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Education Policy Actions by the Ministry of National Education after the Earthquake Disaster on February 6, 2023 in Türkiye

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ABSTRACT

One of the largest earthquake disasters in Turkish history occurred on February 6, 2023. The earthquakes impacted ten provinces greatly, which increased its destructive effect. Immediately following the earthquakes, the Ministry of National Education (MoNE) began providing education services and humanitarian assistance. By utilizing its human resources and production capacity, the MoNE was able to mitigate the effects of the earthquakes. The purpose of this study is to assess the support provided by the MoNE to the continuation of education services after the earthquakes as well as assistance to the citizens affected by the disaster, taking into account the global frameworks. It was observed that MoNE institutions played a major role in providing humanitarian assistance in the earthquake area. MoNE has taken on the majority of the production and distribution of food, shelter, and heating. To ensure that education services are provided as quickly as possible, the MoNE has developed education areas and appointed teachers and psychological counselors. As education services were rapidly launched through tents, containers, and prefabricated schools; preparations were made for the transition to face-to-face education. Students were able to continue their education during the course of their treatment in hospital classes. The transfer for students who wish to study in other cities was facilitated and free boarding facilities were provided. Based on the guidelines for education in emergencies frameworks by INEE and UNESCO-IIEP, it may be concluded that the MoNE effectively implemented the suggested policies for the continuation of education, and utilized its experience in the Covid-19 outbreak in providing social assistance.

Keywords: earthquake, education, Ministry of National Education

6 Şubat 2023 Tarihinde Türkiye'de Yaşanan Deprem Sonrasında Millî Eğitim Bakanlığı Tarafından Atılan Politika Adımlar

ÖZ

Türkiye, 6 Şubat 2023 tarihinde, tarihindeki en büyük deprem felaketlerinden birisiyle karşılaşmıştır. Depremin etkisi 10 ile yayılmış ve bu durum depremin yıkıcı etkisini artırmıştır. Millî Eğitim Bakanlığı (MEB), depremin ilk gününden itibaren eğitim hizmetlerinin başlatılması ve insani yardımların sağlanması için harekete geçmiştir. Bu kapsamda sahip olduğu insan kaynağı ve üretim kapasitesini depremin etkilerini azaltmak için kullanmıştır. Bu çalışmanın amacı, afet sonrası dönemde eğitim yönetimi ölçütlerini dikkate alarak MEB'in 6 Şubat 2023 depremi sonrasında eğitim hizmetlerini sürdürme ve afette etkilenen vatandaşlara sunduğu destekleri değerlendirmektir. Deprem alanında sunulan insani yardımlarda MEB kurumlarının ilk günden itibaren ana üretici konumunda olduğu gözlenmiştir. MEB kurumları deprem alanında yemek, barınma, ısınmaya yönelik üretimlerin ve dağıtımların büyük kısmını üstlenmiştir. MEB, eğitim hizmetlerinin en kısa sürede sunulabilmesi için gerekli alanların oluşturulmasını, öğretmen ve psikolojik danışmanların görevlendirilmesini sağlamıştır. Çadırlar, konteynerler ve prefabrik okullar aracılığıyla eğitim hizmetleri hızla başlatılırken okullarda yüz yüze eğitime geçiş için hazırlıklar yapılmıştır. Hastane sınıfları oluşturularak öğrencilerin tedavi sürecinde eğitimlerine devam etmesi sağlanmıştır. Diğer şehirlerde eğitim almak isteyen öğrenciler için nakil süreci kolaylaştırılmış, bu öğrencilerin parasız yatılı hizmetlerinden ücretsiz yararlanmasını sağlamıştır. INEE ve UNESCO-IIEP tarafından geliştirilen afet sonrası eğitim çerçeveleri dikkate alındığında MEB'in deprem sonrasında eğitim için önerilen adımları atarken sosyal yardımların sağlanmasında da Covid-19 salgınındaki tecrübesini etkin şekilde kullandığı görülmektedir.

Anahtar Sözcükler: deprem, eğitim, Millî Eğitim Bakanlığı

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INTRODUCTION

Disasters, either naturally or man-made, lead to deep scars on society (Arcaya, Raker & Waters, 2020; Bradshaw, 2004; United Nations, 2019). In these terms, disasters have created an enormous risk of destruction for humanity throughout history. Especially natural disasters lead to big risks due to uncertainties about their process and development (The World Bank, 2005; United Nations, 2010). As a matter of fact, the damage of natural disasters is grouped into four as life loss, physical destruction, displacement of people and economic losses (Deryugina, 2022). According to the data of the Center for Research on the Epidemiology of Disasters (CRED), 780.000 people died due to natural disasters between 2000 and 2010, almost 2 billion people were directly or indirectly affected, and at least 960 billion dollars of damage was incurred United Nations, 2010).

