat, pressure, and mass as the main science subject. However, today's teachers have to deal with many current, scientific and social issues from space pollution to pandemic vaccines. Individuals make arguments and make decisions on topics called socioscientific issues (SSI) (such as nuclear energy, biotechnology, hydroelectric power plants, etc.) that are social on one side and scientific on the other, which include dilemmas and are waiting to be resolved. Individuals need to be aware of the relevant issues and contexts for the argumentation and decision-making stages in question (Zeidler, Herman & Sadler, 2019). It can be argued that addressing the contemporary issues with modern approaches will be more effective on students. One of the new generation teaching tools in question is digital storytelling.

1.1. Digital Storytelling in Science Education

Digital storytelling is defined as a new generation learning/teaching tool that gives students or teachers a chance to express themselves using multimedia technologies (Robin, 2008). Especially during the COVID-19 epidemic, all countries employed different applications to increase the quality of distance education and teaching. Distance education may actively continue even after the pandemic. From this perspective, it can be argued that DS can be a functional teaching tool for teachers in the distance education process. Supporting this view, the results of the study conducted by Kotluk and Kocakaya (2016) demonstrated that the physics teacher candidates had positive opinions about the digital storytelling process, believed that DS could be used in distance education and digital storytelling was functional in the teaching process. The benefits of DS are not limited to distance education. The literature cites the positive impact of DS on educational settings in many areas (Seckin Kapucu & Yurtseven Avci, 2020). For example, digital storytelling was found to contribute to problem solving skills (Yuksel, 2011), critical thinking (Demirer, 2013), creativity (Wu & Yang, 2008), motivation (Hung et al., 2012; Yang & Wu, 2012), technology literacy (Chan, et al., 2017; Sadik, 2008), content knowledge about the relevant subject (Sancar Tokmak et al., 2014) and understanding the nature of science (Seckin Kapucu & Yurtseven Avci, 2020). It is believed that teachers have an important role in successfully integrating DS, which is highly effective in transferring many skills, into the teaching environment. DS, which can be used in many branches, is an increasingly popular teaching tool in science education as well. The studies combining science education and digital storytelling (Akgul, Tanriseven, 2019; Hoban, et al., 2015; Hung et al., 2012; Sancar Tokmak, et al., 2014) were designed according to the skills (achievement, creativity, motivation, attitude, collaboration, 21st century skills, etc.). Sadik's (2008) study involving Egyptian teachers and students reported that while teacher progress was observed in DS, students were also found to transfer cooperation and communication skills and knowledge thanks to DS. The study carried out by Titus (2012) concluded that American students were able to make sense of science concepts and make explanations to their classmates thanks to the digital stories they prepared. The project-based digital storytelling study conducted by Hung et al. (2012) in Taiwan found that students' motivation, problem-solving skills and academic achievement increased. The project-type research conducted in Romania by Craciun, Craciun, and Bunoiu (2016) aimed to demonstrate the usability of DS in science education by designing a project in which pre-service teachers, academicians and secondary school students could be involved in the process. At the end of the process, improvements were observed in the 21st century skills of the pre-service teachers, while the secondary school students reported finding the DS practices exploratory, instructive and entertaining. The study conducted by Sancar Tokmak et al. (2014) investigated the development of pre-service science teachers' technological pedagogical content knowledge in the DS creation process. Instead of focusing on units, many studies in the literature focused on the skills (motivation, success, 21st century skills, etc.) which were desired to be developed. The research in the current study was designed with a subject-oriented approach and set

out to have pre-service teachers prepare a digital story in the context of SSI. It is believed that the philosophy of DS and the nature of SSI are complementary. For example, the important components of DS such as point of view, dramatic question, etc. are also important in SSI. DS can be defined as the setting in which students have the opportunity to express themselves, SSI can be described as the situations and contexts in which students have the opportunity to express their worldviews and decisions. With digital storytelling, students can discuss the topics presented in the story and an interactive learning environment can be created (Robin, 2008). Another connection between SSI and digital stories is discussing the content in a controversial environment, accompanied by dramatic questions and contexts. As a matter of fact, scenarios involving dilemmas are frequently used in teaching SSI in the classroom environment and the results are included in the literature (Lin & Hung, 2016; Shea, et al., 2015). In this context, it is believed that addressing SSI and DS together will yield striking results.

1.2. Socioscientific Issues in Science Education

Due to the effect of the reflection of scientific developments on daily life, media and therefore on curricula, SSI in science education has become one of the subject areas that have been studied significantly, especially in the last 15-20 years. So much so that most countries aim to address SSI in their curricula in parallel with this trend. For example, in the United States, the National Research Council (NRC) (2012) defines the primary goals of science education as involving students in discussions on science-related issues, becoming conscious consumers of scientific information in their daily lives, and learning science throughout their lives. Similarly, SSI has become significant in the science curriculum in Turkey since 2013, when the program changed. The curriculum revision in 2018 enabled the inclusion of SSI in the curriculum even more (MoNE, 2018). It is believed that the type and number of SSI will increase over time as scientific developments increase and it will be addressed more in teaching programs. However, differences of opinion on SSI will continue to be effective in the future because, although SSI is very popular in both curriculum and literature studies, it does not have a definite answers, even in specific situations due to controversial content. Therefore, discussions about SSI will continue (Sadler, et al., 2017). These differences of opinion enable the use of different concepts such as argumentation, decision making, reasoning, etc. In this context, SSI studies in the literature are generally associated with argumentation skills (Evren Yapicioglu & Kaptan, 2018; Lin, et al., 2014), decision making skills (Es & Ozturk, 2021; Jho, 2015) and informal reasoning skills (Sicimoglu, 2020). In other words, most of the studies in the literature focus on how SSI can be integrated into science courses and how the content developed in this context affects students' knowledge, skills and attitudes. Limited number of studies in literature addressed SSI as a goal, not as a tool and associated SSI with different applications. Although SSI is addressed both as a tool and an goal in classroom settings, the most important factor in transferring all the relevant skills to students stands out as teacher proficiency. The most important component in SSI teaching is believed to be the understanding and competencies of teachers who will transfer SSI into their classrooms (Han Tosunoglu & Irez, 2017). Levinson and Turner

(2001) state that in SSI teaching, teachers cannot design long-term teaching environments and have difficulty in attracting attention and establishing relationships. Han Tosunoglu and Irez (2017) reached the same result and concluded that nearly half of the teachers cannot use appropriate and up-to-date techniques when addressing SSI in classroom settings. In addition, Presley et al. (2013) emphasize that interesting contexts should be created by using media/technology in the teaching of SSI in order for teachers to provide quality teaching. The literature includes studies that start with a video demonstration (Bossler & Lindahl, 2017) or by reading a short story (Tomas & Ritchie, 2014) to make SSI contexts interesting. The present research utilized digital stories created by adding videos, stories and various other components (music, content, effects, imagination, etc.). Whether digital or traditional, there are a few things to consider in stories created in the context of SSI. First, the scenarios should have interesting and valid content. Second; opposing ideas should not prevail over each other and should not create prejudices in scenarios, they should be fair and objective (Tsai, 2018). Third, preliminary information should be provided to students (Dawson & Carson, 2017). Another dimension of this research addressed the content and quality of the stories prepared within the scope of SSI.

1.3. The Relationship between Socioscientific Issues and Digital Storytelling

The impact of advances in science and technology has brought the possibility of including both SSI and DS in the curriculum. Despite significant progress in both SSI and DS fields in recent years, it is possible to say that teachers still do not feel ready for both subjects (Han Tosunoglu & Irez, 2017). Carson and Dawson (2016) emphasize teacher competences to provide effective teaching about SSI and argue that teachers should be competent in identifying the appropriate techniques to create the ideal teaching environment. These techniques vary in the literature; for example, short story (Tomas & Ritchie, 2014), dilemma cards (Shea, et al., 2015), case study (Knight & McNeill, 2015), scenarios (Lin & Hung, 2016) and studies using video demonstrations (Bossler & Lindahl, 2017) can be used in the classroom implementation of SSI. The relevant theme is presented to the student in a context by using these techniques. This study made use of DS in SSI because today's students like to spend time with technology (Junco, 2015). When the students create their own stories and prepare videos, learning can be realized with dedication and involvement. In this context, it is thought that the research will contribute to the relevant literature by focusing on how to attract today's students to the lesson, by emphasizing science, technology and creativity together. Multiple perspectives are important in creating both DS and SSI. The relevant context can be presented more interestingly with DS as confirmed by the studies of Park, Ko and Lee (2017) which concluded that students can develop multiple perspectives, increase their socio-ethical awareness, and improve empathy and negotiation skills with the use of DS in SSI. The results of their research also showed that developed digital stories made the teaching environment fun and interesting. Similarly, in the project by Smith, Shen, and Jiang (2019), students prepared science fiction films based on SSI and using digital platforms (multimodal science fiction). The study concluded

the student work provided added value in many aspects such as contributing to students' problem solving, cooperation, argument presentation and creativity.

1.4. Significance of the Research

Literature review shows that there are quite a lot of studies in both DS and SSI fields. However, the number of studies that address the keywords of this study, DS and SSI together, is quite limited (Ozturk & Bozkurt Altan, 2018; Park, et al., 2017). It is believed that DS helps demonstrate student potential in a concrete manner and therefore digital stories can be functional learning tools. Teachers play a key role in transferring both the themes included in the curriculum and contemporary teaching methods to the classroom environment. Since pre-service teachers will soon be employed in teaching environments, it is crucial that they have relevant experience in education faculties and be informed of current techniques. From this perspective, this study aimed to provide pre-service teachers with experience regarding a contemporary practice before starting their teaching careers and to observe the potentials of young people. In this context, it is believed that the current study will contribute to the literature. The study sought answers to the following question: "Is digital storytelling functional in teaching socioscientific issues?" with the sub-questions listed below.

- 1- What are pre-service teachers' views and expectations regarding the digital story process before the implementation (before preparing digital stories)?
- 2- What are pre-service teachers' views and experiences regarding the digital story process after the implementation (after preparing digital stories)?
- 3- What is the quality of the prepared digital stories regarding the criteria listed in the literature?
- 4- What is the content and quality of digital stories in the socioscientific context?

2. METHOD

Action research, one of the qualitative research approaches was used in the research. Action research aims to find a solution to an existing problem and allows the researcher to be a practitioner throughout the process (Yildirim & Simsek, 2013). In other words, in action research, it is possible for the teacher to personally participate in the research process and turn the school into a research field. In addition, a new practice is presented and analyzed in action research along with evaluations about the process (Clark et al., 2020). In this study, the author is involved in the process both as a researcher and as a lecturer in the course "Special Topics in Science". This study was designed so that pre-service teachers could both experience a digital application and present their arguments with higher quality during the DS process. Based on these, the study was conducted with action research design.

2.1. Participants

Study participants were 4th year students in the Department of Science Education at a state university in Turkey. The researcher, with expertise in SSI and argumentation in science education,

explained the research process to 21 pre-service teachers enrolled in the elective course "Special Topics in Science". Nine pre-service teachers stated that they could be involved in the research process which was carried out on a voluntary basis. The participants had not taken any other courses that directly dealt with argumentation and socioscientific issues before taking the relevant course. However, they had attended several courses that may be partially related to argumentation and SSI in the first three years of their undergraduate education. For example, they learned about the argumentation method in courses such as "Science Teaching I" and "Science Teaching II" in the 2nd year of undergraduate education. Similarly, socioscientific issues were included in courses such as "Nature of Science", "Evolution", "Biotechnology" and "Environmental education". Participants were included in this research in the last semester of their undergraduate education which lasted 8 semesters in total.

2.2. Research Process

The research process covered 15 weeks. Figure 1 presents the research process.

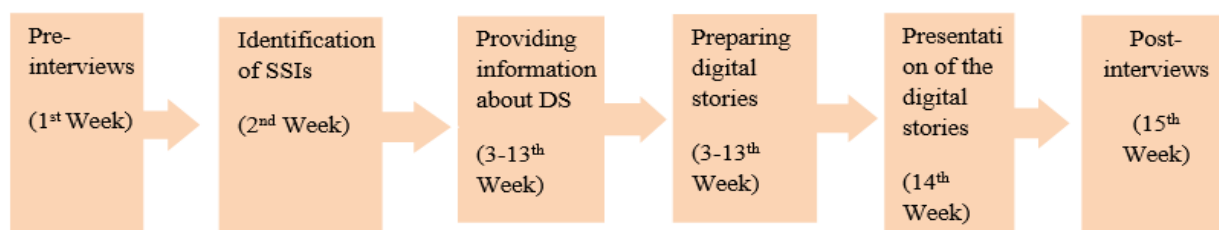


Figure 1. Research Process

Individual interviews were conducted with the nine participants in the first week of the research process. The interviews aimed to pinpoint prior knowledge and experiences of the participants about digital storytelling. The socioscientific issues on which the participants would prepare a digital story were listed by the researcher and presented to the participants in the second week of the study. Table 1 lists the topics which were selected by the participants as well as the topics not preferred.