The increase in climate change on a global scale leads to an increase in natural disasters (CRED, 2015; Goldstein, 2021). According to Goldstein (2021), humanity encounters natural disasters more frequently than ever before: the number of natural disasters due to climate change has increased approximately 5 times in the last 50 years. According to CRED's (2015) report, while the frequency of disasters due to geographical movements was similar to previous periods, climate-related disasters such as floods and storms increased by 44% compared to the previous period.

Earthquakes have unique characters due to uncertainty about their timing and destructive power (United Nations, 2010). In a short period of 20 years between 1998 and 2017, approximately 750.000 people died due to earthquakes and more than 125 million people were affected in various aspects by earthquakes (WHO, 2022). Earthquakes caused more deaths during this period than all other natural disasters combined. The destruction caused by earthquakes deeply affects social processes as well as human health (Arcaya, Raker & Waters, 2020; D'Amico, 2016). Transport, health, education, agriculture, and other sectors are adversely affected by the disaster (FAO, 2015; Mavrouli et al., 2023; McCullough, 1994). People in earthquake-prone areas are particularly challenged to access services due to the problems encountered in these sectors. For this reason, the consequences that may occur after the earthquake are evaluated in various scenarios and rapid response programs are created (Guerin-Marthe et al., 2021; He, 2021).

For a long time, Türkiye has been referred to a “country of earthquakes” due to its location and geographical structure (Gündüz et al., 2013). Destructive earthquakes have occurred on active fault lines since the period of the Ottoman Empire (Mazlum, 2001; Ürekli, 2010). During the Republican period, many earthquakes occurred, especially in Hakkari in 1930, in Erzincan in 1939, and in Kocaeli in 1999, with a magnitude of over 7 Mw. Unfortunately, on February 6, 2023, Türkiye was struck by one of the most severe earthquakes in recent decades. The earthquakes struck in the Pazarcık District of Kahramanmaraş (7.8 Mw) and then in the Elbistan District of Kahramanmaraş (7.7 Mw) on the same day, and caused extensive destruction in 10 provinces (İTÜ, 2023). These earthquakes constitute one of the biggest disasters not just for their magnitude but also the size of impacted area including 10 provinces.

Education is one of the most effective tools with which countries can deal with the social trauma caused by disasters (Bensalah, 2002; GFDRR & The World Bank, 2019; Le Brocque et al., 2016). Also, education is among the foundational human rights that cannot be interrupted under any circumstances (Convention on the Rights of the Child, 1989; Sinclair, 2007). Thus, countries have the responsibility to continue education and/or restart it as soon as possible if it is interrupted. A major reason for the rapid resumption of education after disasters is the fact that children are one of the most vulnerable groups in society (Le Brocque et al., 2016; Sinclair, 2007). The continuation of education is of vital importance in order to protect children from the psychological negativities. The implementation of mechanisms that will compensate for any learning deficiencies or psychological difficulties that may occur should begin as soon as these conditions are met. After an earthquake, these steps put a great deal of emphasis on education to help society as a whole to repair itself.

The Ministry of National Education (MoNE) of Turkish Republic made a substantial contribution to the continuation of education and the mitigation of the social damage caused by the earthquake on February 6, 2023. As part of its efforts to assist earthquake victims, protect students' well-being, and continue education, the MoNE utilized all its units and production capacity. For this purpose, it used the post-disaster education management frameworks developed by international organizations as a guide (INEE, 2010; UNESCO & IIEP, 2010). This study focuses on the February 6 2023 earthquakes, and aims to evaluate the steps taken by the MoNE through the

analysis. The evaluation took into consideration the criteria for the continuation of educational activities after disasters developed by education stakeholders, especially INEE and UNESCO-IIEP, and the experiences in similar cases.

LITERATURE REVIEW

Earthquakes and Education

Although it contributes greatly to coping with disasters, education is among the sectors that suffer the most during a disaster. The damage to educational institutions caused by disasters, the inability to provide access to schools, and the inability to perform routine school services can all contribute to the difficulty in accessing education. In 2010, approximately 11.000 schools in Pakistan collapsed or were severely damaged by a massive earthquake (Chuang, Pinchoff, & Psaki, 2018). In the earthquakes that took place in Mexico City, the capital of Mexico, in 1985, nearly 25 school buildings collapsed, and 760 school buildings were severely damaged (Gratton et al., 1986). In both earthquakes, problems related to access to education were experienced due to the destruction of schools and transportation roads.

Studies on the impact of earthquakes on education show that there are significant relationships between exposure to disasters and educational outcomes. Bethke (2005) examined the long-term education outcomes of students who had to leave their region due to disasters or conflicts in the past and found that these students' primary education completion and employment rates were significantly lower. Shidiqi, Di Paolo, and Choi (2022) examined the impact of the 2006 earthquake in Indonesia on educational outcomes. The results of the study showed that the students affected by the earthquake had an average of 0.74 years less participation in education compared to their peers, and the primary and secondary school completion rates were 10% to 11% lower than their peers. A detailed analysis of the results revealed that the decrease in education year was related to the damage caused by the earthquake to educational institutions. There has been evidence that the earthquake negatively impacted human capital through education.