Table 1. Socioscientific Issues Presented to Participants for Digital Storytelling

Participant	Socioscientific issues selected by the participants	Socioscientific issues not selected by the participants
P1	Acid rains	Space pollution
P2	Organ donation	Illegal use of electricity
P3	Genetically modified organisms	Nuclear power plants
P4	Waste control and recycling	Pandemic vaccines
P5	Biotechnology/cloning	Drug use
P6	Test animals	Medicine and alternative medicine
P7	Global climate change	Euthanasia
P8	Hydroelectric power plants	Base stations
P9	Biodiversity (Endangered creatures)	Local socioscientific issues
		Other

Nine topics were chosen by the participants from the list, which included about twenty SSIs. In addition to the SSIs in the literature, a local socioscientific issue was presented to the participants as well as the option of "other". In other words, the participants could freely choose the subjects for their

digital stories. According to Table 1, the participants generally preferred the SSIs with environmental content.

The researcher provided guidance to the participants about DS during the 3rd and 13th weeks of the study. Each participant was interviewed individually before or after the lesson to determine which stage they were in, whether they were experiencing difficulties, etc. (Mentoring service). The process included preparing the digital stories.

In the 14th week of the research process, the participants presented their digital stories to the other participants in the study group and the researcher. This stage included self-assessment and peer-assessment and allowed collecting information about aspects beyond the process. The evaluations in this stage were not included in the scores since they were not planned directly to collect assessment data. At the end of the research process, in the 15th week, individual interviews were conducted so that the participants could evaluate the process and the implementation process was completed.

2.3. Data Collection Tools

2.3.1. Interviews

The first data collection tool used in this research was the interviews conducted before and after the DS implementation. The interviews aimed to reveal the participants' experiences regarding the digital storytelling process. They were used to find the answers to the first sub-problem. Pre-interviews lasted about 15 minutes (five questions), while post-interviews took about 30 minutes (eight questions). The pre-interviews generally aimed to determine participants' prior knowledge and experiences about SSI and DS. The post-interviews conducted at the end of the implementation aimed to reveal participants' experiences about the digital story preparation process, which lasted about 12 weeks. The interviews set out to elicit information about participants' affective experiences (having fun, experiencing difficulty, enjoyment, etc.) and cognitive experiences (the relevance of digital stories on socioscientific issues, content, etc.) in the process.

2.3.2. Digital Stories (Participant Products)

The digital stories prepared by the participants were used as the second data collection tool in this study. Participant products both laid the groundwork for pre-service teachers to experience the process and gave the researcher an idea about whether these products fit the criteria of digital stories as presented in the literature. In addition, these stories were thought to be a functional data collection tool which would reveal participants' quality of argumentation.

2.3.3. Data Analysis

Interview data were analyzed via content analysis method. The data obtained from the pre- and post-interviews were transcribed and codes and themes were created. In this process, matrices were created by the researcher to see the findings in a detailed manner thanks to the small number of

participants. The matrices and other visuals not only provide insightful information but also allow presentation of the data in a more concrete manner (Miles & Huberman, 1994). Table 2 presents an example of content analysis obtained during the analysis phase of the interviews.

Table 2. Example of Content Analysis

Theme	Code	Sub-code	Participant View
		Would prefer	<i>I would definitely prefer using the digital story in my teaching life. I think it is a very instructive, modern and extraordinary method. (P7)</i>
		Would partially prefer	<i>I would rarely choose to use it. Digital stories on difficult topics can be functional. (P5).</i>
		Would not prefer	<i>I would not prefer using the digital story unless I have to. There are many animations and videos on the internet. It's easier to use them. (P6)</i>
Digital story in professional life		Negative	<i>When I become a teacher, I will not give students a digital story project. It's not interesting or exciting. (P9)</i>
		Partially	<i>I can assign digital story assignments to my students according to the grade level and physical facilities (eg having a PC etc.) (P4).</i>
		Positive	<i>I think digital story is a practice that can contribute more to students than classical homework or practices. (P3).</i>
Digital story in the implementation process		Have difficulty	<i>I struggled with each of the following stages: finding suitable visuals, the design, the voiceover, etc. (P2)</i>
		Have partial difficulty	<i>When I first used the program, I had some difficulties due to my inexperience. But the voiceover part was quite fun (P1).</i>
		Do not have difficulty	<i>I had no difficulty. I had a lot of fun. I played some characters by changing my voice. I really enjoyed it (P8).</i>

The researcher carried out content analysis with an inductive approach within a hierarchy in the form of subcode, code, and theme.

Descriptive analysis method was used to evaluate the digital stories. Digital story evaluation rubrics in the literature were examined and the rubric developed by Sadik (2008) for teachers was selected to be used in this study since it is more detailed compared to many other rubrics in the literature.

The analysis in the first stage centered on the question whether the digital stories prepared by the participants were “real digital stories” based on the criteria listed in the literature. The rubric developed by Sadik (2008) was used to answer the first question. The analysis on the second stage focused on the successful integration of the digital stories with socioscientific issues based on the criteria presented in the studies of Atabey, Topçu, and Çiftçi (2018). SSI scenarios or stories include criteria

such as giving preliminary information about the relevant topic, presenting positive and negative ideas and establishing a discussion question.

The data were recorded and examined several times to be objective and transparent during data analysis. However, the method commonly used in qualitative research to ensure validity and reliability is to involve more than one person in the analysis process. Hence, support was received during the data analysis phase from another researcher (independent rater), an expert in science education and qualitative analysis. According to Miles and Huberman's (1994) consensus/disagreement formula, a consensus of 92% was achieved between the researcher and the independent rater, who examined half of the transcripts. Participant confirmation was also used to increase the validity, reliability and verifiability, to eliminate the researcher's subjective assumptions or misunderstanding of the data. Credibility and transferability are the two key concepts in qualitative research that are as important as validity and reliability. The research process was explained in detail to the reader and examples from the natural data of pre-service teachers were presented as quotations in the findings section to ensure credibility and transferability in the current research. Based on the practices used during the analysis process, the study is believed to confirm with validity, reliability, credibility and transferability criteria.

2.4. Ethical Procedures

Procedural ethical rules were followed in this research and ethical permission was obtained from Mersin University Social and Human Sciences Ethics Committee (nr.26/08/2021-36). Later, participants were included in the research process based on principle of voluntary participation. Attention was paid to privacy and confidentiality and the names of the participants were not used within the framework of research ethics. Instead, codes were used for the participants such as P1, P2.

3. RESULTS

The research findings include the results about the DS experiences and the results about the quality of the digital stories regarding the use of SSI. Figure 2 presents participants' views and experiences before the implementation while Figure 3 and Figure 4 present participants' views after the implementation.

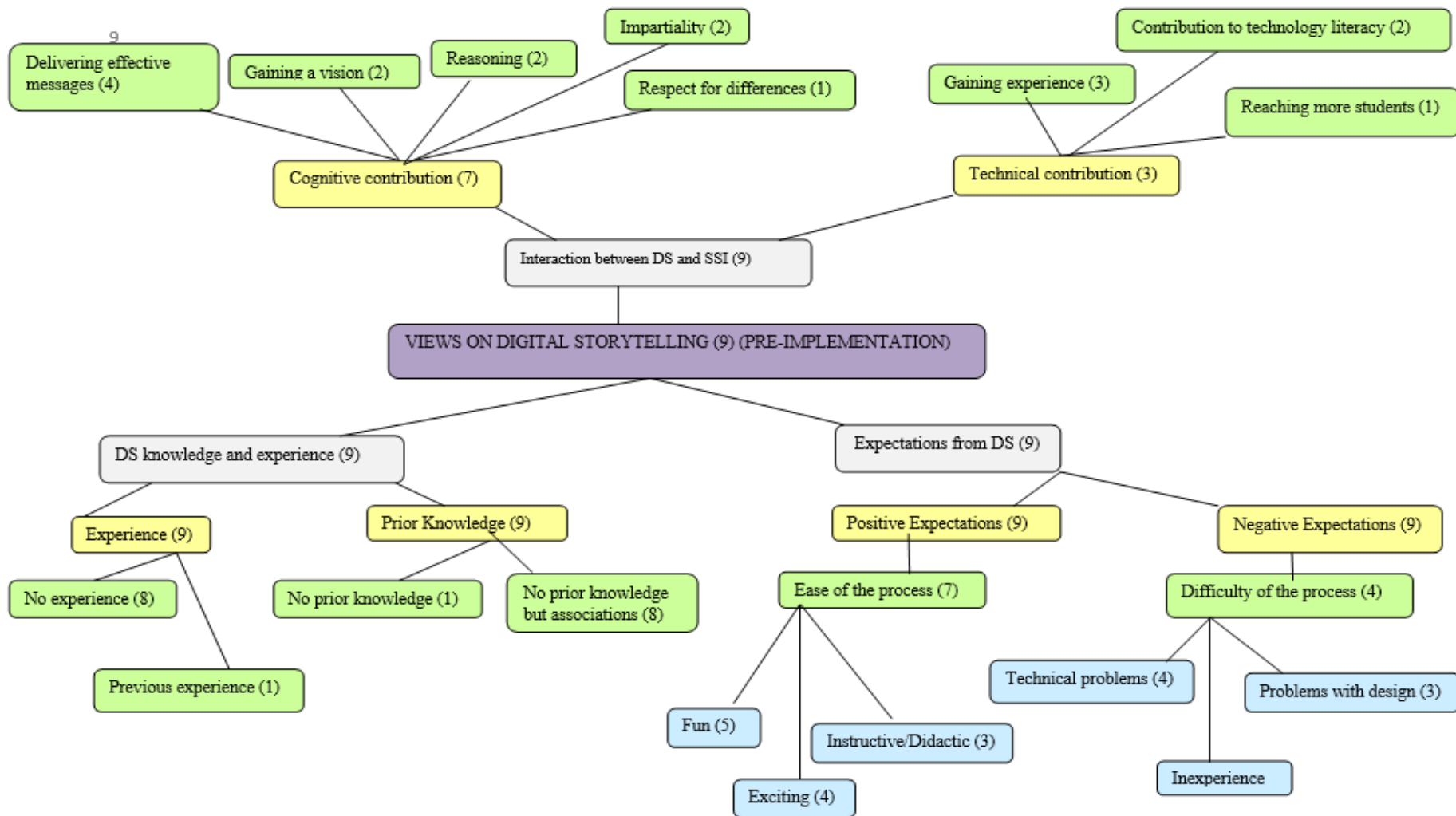


Figure 2. Participants' views and experiences before the implementation

The participant responses during the interviews before the digital story preparation process were gathered in three categories: experiences, expectations, and interaction of digital story and socioscientific issues.

It was found that the majority of the participants had no previous DS experience. Although the participants could not clearly define DS, they tried to make predictions via associations. For example, they made definitions such as "edited audio story" and "dubbing photos". A participant statement is provided below as an example.

"As far as I understand from the word digital, it is the type of telling the story in a modern way." (P3)

When asked about their expectations regarding the digital story preparation process, participants cited positive and negative points. Seven participants hoped that the process would be easy, and some of them stated that it would be fun, while others stated that it would be instructive. Two participants expressed positive opinions about the process and stated that it was exciting to learn new things. When the findings in the expectation category are evaluated in general, it can be argued that the participants had positive predictions and expectations for the digital story preparation process.

"I don't know the digital storytelling process exactly, but I think it will be a fun process. Although it is a bit of a challenge, it must be exciting to prepare a rich teaching material with visual and auditory elements." (P8)

Some participants had negative predictions about the digital story preparation process. Four participants predicted that this process would be challenging and one of them stated that it would be difficult in technical terms (for example, dubbing, adjusting the pacing, etc.). Most of the participants stated that they would prepare a digital story for the first time and therefore they would be inexperienced. In addition, some participants voiced concerns about designing the digital story, preparing the content, etc. There are also participants who think that they will have difficulties in such stages. Some participant statements are provided below.