Caruso and Miller (2005) examined the relationship between the 7.9 Mw earthquake that took place in Peru in 1970 with educational outcomes. Based on the results, there was a decrease in the participation of children affected by the earthquake in education, which varied by gender. According to the findings, the education period of boys affected by the earthquake is 0.5 years shorter than their peers, and 0.8 years shorter for girls.

Wang, Yang, and Li (2007) examined the effects of the 7.8 Mw earthquake in Tangsan, China in 1976 and showed that access to education declined significantly. The findings indicated that the cohorts affected by the earthquake were between 14% and 21% lower than their peers. Depending on the decrease in the education year, it is predicted that the annual income of these generations will decrease between 3.5% and 4.8%. At the national level, the negative impact of the earthquake on GDP was estimated to be between 0.3% and 0.4%.

Cuaresma (2010) examined the relationship between disaster exposure with education and human capital outputs. According to the study, disaster exposure and participation in education have a strong and negative relationship. This relationship has been demonstrated to be especially strong in the case of geologically based disasters, including earthquakes. In addition, it was emphasized that the relationship in question showed significant differences between countries that experienced disasters.

Paudel and Ryu (2018) examined the relationship between the 6.9 Mw earthquake that took place in Nepal in 1988 with educational outcomes. It has been shown that students in the earthquake-affected regions have lower rates of both education attendance and education completion rates at secondary education levels. In the long run, the earthquake affected the quality of national human resources.

Education was defined as a fundamental human right in line with the International Declaration of Human Rights of 1949, which was also accepted by Türkiye, and the decision to continue education in cases of violence and disaster at the World Economic Forum in 2000 (GFDRR & The World Bank, 2019; Sinclair, 2007). As a result of the role that education plays in disaster management, education is given equal importance to other human needs such as nutrition and shelter. The multiple benefits of education in case of a disaster are listed as follows (Sinclair, 2007):

A. *Accelerating normalization in society:* Education activities have a wide network reaching all segments and stakeholders of society. Considering students, teachers, parents, school administrators and all individuals serving the education sector, the size of the group that education corresponds to in society can be easily understood. In order to reduce the negative effects of a disaster, the perception of "normalization" is essential. The rapid

resumption of educational activities contributes substantially to the normalization of a large part of society by creating a sense of "daily routine".

B. *Creating a safe space for students to leave their traumatic experiences behind:* After the disaster, the "school" provides an environment that brings students together with their peers and teachers. In a safe environment, students who have endured many traumatic events receive attention from both their peers and teachers, and a sense of togetherness is nurtured. The school becomes both a psychologically and physiologically safe environment for children, whether it is in the form of a tent or a container.

C. *Maintaining the impact of investments in education and increasing the quality of human resources:* Investments in education and human resource development today constitute a significant part of public and private investments. The physical destruction and psychological problems caused by the disaster greatly reduced the impact of these investments. Continuing education services or starting them as soon as possible accelerates the process of normalization and offers students an excellent opportunity to keep learning gaps to a minimum and to compensate for them. Otherwise, learning gaps may become chronic, and the cost of compensating for these losses increases.

D. *Ensuring the protection, registration and proper orientation of children:* After the disaster, children become one of the most vulnerable groups in society. In this period, one of the biggest priorities is to reach children as soon as possible, ensure their registration, and secure their safety. Children's access to education contributes to the solution of issues such as child abuse, the loss of children, and the inability to access education, which are common during natural disasters. In this context, education is the most effective means of reaching students, getting them to school, the safe area, providing psychosocial support, and ensuring that they have access to education.

E. *Protecting marginalized groups:* Even though all children are vulnerable after a disaster, children with disabilities, students from disadvantaged socioeconomic backgrounds, immigrants, and students who are out of school are more likely to face a greater challenge. During disaster periods, these students' disadvantages become even worse. The provision of educational services to all children throughout this period can play an important role in minimizing the effects of these disadvantages. In other words, an "equalizing" educational environment is of vital importance for disadvantaged students, particularly following a disaster.

Standards and Recommendations of International Organizations in Post-Disaster Education Management

As explained in detail in the previous section, disasters lead to significant declines in educational outcomes, particularly access to education and academic performance. It also reduces the quality of human resources at the national level and limits the effects of investments in this field to a large extent. As a fundamental right, education provides the psychological and physiological well-being of children while minimizing these negative effects as well. International organizations, especially INEE and UNESCO-IEEP, have determined the minimum standards of education services after disasters and have made recommendations to reach these standards (INEE, 2010; UNESCO & IEEP, 2010). Table 1 shows the evaluation framework established by INEE and UNESCO and IEEP for the implementation of post-disaster education services (INEE, 2010; UNESCO & IEEP, 2010).

Table 1. Reference Frameworks for Education in Emergencies

INEE	Foundational standards
	Access and learning environment
	Teaching and learning
	Teachers and other educational personnel
	Education policy
UNESCO-IIEP	General standards and overview
	Access and inclusion
	Teachers and learners
	Curriculum and learning
	Management capacity

In Table 1, both frameworks referring to post-disaster education systems contain similar elements. There is a priority to ensure that education services could be continued uninterrupted and, if interrupted, re-started as

quickly as possible. In order to ensure that children have access to education and to determine their basic needs within the framework of INEE, all stakeholders are urged to participate in the process. In addition, the coordination of education stakeholders with other stakeholders in the field of disaster in the transition to education and the responsibility of maintaining coordination in the transition to education activities are assumed by educational institutions. As part of the UNESCO and IIEP framework, UNESCO and IIEP emphasized the importance of capacity building for education and the involvement of education stakeholders.

Another factor emphasized in both frameworks is the sending of experienced teachers who have adequate training in disaster management to the area of disaster. Immediately, school psychological counselors and guidance teachers should be sent to the region in order to provide psychosocial support to students. It is recommended that teachers continue their educational activities in cooperation with psychological counselors. During this process, students are put at the center of the process and distanced from traumatic events through the use of games and cooperative activities. There is also a particular emphasis on literacy and basic skills in the frameworks. As part of the applied training program, we should emphasize common values and behavioral skills.

Another area that is more emphasized in the framework presented by INEE is the adoption of a data-driven approach to identify training and human resource needs. In disaster situations, quick decisions must be taken, and continuous and accurate data is crucial in order for these decisions to be accurate. Consequently, the importance of collecting data directly from the field after a disaster was stressed. To achieve this goal, it would be beneficial to establish a data system where students, educators, and other stakeholders in the field of education can continuously track the needs of the students.

The last element emphasized in both frameworks is the support of post-disaster education management with permanent education policies. All the steps described so far should be implemented as soon as possible in order to make education systems more resilient to disasters. A number of important issues were addressed as part of the adoption of these disaster plans as an educational policy, including the construction of schools in accordance with all kinds of disasters, the creation of scenarios concerning possible disaster situations, the development of a data transmission system, integrating disaster education into the curriculum, and the transition to informal and distance education when necessary.

Contributions of the Ministry of National Education after the February 6, 2023 Kahramanmaraş Earthquakes

Following the two earthquakes that occurred in Kahramanmaraş on February 6, 2023, the MoNE took immediate action to provide support for the earthquake victims and to begin education services as soon as possible. In response to the earthquake, the MoNE established a crisis desk and partnered with the province's organization. In a short period of time, MoNE institutions have been the main providers of humanitarian aid, especially vocational education schools. As early as the first day, the necessary evaluations and preparations have been made to ensure a rapid start to education services. Through its social and humanitarian contributions, the MoNE has gone beyond education services to have a large impact on disaster management. Therefore, the contributions of the MoNE after the earthquake were categorized into four categories.

1. Contributions to Search and Rescue Operations and Providing Humanitarian Aid

Following the earthquakes, the MoNE began evaluating the conditions of students in 10 provinces. In search and rescue operations, 4,526 members of the Search and Rescue Unit (AKUB) affiliated with the MoNE participated. Furthermore, AKUB assisted in setting up tents, transporting and setting up aid materials, as well as distributing food. As part of this process, AKUB experts were divided into 225 separate teams in 10 provinces, and the activities of these teams were monitored live by officials of the MoNE.

A rapid assessment of the damage to institutions affiliated with the MoNE in the region has begun. Only 24 of 20,868 buildings of the MoNE collapsed, while 83 buildings had heavy damage. A series of schools, hostels, teachers' houses, evening art schools, practice hotels, and regional boarding schools were opened to earthquake survivors after risk evaluation. Shelter needs of earthquake victims have been met by these buildings. The number of people sheltering in the MoNE institutions, over 450.000, decreased to almost 84.000 by the fourth week of the earthquakes due to migration to other provinces and return to solid housing.

A preliminary damage assessment study conducted by the MoNE classified the 10 provinces affected by the earthquake into three groups based on the extent of damage to both educational institutions and the province. The starting date of education was postponed to March 27 in Hatay, Kahramanmaraş, Adıyaman and Malatya, where the impact of the earthquakes were felt most intensely, to March 13 in Adana, Osmaniye and Gaziantep,

and to 1 March in Diyarbakır, Şanlıurfa and Kilis, which were the least affected. The schools' needs and the general conditions in the provinces were considered during these postponements, and the shortest possible time was allowed for the transition to schooling. On March 1, education services began successfully in Diyarbakr, Şanlurfa, and Kilis as a result of this approach. It is the responsibility of the MoNE to conduct all needs assessments and situation assessments at the school level to ensure the implementation of face-to-face education in schools as soon as possible, similar to the approach taken during the Covid-19 epidemic (Özer, 2020a, 2020b, 2020c, 2020d; Özer & Suna, 2020; Özer et al., 2022a).