"All the stages such as finding the images, the transitions, dubbing, are difficult stages. Even if they are all taken care of, our minds will be very tired making the whole to be coherent and harmonious." (P5)

"Since socioscientific issues are open-ended and should be explained in an unbiased figure, I think I will have a hard time. I need a very good editing and design process." (P2)

The results obtained from the interviews with the participants after the implementation are presented in Figure 3 and Figure 4. Figure 3 presents the general views on the educational aspect of DS.

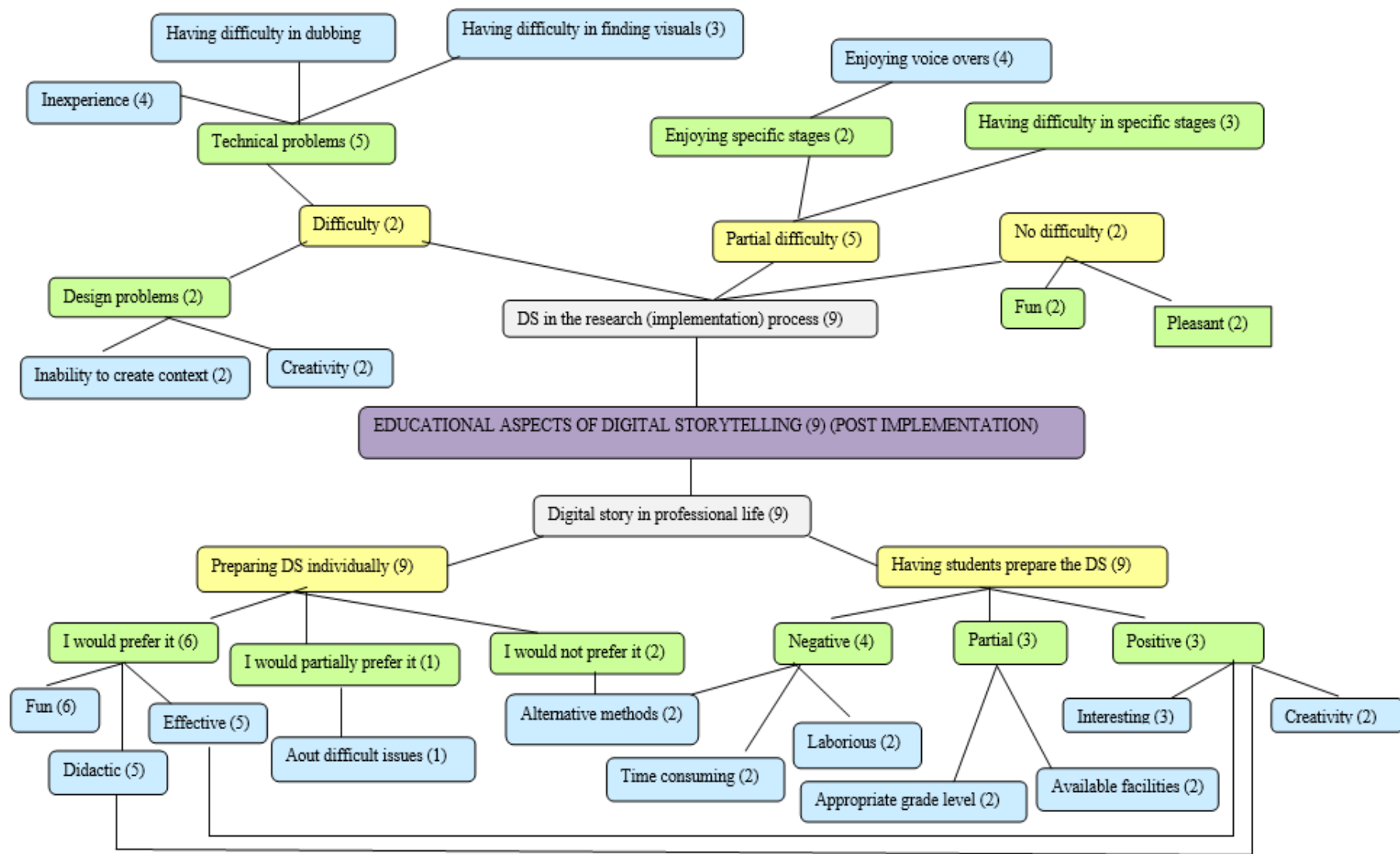


Figure 3. The General Views on the Educational Aspect of DS

In Figure 3, the views of the participants are presented from specific to general. The upper part of the figure presents the participants' short-term DS experiences in the implementation process. Based on these experiences, the long-term views of the participants regarding their professional lives after graduating from the education faculty are presented at the bottom of the figure. Whether the participants will include DS in teaching environments individually (themselves as teachers) in the future or will include DS by having their students prepare digital stories is presented here as well.

Most of the participants were observed to experience some difficulties in their DS experiences during the research process. Participants reported having difficulties stated that they had difficulties at specific stages (for example, dubbing), but they enjoyed the overall process. However, the opposite was also true. Some participants expressed that they did not enjoy the general process and did not find it difficult at any specific stage but they enjoyed the end result. While analyzing the findings, the dubbing stage became a focal point. In the interviews, eight participants mentioned that point and stated that this stage was either very difficult or very enjoyable. A participant's view is provided below:

"I didn't have any problems with the images, but I had a hard time reflecting the voices of the characters while recording the sound. There were a lot of problems at this stage." (P7)

Participants who declared that they had difficulties mostly emphasized technical problems. While there were participants who had problems in finding images or in dubbing, there were also participants who had problems during the design phase. The participants who had difficulty in creating the context and who reported experiencing difficulties in creativity were included in the category of design problems. The participants who reported having a lot of fun and experiencing no difficulties during the process stated that their experience of DS was very pleasant for them.

"I was never involved in digital storytelling before and yet I was not challenged. It was very enjoyable. Learning new things is very valuable and pleasant for me." (P3)

The researcher asked the participants whether they would use digital storytelling in their future professional lives. The responses were categorized in two categories as DS by the teacher and the DS by the students. Most of the participants stated that they would prefer using DS in their professional lives because it is effective, entertaining and instructive. Example of participant statements is presented below.

"In my professional life, I prefer both to prepare a digital story as a teacher and to have my students prepare it. I would even offer to dub the story together if my students agree. It would be a good collaboration. Their learning would be reinforced, their creativity will develop." (P8)

Reporting partial preference for DS, a participant said that it could be included in the classroom depending on the appropriateness of the subject to DS. Two participants declared that DS did not have a significant effect and thought that it would be appropriate to include much more effective alternative teaching methods (drama, effective videos on the internet, web 2.0 tools, etc.) instead of spending time and effort on DS. Example of participant statements is presented below.

“In my opinion, DS is not effective. As a teacher, I would not prepare digital stories myself, nor would I have my students prepare them. There are much more effective videos on the Internet.” (P9).

The participants, who did not take kindly to the idea of having students prepare a digital story, emphasized that this method is time-consuming and laborious. Some participants stated that they would prefer alternative methods in professional life for these reasons. The participants who stated that they would use DS at some grade levels (for example, in 7th and 8th grades) or under some conditions (if students have a computer) were included in the partial category. The participant's opinion supporting this view is given below.

“I would not prefer to have my students prepare digital stories. They can have difficulty. It may not be functional in younger age groups, or it may be a challenging process for students with no technical means.” (P1)

It can be argued that the participants regarded teachers' digital story preparations positively while considered student's digital story preparation to be partially positive. In other words, it was believed that DS would be more functional when teachers were involved in preparation teacher's but difficulties may be experienced when students took the lead.

Figure 3 addresses only the findings regarding the DS process. Figure 4 presents the integration of DS and SSI. To put it more clearly, Figure 4 presents participants' views on the use of digital stories while discussing socioscientific issues.

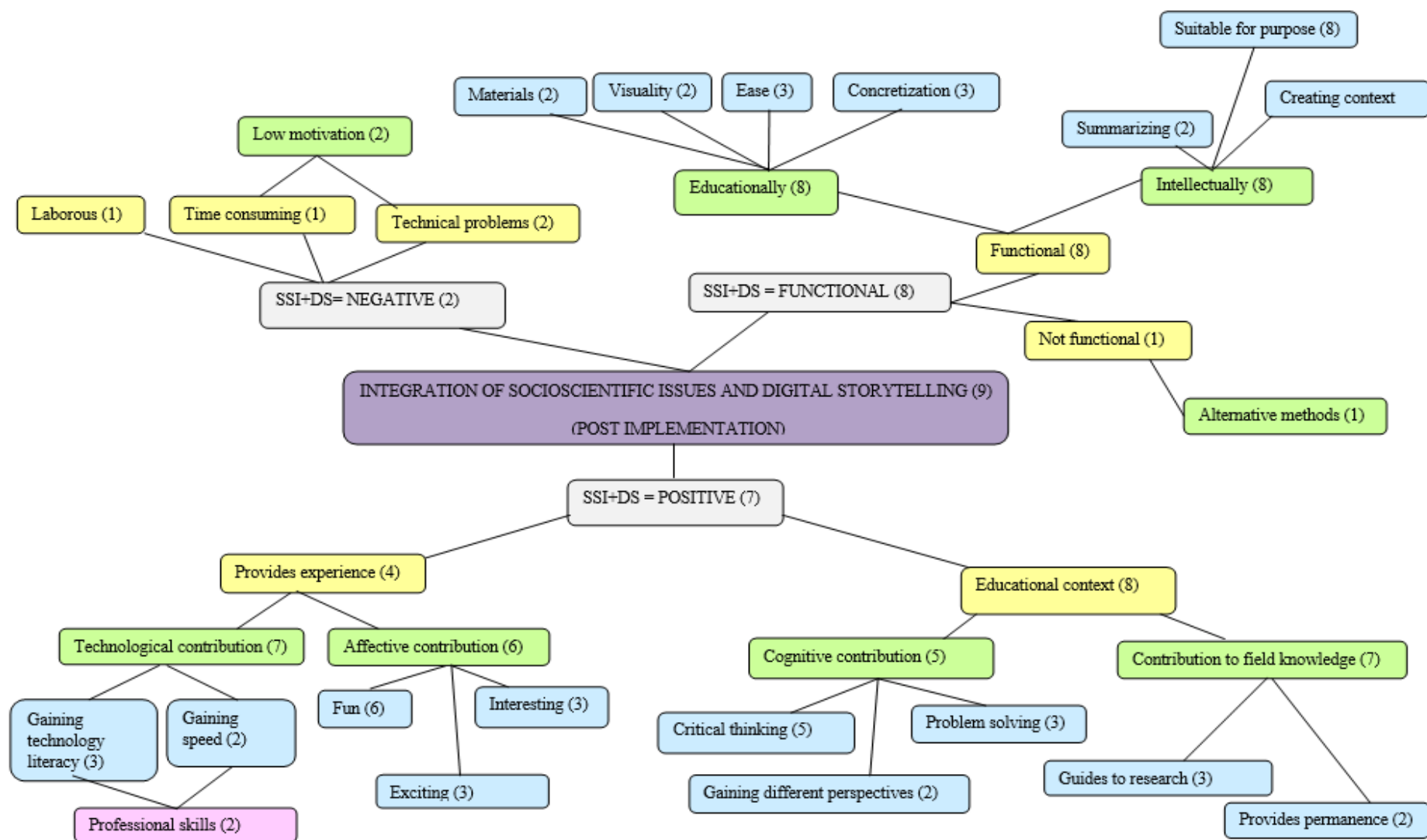


Figure 4. Integration of socioscientific issues and digitalstorytelling

Figure 4 shows that the majority of the participants had a generally positive opinion on the use of DS in SSI. Only two participants expressed a negative opinion about this process. These two participants emphasized that the digital story preparation process was a laborious and time-consuming method. In addition, possible technical problems may cause low motivation for DS. P5 mentioned some the shortcomings in regards to this issue.

"I had technical problems during this process. I was bored and fed up. I tried to increase my motivation by telling myself that this story could be useful for me in my professional life." (P5)

The participants, who were positive about the use of DS in socioscientific issues, evaluated the process both in terms of education and experience. The participants, who stated that preparing digital stories contributed to them both technologically and affectively, reported that their technology literacy increased and they gained speed in the technical sense in this process. Therefore, some participants argued that they would be more professional in the digital sense. The participants who stated that DS is a fun, interesting and exciting teaching material, stated that it would contribute to the teaching process in an affective sense. Participants stated that digital stories would enliven SSI teaching and allow striking points to be emphasized. P6, who was of this opinion, used the following statements in this part of the interview.

"Storytelling of a controversial issue, which is usually addressed verbally, by supporting it with visuals, and moreover, showing striking points in a 5-6 minute story will attract students' attention." (P6)

The participants, who regarded DS in an educational context, believed that DS will contribute to both the teacher and the students. Participants stated that thanks to DS, they could gain the ability to think critically, solve problems and look at issues from different perspectives. Participants who believed that there would be positive effects in terms of content knowledge stated that DS encouraged research because it was required in the preparation stage of the DS. The statement of a participant on this subject is presented below.

"I had the opportunity to learn about the socioscientific topic I chose via both research and watching videos. Considering that digital stories are a multimedia learning tool, we can understand that they will make learning permanent." (P7)

Almost all participants agreed on the functionality of DS in SSI teaching. While eight participants expressed positive opinions at this point, one participant stated that digital stories were not functional and a meaningless method when considering the time and effort spent on preparation. The participant, who stated that he was more interested in alternative teaching methods in SSI teaching for this reason made the following statement.

"If there is a scenario and dialogue to teach the subject, I can make it into a drama activity with my volunteer students. I think it will be much more fun and effective. I don't think DS is interesting." (P9)

The vast majority of the participants found DS to be educational and intellectually functional both as an activity and a teaching material in the educational sense. However, some participants stated that socioscientific issues had a morbid and solution-oriented side due to their nature. In this context, it was stated that SSI, already complex for students, could be difficult and abstract in DS. From this point of

view, a participant, who stated that DS would be a method to make the subject easier and concrete, shared his/her views with the following sentences.

“It is very difficult to describe SSI contexts by simplifying them at students' grade level. I think DS will make this difficult process easier.” (P2)

From an intellectual point of view, the participants pointed out that DS was functional in terms of summarizing and creating context, and that would be an effective method to serve the purpose. It was stated in the interviews that the teaching part could be quite long since SSI was open to discussion. However, it was thought that DS could be a solution for this disadvantageous situation and would contribute to summarizing the issue. The participants believed that DS would be an appropriate method in teaching SSI.

“At the core of socioscientific issues is a real or imagined scenario or context. Similarly, there is a scenario or context at the core of digital stories. For this reason, I think that teaching the subject through context is suitable for both digital story and socioscientific issues.” (P8)

3.1. Results Obtained from Digital Stories

The digital stories, the second data collection tool of the study, were analyzed based on their content according to the criteria in the literature and presented in tables. Table 3 present these results with their sub-dimensions.

Table 3. Rating of Participants' Stories (N=9)

Criteria	Poor (1)	Average (2)	Good (3)	Very Good (4)	Excellent (5)	Mean
Point of view			✓			3.77
Content				✓		4.00
Resources				✓		4.11
Curriculum alignment				✓		4.11
Camera and images			✓			3.77
Title and credits		✓				2.88
Sound				✓		4.22
Language			✓			3.77
Pacing and narrative				✓		4.33
Transitions and effect				✓		4.11
Final score						3.90

In Table 3, participant products were given values between 1-5. The participants performed very well in in pacing and dubbing while preparing their digital stories. In addition, the participants were able to present successful examples in determining the content, using resources, adapting the subject to the curriculum content (level) and providing transitions. The participants who were partially successful in choosing language, camera and images also performed at an acceptably moderate level (good) in the dimension of representing/not representing SSI perspective. At this point, considering that the relevant SSI should be handled in an impartial manner, it can be argued that the participants partially complied with this principle. The dimension in which the participants have the lowest average is the part of naming the digital story. Obtaining the lowest average participants in this sub-dimension was one of the most

striking results of the study. While Table 3 presents all participant findings in general, Table 4 provides separate participant performances.

Table 4. Individual Evaluation of Participant Stories

Criteria	P1	P2	P3	P4	P5	P6	P7	P8	P9
Point of view	4	5	2	4	4	2	5	5	3
Content	3	5	3	5	5	2	5	5	3
Resources	3	4	3	5	5	4	4	5	4
Curriculum alignment	4	4	4	3	5	3	5	5	4
Camera and images	4	4	4	4	3	4	3	4	4
Title and credits	5	3	2	3	3	2	3	2	3
Sound	4	5	5	4	3	4	5	4	4
Language	4	4	4	4	3	4	5	3	3
Pacing and narrative	5	4	5	5	4	3	5	4	4
Transitions and effect	5	4	4	5	4	2	5	4	4
Final score	41	42	36	42	39	30	45	42	36

Numerical examination of the results in Table 4 shows that the digital stories were evaluated over a score of 50 and the participant scores were between 30 and 45. The majority of the participants were able to score above 40. The SSI selected by the participant with the lowest score was the test animals and the SSI selected by the participant with the highest score was global climate change.

3.2. Analyzing Digital Stories in a Socioscientific Context

According to the criteria in the literature, examination of the DS prepared by the participants in the context of SSI requires that the scenario and context should contain basic information and should examine these multi-faceted issues from both sides. There should be a balance when considering the positive and negative points and no perspective should be imposed in an overt or latent manner. When the said criteria were tabulated and the participant products were analyzed within the framework of these principles, the results in Table 5 emerged. A 5-point rating scale was used in Table 5.

Table 5. Analyzing Digital Stories in a Socioscientific Context (N=9)

Criteria	P1	P2	P3	P4	P5	P6	P7	P8	P9	Mean
Providing preliminary information	4	5	2	5	5	3	5	5	5	4.33
Providing positive information/ideas	3	5	1	4	5	2	2	5	1	3.11
Providing negative information/ideas	4	2	4	4	4	5	3	4	4	3.77
Providing the discussion question	1	5	3	2	1	1	1	1	3	2.00

Based on Table 5, it was concluded that the participants were able to successfully incorporate theoretical information about the relevant SSI into the scenario of their digital stories. Considering the above principles, it is desirable to present the positive and negative aspects of SSI to the student in a balanced (neutral) manner. In this context, based on the individual scores of participants, it can be argued that some participants were not able to reflect the positive/negative aspects of the relevant SSI in a

balanced manner. For example, P3 scored 1 point for positive aspects and 4 points for negative aspects. Observing this case in half of the participants (P2, P6, P7, P9) was negative finding. In summary, it can be concluded that the participants could not address the relevant SSI in their digital stories in an unbiased manner and acted partially subjectively while reflecting the positive or negative points in their stories. When the positive and negative points were evaluated separately, it can be argued that the participants had an acceptable and moderate (good) level of success.

4. DISCUSSION AND CONCLUSION

First and foremost, this study explored pre-service teachers' views and experiences on digital story preparation. Then, the study addressed whether the prepared digital stories complied with the criteria and whether they were successfully integrated with SSI. Hence, the research had a four sub-research questions.

The answer to the first research question (the participants' views and expectations before implementation) was collected through interviews. It was found that the majority of the participants had their first experience and in general, they predicted that this process would be enjoyable. Participants believed that the DS process in the context of SSI would contribute to technology literacy. As a matter of fact, this expectation was met based on participant responses in the post-interviews. As in this study, many studies conducted with different age groups in the literature concluded that the participants regarded their DS experience positively (Craciun et al., 2016). For example, the first stage of the research conducted by Ozturk and Bozkurt Altan (2018) included the preparation of a DS about SSI by pre-service teachers and presentation of the prepared stories to secondary school students. At the end of the process, it was determined that the participants had fun during both the preparation and presentation phase of the DS. Although the process experienced by the participants was generally considered to be positive, some difficulties were encountered. Some participants reported technical difficulties and difficulties during the design phases. Sadik (2008) reported that teachers considered technical difficulties as the biggest problem when using DS in their lessons. The study conducted by Sancar Tokmak et al. (2014) concluded that pre-service teachers had a lot of difficulty in the process of creating stories, and that the participants had difficulties in creative thinking and creating visual materials. The study conducted by Uslupehlivan et al. (2017) examined pre-service teachers' experiences of creating digital stories and grouped the difficulties experienced by the pre-service teachers under three headings as technical difficulties, difficulties encountered in the process of creating a story, and time constraints. These comprehensive results were parallel to both the result of the present research and the results of the two studies mentioned above.

In these research interviews, most of the participants stated that they would include digital storytelling in their professional lives in the future, but as a teacher, they would prepare the digital stories themselves. Dogan and Robin (2008) stated that the digital stories could be prepared by both the teacher and the student, but in general, the tendency was getting the students to create stories. Participants in

this study showed a contrary view to the trend in the literature and thought that it would be more appropriate for teachers to prepare the digital stories. Some participants argued that secondary school students should not prepare digital stories because they might have difficulties. This result may be related to the problems experienced by the pre-service teachers in the process. The fact that the participants had their first DS experience in this study and were newcomers to the process may have complicated the process. In addition, preparing their first digital stories in the context of SSI may have challenged the participants even more because they had to consider both the DS criteria and the criteria for preparing scenarios suitable for the SSI context. For example, pacing is a criterion in preparing a digital story (Sadik, 2008). According to Tsai (2018), different ideas in SSI scenarios should be given in a manner that will not overpower each other. A successful digital story in SSI is expected to meet both of the above conditions. In this context, participants need to be competent in two separate issues.

In the context of the third research question, the digital stories prepared by the participants were evaluated in line with the criteria in the literature and the participant products were found to be successful in general. While the participants performed more successfully in the sub-components of the stories such as pacing, sound, transitions, and effects, they showed a partially successful performance regarding the title. Seckin Kapucu and Yurtseven Avci (2020) reached similar results and stated that pre-service teachers were able to present quality DS examples. The study conducted by Park et al. (2017) reported that in their DS experiences, pre-service teachers paid attention to issues such as music, visuality and creating the context. These achievements can be explained by young people's close connection with technology.

The participant products, digital stories, were examined in the context of SSI to answer the fourth research question. Evaluation of the SSI integrated into the digital stories according to the criteria in the literature showed that the participants were able to successfully transfer the theoretical information about the relevant SSI to their digital stories (Table 5). Integrating the theoretical part and prior knowledge into the story is partly independent of the participant's worldview or imagination. In this context, it can be argued that this part is easier. Therefore, the success of the participants in this area can be explained in this manner. The digital stories in the context of SSI should present positive and negative ideas or information about the subject in a balanced figure (Bossler & Lindahl, 2017). The results in Table 5 as a total score show that the participants were partially successful in this regard. However, the individual data in Table 5 demonstrate that some participants were not completely unbiased while preparing their scenarios. While addressing the fourth research question, interview findings were examined along with participant products (Figure 4). It was concluded that most participants found DS preparation in SSI functional in the integration of SSI and DS. The participants emphasized that DS could be a method or teaching material that could be useful in SSI teaching. Since two research results were found in the literature addressing digital stories in the context of SSI, the current research findings can only be associated with the results of these two studies. The first of these studies (Park, et al., 2017) concluded that students were able to develop multiple perspectives and exhibit their creativity in areas such as

music and visual effects to express themselves, thanks to the DS prepared in the context of SSI. Based on these results, the researchers argue that DS can be an effective method in SSI teaching. Pre-service science teachers prepared digital stories in the context of SSI and presented their performances to secondary school students in the second study (Ozturk & Bozkurt Altan, 2018) addressing the relationship between SSI and DS. It was stated by the researchers that positive results were achieved in the study that revealed secondary school students' argument quality in SSI and pre-service teachers' DS experiences.

This study sought answers to the following question: "Is digital storytelling functional in teaching socioscientific issues?" In the framework of the study, digital stories were prepared individually by nine pre-service teachers on nine different socioscientific topics to find the answer to this question.

Based on the findings obtained from the pre- and post-interviews, the first data collection tool, it can be argued that the participants did not have knowledge and experience about DS before the implementation. At the end of the implementation, there were more positive opinions about DS in general. Participants who thought that the use of DS in the context of SSI was functional believed that the process would contribute to both the teacher and the student in many ways (technological, cognitive, affective, etc.).

In the current study, some of the participants who viewed SSI and DS integration positively mentioned the educational benefits and expressed concepts such as critical thinking and gaining different perspectives. In addition, the participants who stated that they had positive emotional experiences used words such as fun and exciting. The participants who stated that this process contributed to improvements in technological skills stated that they had more positive experiences. In support of the participant views, Matthews (2014) also predicts that DS can improve 21st century students' digital literacy skills. On the other hand, there are one or two participants in the study group who did not favor the use of digital stories in SSI and other science subjects and did not find DS functional. Participants who supported this view described digital stories as tedious, time-consuming and ineffective teaching materials.