MoNE officially began using the vocational education institutions that it has transformed in recent years (Özer, 2019a, 2019b, 2020b, 2022a, 2023). Bread, hot food and packaged food production started rapidly in vocational education institutions and were delivered to 10 provinces. Additionally, 97 mobile kitchens and 7 mobile ovens have been established in earthquake-affected areas. Within a few days of the earthquakes, the MoNE institutions started to prepare more than 1.9 million hot meals, approximately 1.8 million loaves of breads and nearly 200.000 food packages a day. As seen in Figure 1b, the MoNE institutions produced and distributed more than 32.2 million loaves of bread, more than 22.4 million portions of hot meals, and more than 2.7 million packaged foods in a month as of March 3, 2023. In addition, as seen in Figure 1a, the MoNE has established "food service points" in 10 provinces to facilitate access to the food produced, and has begun to use these educational institutions as centers for both food production and distribution.

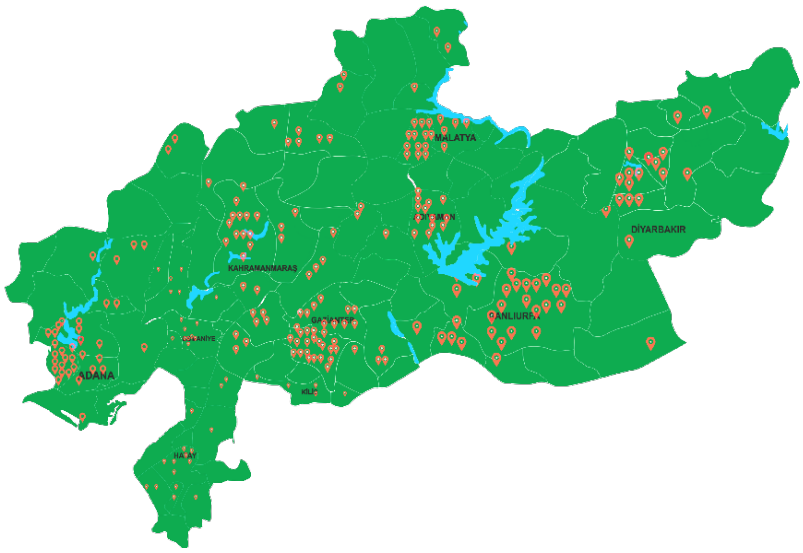


Figure 1a. *Food service points of the Ministry of National Education*

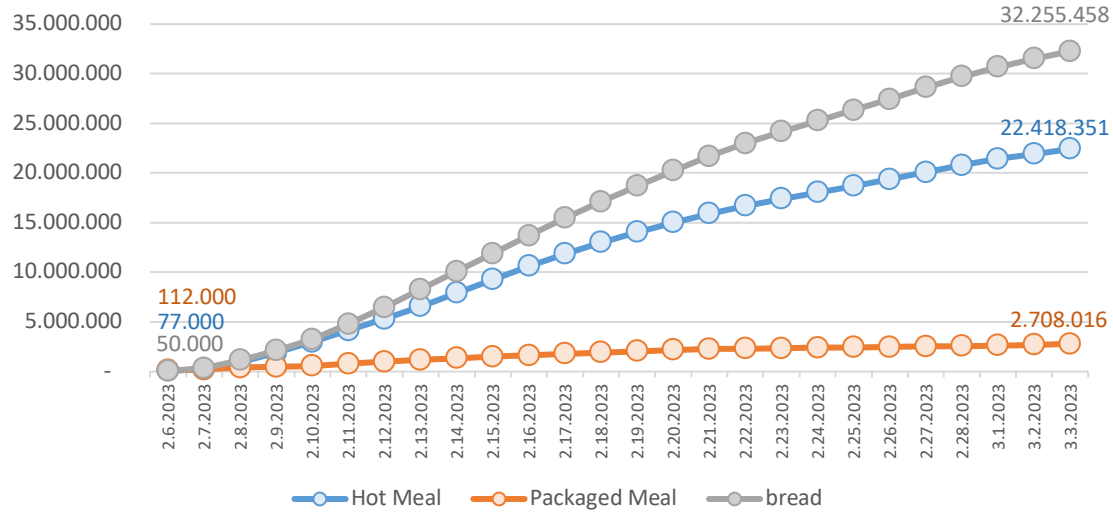


Figure 1b. *The amount of food produced by the institutions of the Ministry of National Education**

*Cumulative number of food and meals which were produced by the MoNE institutions

Vocational education institutions have rapidly increased their production to support the sheltering needs of the earthquake victims. As seen in Figure 2, approximately 30.000 stoves, 115.000 blankets, 83.000 sleeping bags, and nearly 1.000 tents were produced and distributed during the first week following the earthquakes. In addition, after conducting R&D studies in vocational training, tent and container production was initiated within a short period of time. More than 280 containers and nearly 1,000 tents have been produced to date. More than 1,700 portable heaters produced by students and teachers who continue their education in Science and Art Centers (BİLSEM) were sent to the earthquake victims in 10 provinces.