The digital stories prepared by the participants were used as the second data collection tool in this study and they were evaluated in line with the criteria in the literature. The discussion question in the digital story was the sub-dimension in which the participants had the lowest numerical average. In this part, the participants achieved a mediocre score. The fact that the discussion questions were either unproductive or inexistent in the digital story prepared by the participant, who had a subjective point of view, was both a striking and relevant result.

IMPLICATIONS

In this study, it was observed that most of the pre-service teachers in their 4th year at undergraduate education did not have DS experience before. It can be recommended to open undergraduate level courses so that pre-service teachers may get to know and experience DS and other

technological applications much earlier. In addition, this study investigated the integration of DS and SSI with a small study group. The study obtained mostly positive experiences and results and the data were collected through DS and interviews. More generalizable results can be obtained in studies conducted with larger study groups. In addition, no intervention was made in this study to improve students' skills in the context of DS or SSI. By designing studies in an experimental design, studies can be conducted to improve students' skills in both key concepts (for example, creativity, argument quality, etc.) and contribute to the literature. In the current study, digital stories were prepared individually for the participants. In the implementation to be made, the participants can also be made to work in groups.

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APPENDIX

Pre-Implication Interview Questions

1. What do you know about digital storytelling?
2. Which socioscientific topic have you chosen in the digital storytelling process?
3. What is your level of knowledge about the socioscientific issue that you will prepare as a digital story?
4. Do you think that preparing a digital story on a socioscientific topic can contribute to you?
5. Do you think it might be difficult to prepare a digital story on a socioscientific issue?
6. What do you think about the digital story preparation process?

Post-Implication Interview Questions

1. Would you prefer to prepare digital stories as a teacher in your professional life? (Explain your reasoning)
2. In your professional life, would you prefer assignments (projects) related to preparing digital stories for your students? (If yes or no, please explain it)
3. How was the process of your digital story assignment? (Was it boring, enjoyable, interesting or hard?)
4. How did the digital story assignment (project) affect your perspective and interest in the lesson?
5. What were the positive aspects of preparing digital stories for you?
6. What were the negative aspects of preparing digital stories for you?
7. What kind of contribution does preparing a digital story on a socioscientific subject provide to you?
8. What do you think about the functionality of digital stories in teaching socioscientific issues? (Does it serve the purpose? If yes or no, please explain it)

GENİŞLETİLMİŞ TÜRKÇE ÖZET

DİJİTAL ÖYKÜLER SOSYOBİLİMSEL KONULARDA İŞLEVSEL Mİ?: ÖĞRETMEN ADAYLARININ DENEYİMLERİ

Teknolojideki gelişmelerin yaşantımıza etkileri her geçen gün artmakta ve özellikle alfa kuşağını çepeçevre sarmaktadır. Bilim ve teknolojinin ilerlemesi gündemdeki konuları, öğretim programları vb. birçok noktayı etkilemektedir. Bu bağlamda günümüz öğretmenleri uzay kirliliğinden, pandemik aşya kadar birçok güncel, bilimsel ve bir o kadar da toplumsal konuları ele almak zorundadır. Sosyobilimsel konular (SBK) olarak adlandırılan ve bir tarafı sosyal bir tarafı bilimsel olan, ikilemler barındıran (Zeidler, Herman & Sadler, 2019) ve çözülmeyi bekleyen bu konular (nükleer enerji, biyoteknoloji, hidroelektrik santraller vb.) öğretim programlarında da giderek daha çok yer almaktadır (MEB, 2018). Yukarıda bahsedilen konuların çağdaş yaklaşımlar ve öğretim araçları eşliğinde yapılan öğretim faaliyetlerinin öğrenciler üzerinde daha etkili olacağı ifade edilebilir. Söz konusu yeni nesil öğretim araçlarından bir tanesinin dijital öykülerdir. Dijital Öyküler (DÖ) multimedya teknolojilerini kullanarak öğrenciye veya öğretmene kendisini ifade etme şansı veren yeni nesil öğrenme/öğretme araçları olarak tanımlanmaktadır (Robin, 2008). Alanyazında DÖ'nün fen eğitiminde kullanılabilirliğini dile getiren çalışmalar mevcuttur (Akgul, Tanriseven, 2019; Craciun vd., 2016; Hoban, vd., 2015; Hung vd., 2012; Sancar Tokmak, vd., 2014) Ancak mevcut çalışmanın odağını oluşturan DÖ ve SBK'yi birlikte ele alan çalışmaların oldukça sınırlı sayıda olduğu görülmektedir (Ozturk & Bozkurt Altan, 2018; Park, vd., 2017). Gerek artarak öğretim programına dahil olan SBK'nın gerekse çağdaş öğretim araçlarından biri olan DÖ'nün nitelikli bir şekilde sınıf ortamına taşınabilmesinde öğretmenler anahtar rol oynamaktadır. Öğretmen adaylarının da eğitim sistemine dahil olmasına sınırlı zaman kaldığı düşünülürse eğitim fakültelerinde olabildiğince zengin deneyimler yaşaması ve güncel tekniklerden haberdar olması gerekmektedir. Bu noktadan hareketle çoğu öğretmen adayının daha önce tecrübe etmediği çağdaş bir uygulamayı mesleki yaşamlarına aşlamadan önce öğrencilik döneminde deneyimlemesinin yararlı olacağı düşünülmekte ve gençlerin potansiyellerinin gözlemlenmesi amaçlanmaktadır. Bu bağlamda mevcut çalışmanın alan yazına katkı sağlayacağı düşünülmekte ve “dijital öykülerin sosyobilimsel konuların öğretiminde işlevsel mi?” sorusuna cevap aramaktadır. Araştırma sorusu kapsamında bulunan dört alt amaç çerçevesinde çalışma tasarlanmıştır. Katılımcıların DÖ hazırlama sürecine yönelik beklentileri, DÖ hazırlama sürecine yönelik görüş ve deneyimleri, hazırlanan DÖ'nün niteliği ve SBK bağlamında DÖ'nün içerik ve niteliği alt amaçlardaki odak noktalarını oluşturmaktadır.

Araştırma nitel araştırma yaklaşımlarından eylem araştırmasına göre gerçekleştirilmiştir. Eylem araştırmalarında öğretmenin araştırma sürecine bizzat katılabilmesi ve okulu bir araştırma sahası haline getirebilmesi söz konusudur (Yıldırım & Şimşek, 2013). Araştırmada yer alan 21 katılımcı Türkiye'deki bir devlet üniversitesinde Fen Bilgisi Öğretmenliği Anabilim Dalı'nda 4. Sınıf düzeyinde öğrenim

görmektedir. 15 hafta süren çalışmanın başında ve sonunda katılımcılar ile görüşmeler yapılmıştır. Çalışmanın 2. ve 13. haftaları boyunca araştırmacı tarafından katılımcılara DÖ hakkında mentörlük hizmeti verilmiştir ve katılımcılar bu süreçte seçtikleri SBK ile ilgili DÖ hazırlamıştır.

Araştırmada veriler yarı yapılandırılmış mülakatlar (uygulama öncesi ve sonrası) ve katılımcı ürünleri (dijital öyküler) aracılığı ile toplanmıştır. Mülakatlar, katılımcıların dijital öyküleme sürecine yönelik deneyimlerini ortaya çıkarmayı amaçlamaktadır. Katılımcı ürünleri, hem öğretmen adaylarının süreci deneyimlemesine zemin hazırlamakta hem de hazırlanan ürünlerin alanyazındaki kriterlere göre değerlendirildiğinde “gerçekten dijital öykü” olup olmadığına dair araştırmacıya fikir vermektedir.

Görüşmelerin analizinde içerik analiz yöntemi kullanarak veriler analiz edilmiştir. Görüşmelerden elde edilen veriler transkript edilerek kod ve temalar oluşturulmuştur. Ardından bulguları ayrıntılı bir şekilde görebilmek adına araştırmacı tarafından matrisler oluşturulmuştur. Dijital öykülerin değerlendirilmesi aşamasında ise betimsel analiz yöntemine yer verilmiştir. DÖ'nün niteliği incelenirken katılımcıların hazırladığı dijital öyküler alanyazındaki kriterler baz alındığında “gerçek bir dijital öykü” olabilmiş midir? sorusu ekseninde analizler yapılmıştır. Bu cevabı bulabilmek için Sadık (2008) tarafından geliştirilen DÖ değerlendirme rubriği kullanılmıştır. Katılımcı ürünleri “gerçek bir dijital öykü olabilmişse sosyobilimsel konulara uygun şekilde entegre edilebilmiş midir?” sorusunu cevaplayabilmek için de Atabay, Topçu ve Çiftçi'nin (2018) çalışmalarındaki kriterler baz alınmıştır.

Verilerin analizi aşamasında fen eğitiminde ve nitel analizde uzman niteliğinde bir başka araştırmacıdan (bağımsız puanlayıcı) yardım alınmıştır. Transkriplerin yarısını inceleyen bağımsız puanlayıcı ile araştırmacı arasında Miles ve Huberman'ın (1994) görüş birliği/ görüş ayrılığı formülüne göre %92 oranında görüş birliği sağlanmıştır. Mevcut araştırmada inandırılabilirlik ve aktarılabilirliğin sağlanabilmesi için araştırma süreci okuyucuya detaylı olarak açıklanmaya çalışılmıştır. Ayrıca zaman zaman katılımcıların ham verilerinden örnekler bulgular bölümünde alıntılar halinde sunulmuştur.

Birinci veri toplama aracı olan ön ve son mülakatlardan elde edilen bulgular genel olarak değerlendirildiğinde katılımcıların uygulama öncesinde DÖ'ye dair bilgi ve deneyimlerinin olmadığı söylenebilir. Uygulama sonunda ise DÖ'ye dair genel olarak olumlu görüşlerin de daha fazla olduğu sonucuna ulaşılabılır. DÖ'nün eğlenceli, etkileyici ve öğretici olduğunu dile getiren katılımcılar çoğunlukla yer alırken az sayıda katılımcı da DÖ'nün zahmetli ve zaman alıcı bir öğretim materyali olduğunu ifade etmektedir.

DÖ'nün SBK bağlamında ele alındığında katılımcılar SBK gibi çok boyutlu konularda DÖ sayesinde bütüncül bakılabildiğini ifade etmektedir. DÖ kullanılmasının işlevsel olduğunu düşünen katılımcılar birçok açıdan (teknolojik, bilişsel, duyuşsal vb) hem öğretmene hem de öğrenciye katkı sağlayan bir süreç olduğuna inanmaktadır.

İkinci veri toplama aracı olan katılımcı ürünlerinden (dijital öyküler) elde edilen bulgulara katılımcıların DÖ içeriğini belirleme, kaynak kullanımı, konuyu müfredat içeriğine (düzeyine) uyarlama ve geçişleri sağlamada da başarılı örnekler sunabilmişlerdir. Dil, kamera ve resim seçme konusunda kısmen başarılı olan katılımcılar SBK'da bakış açısını gösterme/göstermeme boyutunda da kabul edilebilir orta düzeyde performans göstermiştir. Ayrıca katılımcıların DÖ'de ilgili SBK hakkında teorik bilgileri başarılı bir şekilde senaryoya dahil edebildiği görülmektedir. Ancak bazı katılımcıların dijital öykülerinde ele aldıkları SBK'yı tarafsız bir şekilde ele alamadığı ve olumlu ya da olumsuz noktaları öykülerine yansıtarken kısmen subjektif davrandığı yorumuna ulaşılabilir. Olumlu ve olumsuz noktalar kendi içinde ayrı ayrı ele alındığında katılımcıların kabul edilebilir ve orta düzeyde başarı gösterdiği söylenebilir.

Araştırma sonuçları genel olarak değerlendirildiğinde katılımcılar tarafından genel olarak yaşanan süreç olumlu bir deneyim olarak algılansa da bazı sıkıntılar ile karşılaştığı söylenebilir. Sancar Tokmak ve arkadaşları (2014) tarafından yapılan çalışmada öğretmen adaylarının öykü oluşturma sürecinde çok zorlandığı, katılımcıların yaratıcı düşünme ve görsel materyaller oluşturmada sıkıntı yaşadığı sonucuna ulaşılmıştır. Bahsedilen sıkıntılardan dolayı katılımcıların çoğu mesleki yaşamlarında dijital öykülemeye yer vereceğini ancak öğretmen olarak DÖ'yü bizzat kendilerinin hazırlayacağını ifade etmektedir.

Katılımcılar tarafından hazırlanan DÖ alanyazındaki kriterler doğrultusunda değerlendirilmiş ve genel olarak katılımcı ürünleri başarılı bulunmuştur. Seçkin Kapucu ve Yurtseven Avcı (2020) da benzer sonuçlara ulaşarak öğretmen adaylarının nitelikli DÖ örnekleri sunabildiğini belirtmiştir. Söz konusu başarı örnekleri genç yaştaki öğretmen adaylarının teknoloji ile sıkı bağ kurması ile açıklanabilir. SBK ile DÖ entegrasyonunda çoğu katılımcının SBK'de DÖ hazırlamayı işlevsel bulduğu sonucuna ulaşılmıştır. Katılımcılar tarafından SBK öğretiminde DÖ'nün amaca hizmet edebilecek bir öğretim materyali olabileceği vurgulanmıştır. Park, vd. (2017) SBK bağlamında hazırlanan DÖ sayesinde öğrencilerin çoklu bakış açıları geliştirebildiği ve kendilerini ifade etmek için müzik, görsel efekt gibi noktalarda yaratıcılıklarını sergilediği sonucuna ulaşmıştır.

Mevcut çalışmada küçük bir çalışma grubu ile DÖ ve SBK entegrasyonuna bakılmıştır. Çoğunlukla olumlu deneyimlerin ve sonuçların elde edildiği çalışmada DÖ ve mülakatlar aracılığı ile veriler toplanmıştır. Daha geniş çalışma grupları ile yapılan çalışmalarda temsil gücü yüksek sonuçlar elde edilebilir. Ayrıca bu çalışmada öğrencilerin DÖ yada SBK bağlamındaki becerilerini geliştirebilmek adına müdahalede bulunulmamıştır. Deneysel desende çalışmalar tasarlanarak öğrencilerin her iki anahtar kavramdaki becerilerini (örneğin yaratıcılık, argüman niteliği vb.) geliştirmek adına çalışmalar yapılarak alanyazına katkı sağlanabilir.

**EFFECTS OF PHYSICAL ACTIVITY PROGRAMS OF SCHOOL-BASED
INTERVENTION ON PHYSICAL FITNESS AND PSYCHOLOGICAL RESPONSE:
A SYSTEMATIC REVIEW**

Yağmur ÖZATİK¹

Umut GÖK²

Geliş Tarihi/Received:04.12.2022 Kabul Tarihi/Accepted:14.12.2022 Elektronik Yayın/Online Published:15.12.2022

DOI: 10.48166/ejaes.1214508

Abstract

This systematic review aimed to investigate the effect of school-based physical activity interventions on physical fitness and psychological responses in children and young people. Studies were conducted from Web of Science, Scopus and PubMed databases between 1 January 2017 and 1 December 2022 according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist. For the research to be conducted in the databases, "School-Based Intervention", "physical fitness ", "Psychology", School-based intervention, physical fitness and psychological responses were used in the title and abstract. The database review revealed seventy-four (74) studies. However, after eliminating seventeen (17) duplicate studies, fifty-five (57) studies remained. Subsequently, seventeen (17) studies were eliminated after reviewing the abstracts. After forty (40) studies were thoroughly analysed, eighteen (18) publications not involving psychological factors, five (5) publications involving research methods and six (6) review studies were excluded. The remaining eleven (11) studies were used after review. The results of the present systematic review showed that school-based physical activity interventions contribute positively to children's physical fitness and psychological health while ensuring a healthy life for years to come.

Keywords: Adolescents; children; physical activity; psychological response; school-based intervention

¹Research assistant, Tokat Gaziosmanpaşa University, Tokat, Turkey, yagmur.ozatik@gop.edu.tr, ORCID: 0000-0003-4208-4516

² PhD student, Tokat Gaziosmanpaşa University, Tokat, Turkey, gokumut80@gmail.com, ORCID: 0000-0002-5596-884X

OKUL TEMELLI FİZİKSEL AKTİVİTE UYGULAMALARININ FİZİKSEL UYGUNLUK VE PSİKOLOJİK CEVAPLAR ÜZERİNDEKİ ETKİLERİ: SİSTEMATİK BİR İNCELEME

Özet

Bu sistematik derlemenin amacı okul temelli fiziksel aktivite uygulamalarının çocuklar ve gençlerde fiziksel uygunluk (FU) ve psikolojik cevaplar üzerindeki etkisini araştırmaktır. 1 Ocak 2017 ile 1 Aralık 2022 tarihleri arasında Web of Science, Scopus ve PubMed veri tabanlarından Sistematik İncelemeler ve Meta-Analizler için Tercih Edilen Raporlama Ögeleri (PRISMA) kontrol listesine göre çalışmalar taranmıştır. Veri tabanlarında yapılacak araştırma için başlık ve özetle “Okul Temelli Uygulama”, “fiziksel uygunluk”, “Psikoloji”, okul temelli uygulamalar, fiziksel uygunluk ve psikolojik yanıtlar kullanılmıştır. Veritabanı incelemesinde, yetmiş dört (74) çalışma ortaya çıkmıştır. Ancak tekrar eden on yedi (17) çalışma hariç tutulduktan sonra geriye elli beş (57) çalışma kalmıştır. Daha sonra, özetler incelendikten sonra on yedi (17) çalışma daha hariç tutulmuştur. Kırk (40) çalışma kapsamlı bir şekilde analiz edildikten sonra, psikolojik faktörleri içermeyen on sekiz (18) çalışma, araştırma yöntemlerini içeren beş (5) yayın ve derleme çalışması olan (6) yayın hariç tutulmuştur. Kalan on bir (11) çalışma incelemeden sonra kullanılmıştır. Mevcut sistematik incelemenin sonuçları, okul temelli fiziksel aktivite uygulamalarının çocukların fiziksel uygunluklarına ve psikolojik sağlığına olumlu katkıda bulunurken, gelecek yıllarda sağlıklı bir yaşam sürmelerini sağlamaya yardımcı olacağını göstermektedir.

Anahtar Kelimeler: Ergenler; çocuklar; fiziksel aktivite; psikolojik tepki; okul temelli müdahale

1. INTRODUCTION

Over the last 30 years, childhood obesity has reached epidemic proportions worldwide (Abarca-Gómez et al., 2017; WHO, 2018). Therefore, the importance of encouraging children to remain physically active is increasing (Reisberg et al., 2020; Riso & Jürimäe, 2018). Physical activity (PA) and physical fitness (PF) are significant instruments for enhancing the quality of life for people with health conditions as well as the cognitive aspect of development in children (Donnelly et al., 2016). Increasing the time spent actively is one of the strategies to cope with obesity. Research recommends 60 minutes of moderate-intensity physical activity (MVPA) per day for children and adolescents aged 5 to 17 (Strong et al., 2005; Janssen, 2007). However, physical activity (PA) data collected in adolescents aged 13 to 15 years from 105 countries worldwide reveal that 80.3% do not meet recommended activity guidelines (Hallal et al., 2012). In addition, studies (Nader et al., 2008; Sember et al., 2020) indicate a significant decline in PA levels during adolescence. The young population has shown less PA participation than moderate exercise recommended in PA guidelines (Costa et al., 2017). Therefore, the active participation of children and young people in physical education classes in schools will play an essential role in physical and psychological well-being.

Schools should be where children and adolescents spend most of their time, as well as a target setting for PA promotion among children and young people (Van de Kop et al., 2019). In addition, the school environment is ideal for implementing PA interventions (Kelso et al., 2020). Because children spend much time at school, schools are recognised as adequate settings to increase the PA levels of

children and adolescents who spend most of their time sitting (Dobbins et al., 2013). The meta-analysis study of Van de Kop et al. (2019) showed that school-based PA interventions increase pre-occupational PA in adolescents. In addition, it is known that PA practices implemented in the school environment contribute positively to the health factors of children and adolescents (Demetriou & Honer, 2012). Inadequate PA is one of the ten (10) leading risk factors for death worldwide and a significant risk factor for non-communicable diseases (WHO, 2018). Low PA levels have been associated with overweight obesity and a higher risk of cardiovascular disease in school-age children (Carson et al., 2016; Kurdaningsih et al., 2016; Ekelund et al., 2012). Furthermore, there is a gender-based inequality in PA among children and adolescents, with girls performing less moderate-to-vigorous PA than boys (Hubbard et al., 2016; Póvoas et al., 2018; Long et al., 2013; Chen et al., 2022). Therefore, it is important to create gender-sensitive environments where children and adolescents can regularly engage in moderate-intensity PA to improve their health profile.

School-based PA programmes aim to achieve and maintain a health-related PF level (Yuksel et al., 2020). PF is divided into two parts: fitness related to health and fitness related to motor skills or performance (Vanhees et al., 2005). Coordination, agility, balance, power, speed, and reaction based on performance are all components of skill-related fitness, as opposed to health-related fitness, which focuses on factors like composition and flexibility (Powell et al., 1989; Caspersen et al., 1985). Fitness connected to motor skills is a major element of children's development. However, children's PF may be impacted if they have trouble completing motor skills (Smits-Engelsman et al., 2020). In addition, the competence in fundamental movement skills that provide motor competence and PF of children in daily activities at later ages is directly related to a healthy and active life (Barnett et al., 2008). In this sense, some studies have found that school-based programmes have the potential to improve PF (Neil-Sztramko et al., 2021). As a result, in school-age children, having a healthy cardiorespiratory fitness level, a crucial PF indicator, provides the physical foundation for good mental health and psychological well-being (Chen et al., 2022).

Children and adolescents spend a large part of their lives at school, and this setting significantly impacts how they grow socially, emotionally, and psychologically (Tejada-Gallardo et al., 2020). According to findings by Greenleaf et al. (2010), students with better cardiorespiratory fitness had higher self-esteem and fewer depression symptoms. Additionally, studies show that kids aged 7 to 12 with good cardiorespiratory fitness outperformed their unfit peers on cognitive tests (Haverkamp et al., 2021; Blair et al., 2001). Furthermore, PA positively correlates with school success and perceived pleasure (De Souza et al., 2021).

The structure of the PE curriculum in schools has consistently changed the quantity of PA and student motivation, favouring the quality of life and other biomarkers (Delgado-Floody et al., 2019). Considering the literature, adequate participation in physical education effectively contributes to developing a healthier lifestyle in children and adolescents throughout their lives. Therefore, the main

aim of this systematic review is to examine the effect of school-based PA practices on PF and psychological responses in school-age children and adolescents.

2. MATERIALS AND METHOD

This study is a systematic review of articles in various scientific peer-reviewed journals to examine the effects of school-based PA interventions on PF and psychological responses.

2.1. Inclusion Criteria

Studies that included school-based PA practices and examined PF and psychological responses were included in the study. In addition, the included studies were considered to be peer-reviewed publications and published in English between 1 January 2017 and 1 December 2022. Studies that did not have a school-based practice did not examine PF and psychological reactions, and a study protocol was not included in the study.

2.2. Research Strategy

In the study, Web of Science (WOS), Scopus and Pubmed databases were searched for relevant scientific studies published in English between 1 January 2017 and 1 December 2022 using the keywords " School-Based Intervention ", "PF", "Psychology", in the title and abstract in the context of School-Based Intervention (SBI), PF and psychological responses. After the database review, 74 studies were found. However, 17 repetitive studies were removed, and 57 studies remained. Afterwards, 17 studies whose abstracts were analysed were excluded. As a result of analysing 40 studies in full text, 18 articles that did not contain psychological variables, 5 with study protocols and six review studies were excluded. After the review, the remaining 11 studies were used (Figure 1). The current review study fulfilled the inclusion criteria using the PICO approach (Table 1) (Huang, Lin, & Demner-Fushman, 2006).

3. RESULTS

The results regarding the effects of school-based practices on PF and psychological responses are presented.

3.1. Outcomes Regarding PA, PF and Psychological Response

3.1.1. PA

Studies investigated measuring PA levels are examined, and improvements occur in the PA results measured by accelerometer and PA scale in the groups performing school-based practice (Ha et al., 2020a; Morano et al., 2020a; Morano et al., 2020b). However, in a study by Liang et al. (2020), no significant difference was observed in the time spent in sedentary behaviour, moderate PA (MPA) and vigorous PA (VPA) levels, while significant improvements were observed in light PA (LPA).

3.1.2. PF

PF tests have shown that SBIs have shown significant improvements in aerobic endurance, flexibility, muscular strength, muscular endurance and strength results (Morano et al., 2020a; Pittman,

2020; Morano et al., 2020b; Kwasky & Serowoky, 2018; Sjöwall et al., 2017). However, in the study conducted by Murphy et al. (2022), it was observed that there was little or no effect on the components of PF. In addition, improvements in perceived physical competence and body image were observed (Morano et al., 2020a; Morano et al., 2020b). The results of anthropometric measurements show that school-based practices have a positive effect on body mass index, body fat percentage, and arm and waist circumference (Morano et al., 2020a; Kwasky & Serowoky, 2018), in contrast to studies showing no effect (Pittman, 2020; Liang et al., 2020). In addition, Morano et al. (2020a) stated that school-based practices decreased skinfold thickness.