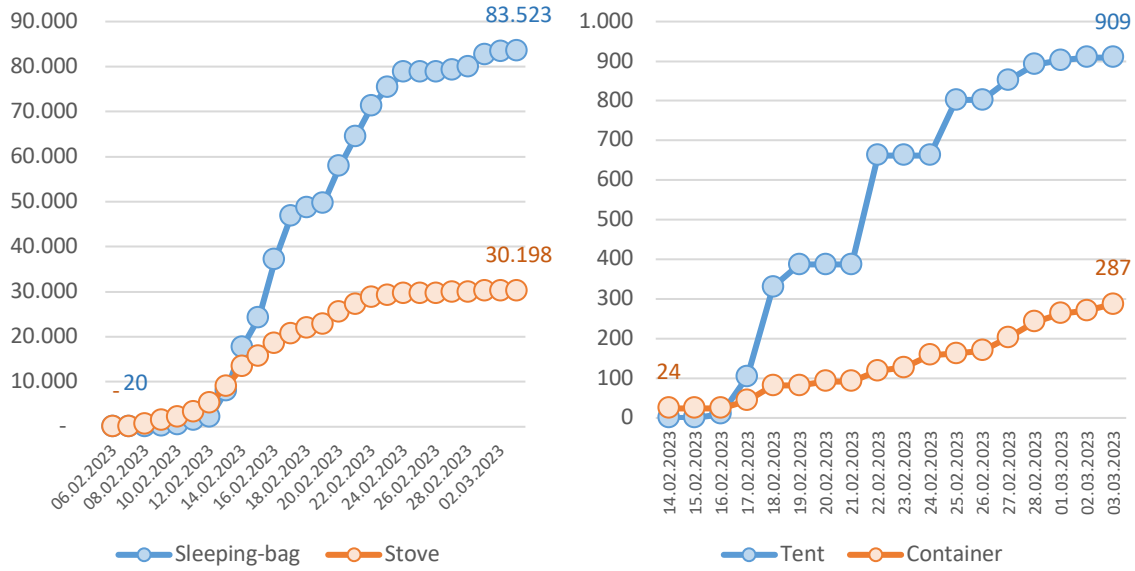


Figure 2. *The sheltering goods produced by the institutions of the Ministry of National Education**

*Cumulative sheltering products which were produced by the MoNE institutions

1. Steps for Continuing Education

To ensure that earthquake victims return to school as soon as possible, the MoNE began conducting damage assessment studies on day one. In this context, the current state of schools and buildings of the MoNE was examined in 10 provinces. After examining the buildings affiliated with the MoNE in 10 provinces, it was determined that only 24 buildings were destroyed, and 83 buildings were severely damaged. Infrastructure support has been provided in order to make the undamaged buildings earthquake-resistant and ready for education as soon as possible. The second semester has begun in 71 provinces involving around 15 million students on February 20, 2023.

To provide education services to students in the living spaces created since the first day of the earthquakes, the MoNE has begun setting up "education, support and play tents" in 10 provinces with a high earthquakes impact. Almost 20.000 teachers and 4.000 psychological counselors have volunteered to provide education in the affected provinces. In the event that the schools were not available, the MoNE would assume the extra course payments of these teachers. These tents offered students psychosocial support and attempt to reestablish a "school routine" by supporting their basic skills. The establishment of 416 "psychosocial support tents" was completed by the third week following the earthquakes. These tents are staffed by psychologists and guidance teachers who work in institutions affiliated with the MoNE. As of March 3, the MoNE has provided education in 1.476 tents and containers, and 350 new container schools were preparing to be established soon. Students and their families have been provided with continuous services, particularly in the event of psychological problems such as post-traumatic stress disorder that can arise after a disaster. Further, the MoNE has taken responsibility for the transition of students to prefabricated schools, classrooms, and tents for education. As can be seen in Figure 3, more than 324,000 individual interviews, more than 293.000 group interviews, and nearly 180.000 parent interviews were conducted within the scope of psychosocial support in approximately three weeks.

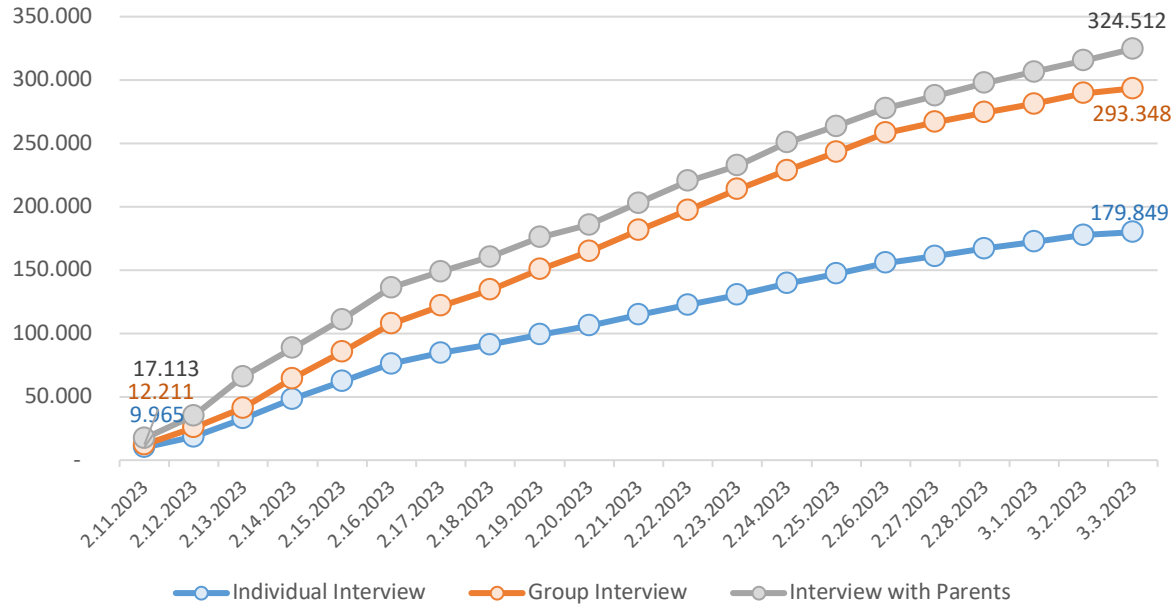


Figure 3. *Number of Interviews by Experts within the Scope of Psychosocial Support*

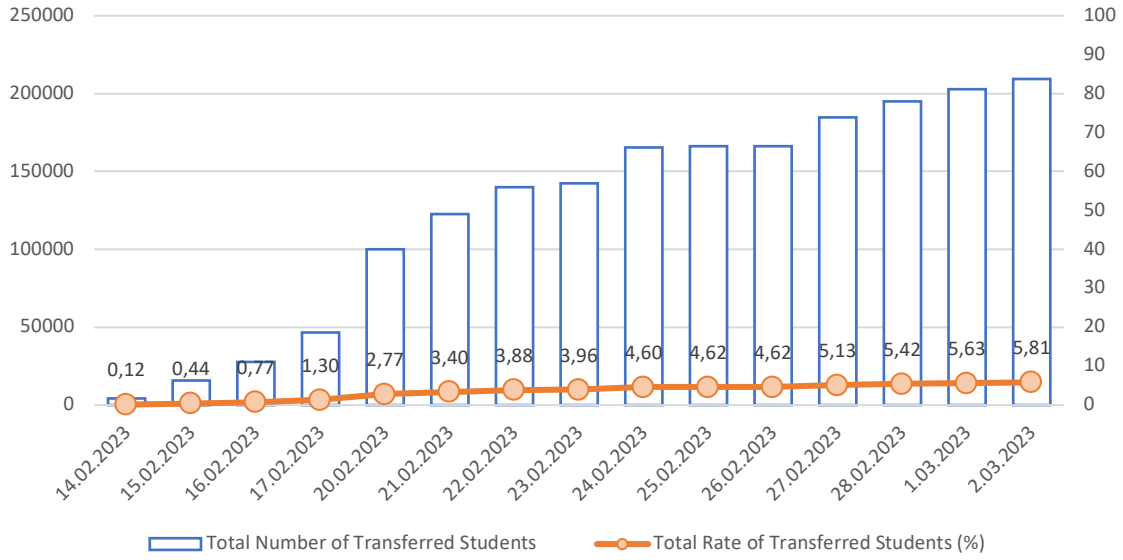
*Cumulative number of interviews which were conducted by the school counselors and experts.

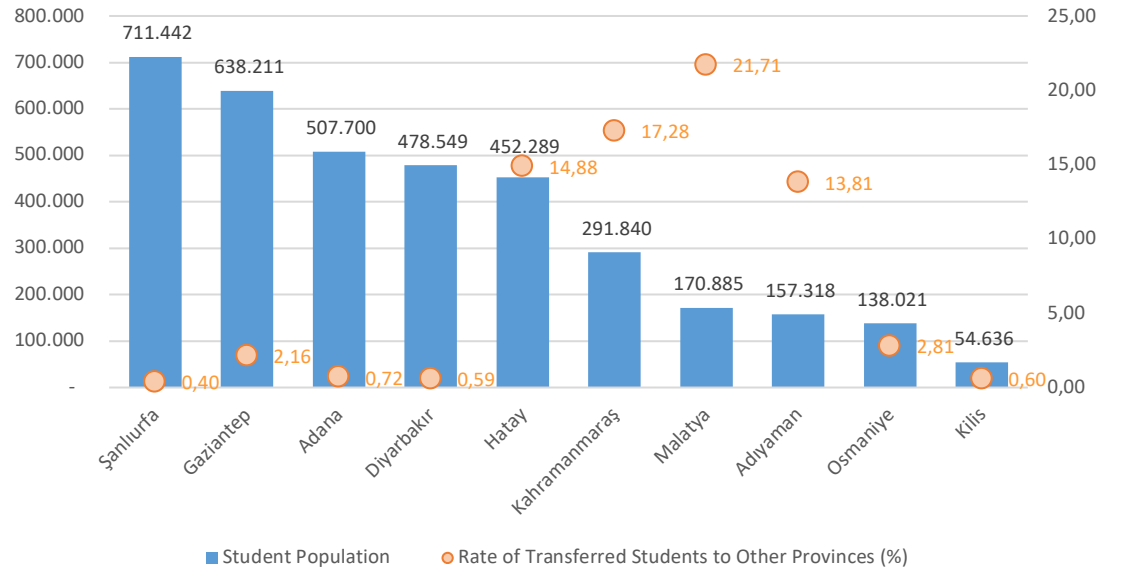
Educational activities were started immediately in the living spaces created, especially in tent cities. As of the third week of the earthquakes, 236 pre-school education tents were set up, primary school education in 111 tents and secondary school education in 108 tents have been provided. After a short period of three weeks, two prefabricated schools were established and education began at different levels. Secondary school students continued to receive education in training tents and prefabricated schools. In this process, academic support programs were implemented at 510 points for students preparing for the high-stakes assessments. Training has been provided at these points as part of the Support and Training Courses (DYK) that have been implemented by the MoNE. In addition, the MoNE announced that these assessments would cover the content of the first semester only (before the earthquakes). Therefore, the high-stake assessments were revised to eliminate the possible inequalities between students.