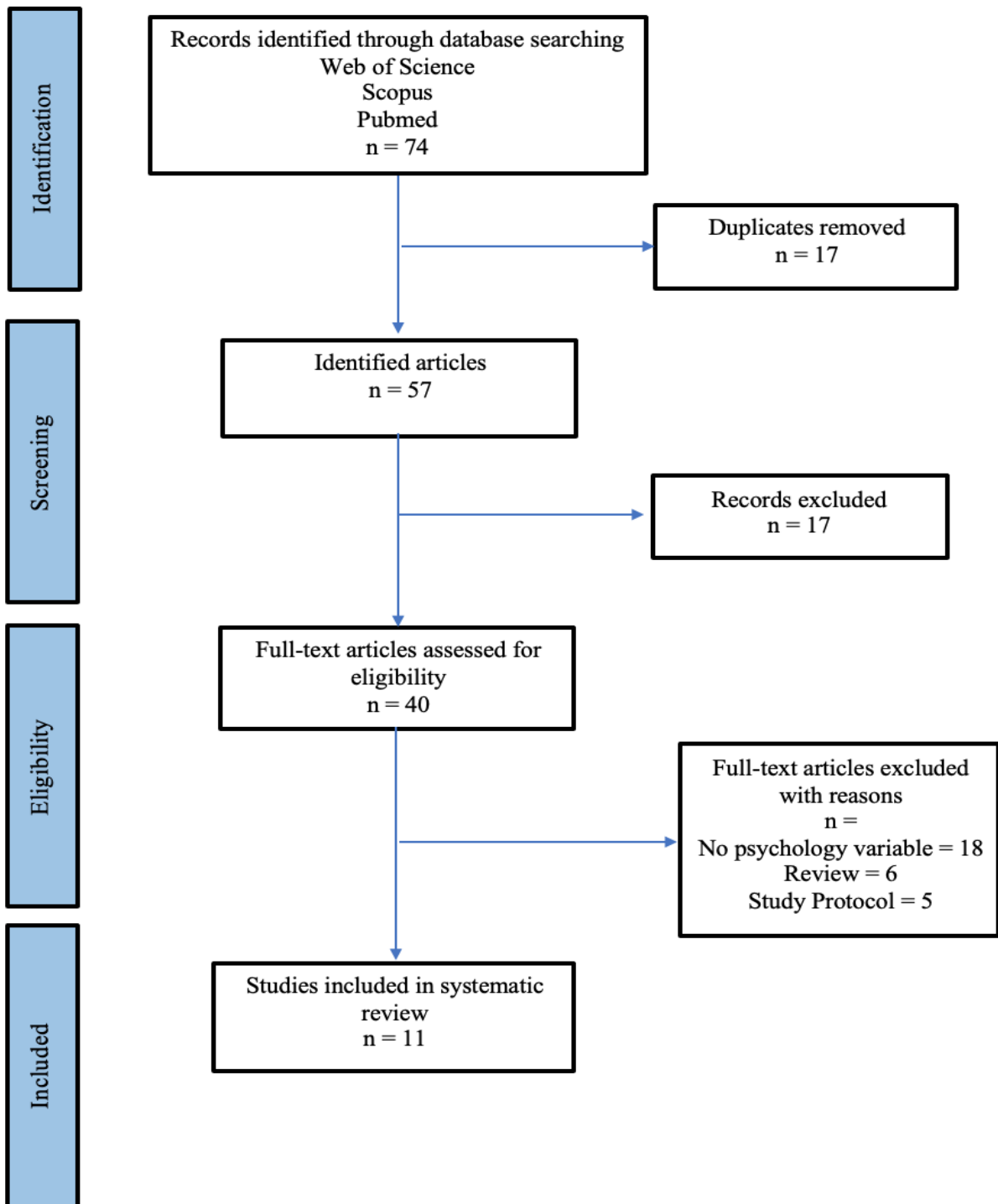


Figure 1. Study selection flowchart

Table 1. PICO Criteria

	Criteria
Population	Students
Intervention	School-Based Intervention
Comparison	School-Based Intervention on PF and psychological response
Results	PF (PA levels, body composition, fitness components, body fat percentage etc.) Psychology (psychology, anxiety, self-esteem, stress etc.)

3.1.3. Psychological Responses

When the studies on psychological responses were examined, Jin et al. (2018) evaluated the significant relationship between PA. They perceived general health and the enjoyment of PA in physical education classes for students aged 5-11 years with a PA level of at least 60 minutes per day and PA in recess for students aged 12-15 years. While the effect of enjoyment on students in physical education class was found to be greater, no effect was observed in children who did PA during recess. Similarly, Hatch et al. (2021) found that students enjoyed the Daily Mile exercises they applied to primary school students. However, Liang et al. (2020) stated that school-based practice did not positively affect enjoyment. In contrast to the studies (Pittman, 2020; Liang et al., 2020), which found no effect of school-based practices on self-efficacy, Murphy et al. (2022) stated that students who participated in school-based PA 2 or 3 days a week increased their self-efficacy levels. Sjöwall et al. (2017) reported that the stress levels of students exposed to a total of 120 minutes of PA per week at school decreased, while the stress levels of those exposed to 300 minutes of PA per week increased. Murphy et al. (2022) reported that while no difference in the group that practised PA one or three days a week, there was an increase in anxiety levels in the group that never practised or practised two days a week and in the same study, it was stated that participation in PA two days a week resulted in a decrease in depression. Kwasky and Serowoky (2018) stated that significant improvements were observed in the social sub-dimension of the scale applied to students four weeks after the end of school-based practices for eight weeks, while Liang et al. (2020) stated that there was no effect on any social support. Ha et al. (2020b) implemented SELF-FIT, a school-based practice, instead of typical physical education classes. They found that SELF-FIT strengthened students' competence, autonomy, and engagement compared to physical education classes. In another study (Ha et al., 2020a), the effects of the same SBI on genders were examined. It was found that the intervention effects were stronger in meeting girls' competence, autonomy needs, and autonomous motivation than boys. In addition, they noted that boys in physical education programs reported higher levels of need fulfilment and autonomous motivation, as well as being more active than girls.

4. DISCUSSION

This systematic review aimed to examine the effects of school-based PA interventions on PF and psychological responses. Studies (Sjöwall et al., 2017; Jin et al., 2018; Kwasky & Serowoky, 2018; Morano et al., 2020a; Morano et al., 2020b; Ha et al., 2020a; Ha et al., 2020b; Pittman et al., 2020; Liang et al., 2020; Hatch et al., 2021; Murphy et al., 2022) all showed that significant improvements were achieved in at least one variable. The content and details of the SBI programme are significant in these studies. As a result of classifying the programme details according to the PA focus, the number of studies directly including PA was 4 (Morano et al., 2020a; Morano et al., 2020b; Ha et al., 2020a; Liang et al., 2020), PF components were 8 (Sjöwall et al., 2017; Kwasky & Serowoky, 2018; Morano et al., 2020a; Morano et al., 2020b; Ha et al., 2020b; Pittman et al., 2020; Liang et al., 2020; Murphy et al., 2022) and all 11 studies included psychological responses.

Considering the variables examined, using PA interventions in schools generally positively affects PF and psychological health. These results highlight the importance of planning the time required for PA programmes in schools, especially in children and adolescents with disabilities (Jin et al., 2018) and obese or overweight (Morano et al., 2020a) groups. The success of school-based PA interventions is influenced by the prevalence of age-appropriate or more specific PA opportunities and content available to young people, whether linked to behaviour or health outcome change (Burns et al., 2017). The priority of lifelong PA and health programmes should be the preparation of appropriate learning environments. The goal of health-based physical education curriculum models targeting a physically active life is to maintain these appropriate learning environments (Haerens et al., 2011). Although evaluations related to different variables have been made in school-based PA studies, only PF and psychological dimensions have been addressed in this systematic research.

While favourable results were observed in four studies regarding the PF factor, no effect was observed in two studies. One study reported improvements in fitness tests and increases in anthropometric measures (such as body fat percentage, BMI). The main goal of school-based PA programmes is to improve health-related PF and to ensure that this is long-lasting. Therefore, in this review study, health-related (Ortega et al., 2008) PF components (anthropometrics, muscular strength, muscular endurance, flexibility, etc.) were assessed. In some studies, there are results showing that SBIs are effective in improving PF (Lu et al., 2018; Janssen & LeBlanc, 2010; Bogataj et al., 2021). Unlike typical PE lessons, SELF-FIT practice improves students' competence, autonomy and relatedness skills. Guthold et al. (2020) reported that low PF among adolescents is relatively high, and the global prevalence of inadequate PA is 78.4% for boys and 84.4% for girls aged 11-17.

Table 2. A Detailed Overview of the Work

Reference	Sample	Study design	Protocols	Measurements	Results
Jin et al., 2018	Children and adolescent students with disabilities N=241 (age: 5-15 years)	Three key concerns were noted in order to address the study questions. a) Days spent engaging in 60 minutes of PA (b) enjoyment with school-based PE programs (such as recess and physical education); (c) general health.	The number of days the PA attended for at least 60 minutes each week provided as a measure for their involvement. Children between the ages of 5 and 11 were asked how much they enjoyed recess, while children between the ages of 12 and 15 were asked how much they enjoyed physical education. A five-point scale from "excellent" to "poor" was used to rate participants' perceptions of their general health and pleasure.	-Psychological Response (Perceived general health, Enjoyment)	The perception of overall health among children with disabilities is correlated with the enjoyment of school-based PA programs, primarily through daily PA involvement. For older children receiving physical education, but not for younger children receiving recess, enjoyment impacted PA and perceived general health.
Morano et al., 2020a	Obese or overweight student N=18 (Age: 11.3±0.4)	Participants followed a 6-month obesity programme that included nutrition counselling and exercise training. The exercise programme consisted of two sessions, two hours per week, and took place in the school gym after school hours.	Weekly 30-minute interactive group sessions were provided to educate children on the importance of PA and fitness. These included reviewing PA diaries, goal setting, self-monitoring and self-empowerment activities, and basic concepts of body functioning and healthy behaviour. Nutrition counselling was provided at the programme's beginning, middle and end. Children were invited to keep an exercise diary outside the programme.	-Anthropometrics -PA Questionnaire -Fitness tests (VJ, MBT, SR, Harre) - Psychological Response (Perceived Physical Ability Scale, Body image)	Body mass index, body fat percentage, arm and waist circumference and skinfold thickness decreased. Actual and perceived physical abilities, body image and PA improved.
Pittman, 2020	Secondary school students N=650 Age: 11-15	Children were assigned to 3 different groups. 1- Activity Tracker group (AT) 2- Text Messaging group (TM) 3- AT + TM	In the AT group, people followed the activities. In the TM group, people were also sent reminders and motivational messages. In the AT+TM group, people practised both. The study took place from September to December 2016.	-Anthropometrics -Fitness Test (FITNESSGRAM TEST) -Psychological Response (SE)	There was no effect of PA on self-efficacy in AT, TM and AT+TM groups. While positive improvements were observed in fitness tests in AT group, no difference was observed in AT+TM and TM groups. In anthropometric measurements in AT, TM and AT+TM groups, negative results were observed.
Physical Education = PE; Active Video Games = AVG; Physical Activity = PA; Moderate-to-vigorous physical activity MVPA; Vigorous Physical Activity = VPA; Light Physical Activity = LPA; Moderate Physical Activity = MPA; Counts Per Minute = CPM; Beck Depression Inventory = BDI; Beck Anxiety Inventory = BAI; Self-efficacy = SE; Warwick Edinburgh Mental Wellbeing Scale = WEMWS; Cardiorespiratory Endurance = CRE; Standing Long Jump = SLJ; Shuttle-Run = SR; Medicine Ball Throw = MBT; Vertical Jump VJ; Self-determined Exercise and Learning For FITness = SELF-FIT; PA Questionnaire = PAQ-C; The Self-Efficacy Questionnaire for Children = SEQ-C					

Table 2. Continue

Reference	Sample	Study design	Protocols	Measurements	Results
Liang et al., 2020	Volunteer primary school students n=80 (Age: 9-12)	Children were assigned to 2 different groups. Intervention Group=29 Control Group=51	The intervention group participated in after-school AVG classes for eight weeks for 1 hour twice a week. Before the games started, a 15-minute warm-up was performed. Children chose their preferred game partner. Children who played AVGs on the television were to play AVGs on the projector in the next lesson. They were told to wear accelerometers only on school days.	-Anthropometrics -Accelerometers (Sedentary time, MVPA, LPA, MPA, VPA, CPM) - Psychological Response (Enjoyment, Social support, SE)	The average amount of time spent in MPA and VPA and the daily time spent in sedentary behavior did not show any discernible changes, although LPA and CPM did. Psychological responses and anthropometric data showed no significant changes.
Ha et al., 2020a	Secondary school students n=667 age:14.4	Students were randomly assigned to 2 groups. Intervention Group=311 Control Group=356	While students in the control group attended their lessons as normal, those in the experimental group participated in the school-based SELF-FIT intervention, which was created to include fitness and game-like components into PE using the concepts of self-determination theory.	-Accelerometers (MVPA, LPA, MPA, VPA) - Psychological Response (Perceived autonomy support, Competence, Autonomy, Relatedness, Autonomous motivation, Controlled motivation, psychological well-being, Intention)	The SELF-FIT intervention effectively improved students' PA outcomes as measured by accelerometry, regardless of students' gender. Compared to students who did not receive SELF-FIT instruction, intervention group students spent less time inactive and more time performing light, moderate, and vigorous exercises. The intervention effects were stronger for girls in terms of meeting participants' competence and autonomy needs, and autonomous motivation. During physical education sessions, boys were more active than females and reported higher need satisfaction and autonomy motivation.
Morano et al., 2020b	Secondary school students N=64 Age:11.3±0.5	Students were randomly assigned to 2 groups. Intervention Group=35 Control Group=29	In addition to physical education lessons, the clinical intervention group engaged in a 7-month after-school program, whereas the control group attended regular curriculum sessions.	-Anthropometrics -PA Questionnaire -Fitness Tests (SLJ, MBT, SR) - Psychological Response (Perceived Physical Ability Scale)	In contrast to their peers in the control group, clinical group members showed improvements in PA levels, perceived physical ability, and physical test performance.
Physical Education = PE; Active Video Games = AVG; Physical Activity = PA; Moderate-to-vigorous physical activity MVPA; Vigorous Physical Activity = VPA; Light Physical Activity = LPA; Moderate Physical Activity = ; MPA; Counts Per Minute = CPM; Beck Depression Inventory = BDI; Beck Anxiety Inventory = BAI; Self-efficacy = SE; Warwick Edinburgh Mental Wellbeing Scale = WEMWS; Cardiorespiratory Endurance = CRE; Standing Long Jump = SLJ; Shuttle-Run = SR; Medicine Ball Throw = MBT; Vertical Jump VJ; Self-determined Exercise and Learning For FITness = SELF-FIT; PA Questionnaire = PAQ-C; The Self-Efficacy Questionnaire for Children = SEQ-C					

Table 2. Continue

Reference	Sample	Study design	Protocols	Measurements	Results
Murphy et al., 2022	Secondary School Adolescent female students N=85 Age:13±0.7	Twenty-four students participated in the study once a week, 22 students participated twice a week, and eighteen students participated three times a week to form the intervention group. Twenty-one students acted as the control group.	The students were offered two activities to play at each lunchtime. Students were free to choose any of them. The intervention consisted of lunchtime games three days a week for 40 minutes. The intervention lasted ten weeks. The control group had their lunch in their classrooms.	-PF (SR, Muscular Strength, Endurance, SLJ, sit and reach) - Psychological Response (BDI, BAI, SE, WEMWS)	There was an increase in depression in the control group, a decrease in those who applied the activity for two days and no difference in those who applied it for 1 or 3 days. While there was an increase in anxiety in the control group and those who applied the activity for two days, there was no difference in those who applied it for 1 or 3 days. For WEMWS and SE, there was no difference in the control group and those who applied the activity for one day, while an increase was seen in those who applied it for 2 or 3 days. PA had little or no effect on the components of PF.
Kwasky & Serowoky, 2018	Secondary School Adolescent female students N=14 Age: 12.21±1.47	All participants were assigned to the intervention group. Measurements were applied as pre-test and post-test.	The intervention was implemented twice a week for eight weeks. Participants completed the SEQ-C test 4 weeks after the completion of the intervention.	-Anthropometrics -Fitness test (flexibility) - Psychological Response (SEQ-C)	Improvements were observed in the social sub-dimension of the SEQ-C Scale. There was a significant decrease in waist circumference in the participants. They also achieved improvement in flexibility.
Sjöwall et al., 2017	Students from 1st to 6th grade N=270 Age:(6-13)	Active school (n = 228) Control school (n = 242) Each school was mandatorily exposed to PA for 120 minutes per week, while the active school was exposed to PA for an additional 180 minutes since the start of the study.	The study was conducted in 2 schools for two years. PA was varied to be fun for the students and consisted of aerobics classes, an obstacle course, boxing, jumping rope, running and various high-intensity games. PA was compulsory. Students in both the active and control school were assessed four times over two years: at the beginning of each autumn and at the end of each spring.	-PF (SR) -Psychological Response (Stress)	PA levels and PF levels improved by almost 50 per cent in the active school, while the control school remained at a constant level. While stress decreased in the control school, stress increased in the active school.
Physical Education = PE; Active Video Games = AVG; Physical Activity = PA; Moderate-to-vigorous physical activity MVPA; Vigorous Physical Activity = VPA; Light Physical Activity = LPA; Moderate Physical Activity = ; MPA; Counts Per Minute = CPM; Beck Depression Inventory = BDI; Beck Anxiety Inventory = BAI; Self-efficacy = SE; Warwick Edinburgh Mental Wellbeing Scale = WEMWS; Cardiorespiratory Endurance = CRE; Standing Long Jump = SLJ; Shuttle-Run = SR; Medicine Ball Throw = MBT; Vertical Jump VJ; Self-determined Exercise and Learning For FITness = SELF-FIT; PA Questionnaire = PAQ-C; The Self-Efficacy Questionnaire for Children = SEQ-C					

Table 2. Continue

Reference	Sample	Study design	Protocols	Measurements	Results
Ha et al., 2020b	Secondary school students N=75 age=14.4 ±0.9	All of the participants participated in the experimental group. Eleven teachers were assigned to the students to implement the intervention.	The focus group and teacher interviews average 25-32 minutes. Specific to SELF-FIT implementation, a typical class includes a series of warm-ups (usually running), stretching, fitness activities, teaching sports-related skills and free play. The content was varied but generally included games such as basketball, volleyball, badminton, gymnastics, etc. Teachers were asked about students' perceptions of the differences between competence, autonomy and relatedness during SELF-FIT sessions and regular PE lessons.	- Psychological Response (Competence, Autonomy, Relatedness)	Unlike typical PE lessons, SELF-FIT practice improves students' competence, autonomy and relatedness skills.
Hatch et al., 2021	Primary school students N=87 Age:10.4±0.7	The study included a familiarisation trial seven days before the first experimental trial. Participants then completed two experimental trials, again separated by seven days. 1-Intervention (Daily Mile) 2-Control (rest) completed.	The children practised a school-based Daily Mile PA involving 15-20 minutes of self-paced exercise. The study utilised focus groups to explore children's perceptions and enjoyment of participation in The Daily Mile. In the focus group, open-ended questions were asked of the children.	- Psychological Response (Enjoyment)	Children enjoyed participating in The Daily Mile.
Physical Education = PE; Active Video Games = AVG; Physical Activity = PA; Moderate-to-vigorous physical activity MVPA; Vigorous Physical Activity = VPA; Light Physical Activity = LPA; Moderate Physical Activity = ; MPA; Counts Per Minute = CPM; Beck Depression Inventory = BDI; Beck Anxiety Inventory = BAI; Self-efficacy = SE; Warwick Edinburgh Mental Wellbeing Scale = WEMWS; Cardiorespiratory Endurance = CRE; Standing Long Jump = SLJ; Shuttle-Run = SR; Medicine Ball Throw = MBT; Vertical Jump VJ; Self-determined Exercise and Learning For FITness = SELF-FIT; PA Questionnaire = PAQ-C; The Self-Efficacy Questionnaire for Children = SEQ-C					

For this reason, the importance of school-based PA interventions to increase overall PF is emphasised in terms of public health (Kriemler et al., 2011). In addition, there are studies suggesting that improved PF may have beneficial effects on cardiovascular disease risk factors in children (Andersen et al., 2011). The results of the present systematic review suggest that, although SBIs vary, PA generally has positive effects on PF. However, in order for PA interventions to be entirely successful, it is seen that the programmes and the target group should be well evaluated and analysed. In addition, systematic review studies have revealed that low PF is associated with psychological parameters such as depressive symptoms, psychological distress, impaired psychological well-being and perceived quality of life (Carson et al., 2016; Hoare et al., 2016; Suchert et al., 2015).

Another essential variable of the systematic review is the relationship between school-based PA practices and psychological responses. All 11 studies examined in this study dealt with the psychological dimension of PA. The studies evaluated included enjoyment (Jin et al., 2018; Liang et al., 2020; Hatch et al., 2020), depression-anxiety-stress (Murphy et al., 2022; Sjöwall et al., 2017), self-efficacy (Pittman et al., 2020; Liang et al., 2020; Murphy et al., 2022; Kwasky & Serowoky, 2018), perceived physical ability and perceived general health (Morano et al., 2020a; Morano et al., 2020b; Jin et al., 2018) and self-determination (Ha et al., 2020a; Ha et al., 2020b). The studies showed that PA positively affected the parameters of enjoyment and perceived physical ability. However, there were inconsistent results with significant differences in depression-anxiety-stress parameters, self-efficacy and self-determination. In this context, it is essential to know that there are many reasons besides PA programmes to combat children's physical inactivity. Studies have investigated which factors affect the PA levels of children and adolescents, and one of the main factors identified was the enjoyment of activity (Burns et al., 2017). One study investigated whether a high-intensity intervention targeting cardiovascular and musculoskeletal health influenced psychological factors related to children's participation in regular PA and whether these factors were associated with the health outcomes of the intervention. Team sports involving high-intensity activities did not negatively affect children's perceptions of enjoyment and adaptation to PA; on the contrary, individual exercises were found to be disadvantageous for the development of enjoyment and adaptation (Elbe et al., 2017). In a study focusing on gender differences and conducted with 667 secondary school students, it was concluded that boys were more active than girls and reported high levels of need satisfaction and autonomous motivation during physical education classes (Ha et al., 2020a). In addition, Póvoas et al. (2018) reported that males reported less enjoyment in mixed games in an application in which both genders played small-sided games in football. These results provide significant evidence that gender should be considered in psychological responses during PA and should be considered when designing SBI programmes.

Regular PA can have many positive effects on children that are not only related to their fitness levels. For example, it positively affects children's well-being and mental health, such as showing higher feelings of self-worth and vitality and reporting fewer depressive symptoms (Brown et al., 2013; Liu et al., 2015). However, the impact of children's PA on mental health outcomes has been examined, and

increased PA levels have significantly reduced depression, anxiety, psychological distress and emotional disturbances in children (Ahn & Fedewa, 2011). Murphy et al. (2022) emphasised that doing PA resulted in significant differences in depression and anxiety levels. Duncan et al. (2018) stated that the movement skills of children with a low perception of competence would be low in parallel. Contrary to these results, there are also studies showing that PA does not affect self-efficacy (Pittman et al., 2020; Liang et al., 2020). Compared to other psychological concepts, the literature on self-efficacy needs to be clarified, and more precise evidence is needed. Research shows that physical education (PE) and school sports provide an appropriate and practical framework for transferring and teaching skills and strategies to reduce health-risk behaviours and increase psychological well-being (Piñeiro-Cossio et al., 2021; Opstoel et al., 2020).

5. CONCLUSION

The results of this systematic review showed that adjusting the physical education curriculum in schools can result in consistent PA and student motivation changes, with positive effects on quality of life and other biomarkers. Children's adequate participation in PA during their developmental process can lead to improved PF for older age and, consequently, to healthy lifestyles. Therefore, schools are appropriate for PA interventions and should help students acquire and develop skills and strategies to achieve high levels of physical and psychological well-being and healthy living activities. Popular play-based methods and different types of subject-specific warm-ups in physical education classes can diversify school-based PA interventions further to improve PF and psychological responses and more positive feedback.

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