Another significant step taken by the MoNE is the access to education of students who are treated in hospitals due to their health problems. There has been a rapid expansion of "hospital classes" in earthquake zones, which the MoNE has greatly increased in recent years. As of the third week following the earthquakes, 93 hospital classrooms had already been established. By setting up classes in hospitals, students are able to attend training sessions while undergoing treatment. At least two classroom teachers are assigned to all hospital classrooms in order to ensure continuity of education.

The MoNE has made arrangements to facilitate the transition of students who wish to continue their education in different provinces. Survivors of earthquakes in this context were accorded the right to continue their education in other provinces without being subject to school-to-school transfer criteria. A significant benefit that will be provided to students who wish to study in other provinces is that the rate of students receiving full scholarships in private educational institutions will increase. The MoNE has decided to increase the minimum rate of students receiving full scholarship education in private education institutions from 3% to 10% in the days immediately following the earthquake, following meetings with the administrators of private education institutions. The increase in the scholarship rate would only be allocated to survivors of the earthquakes. Consequently, more than 32.000 earthquake victims had the opportunity to receive education in private educational institutions free of charge until March 3, 2023. Additionally, these students were provided to benefit from student residences in other provinces free of charge. These opportunities, provided by the MoNE to students who wish to study in different provinces, have been increasingly utilized by students and their families. Figure 4 illustrates the growth in the number of students being transferred to study in different provinces over time. According to Figure 4, the number of students who continued their education in different provinces increased rapidly from 48.000 to

more than 202.000 in just three weeks. In the provinces, earthquake transfer commissions attempted to ensure that the most appropriate transition opportunities were provided by taking into account the needs of the students and the school quotas. The rate of students transferred to other provinces remained limited (less than 6 percent), thanks to the excellent efforts of the MoNE to move schools towards face-to-face education.





2. Steps to Improve Quality in Education

Through the establishment of training tents, psychosocial support tents, and prefabricated schools, the MoNE provided access to education. Therefore, the next focus was to enhance the quality of education opportunities offered. It was first of all important to deliver textbooks, notebooks, and educational supplies to all earthquake victims as soon as possible. Approximately 7.5 million textbooks, 5.5 million supplementary resources, and nearly 130.000 stationery sets have been delivered to earthquake victims as of the second week following the earthquake. All earthquake victims were provided with clothing and stationery sets as well.

While the deficiencies of the students were eliminated, the infrastructure of the training tents and prefabricated schools was strengthened. 5.500 televisions were installed in the containers so that students could

take advantage of distance education opportunities while maintaining face-to-face contact with their teachers. Students can access the contents of the Education Information Network (EBA) through televisions. Volunteer teachers, particularly psychological counselors and guidance teachers, were also directed to the region from the outset to provide training. As soon as the psychological counselors and guidance teachers have provided psychosocial support to the students, the main focus of education was on developing basic skills.

3. Data-Driven and Accountable Management of the Process

Immediately following the disaster, the MoNE reached out to the field with its managers to assess the situation. In the wake of the earthquakes, a crisis desk was established at the Ministry's headquarters, and an evaluation process was initiated based on information conveyed by managers. Teachers and administrators who are constantly on the ground have provided information to the crisis desk regarding humanitarian and educational needs in the earthquake area. The data is used to develop policies aimed at making the MoNE institutions suitable for sheltering people, producing food and shelter materials, developing education areas, fixing and meeting stationery and infrastructure needs, as well as providing shelter and educational opportunities for earthquake-affected families in provinces outside the earthquake zone.

To ensure transparency, the MoNE shares the data collected from the field with the public through a variety of channels in order to formulate policy. Daily contributions are posted on the MoNE's official website, social media accounts, and the provincial organization's accounts. Through digital channels, the public is continuously updated with the latest statistics and information on the number of students transferred, humanitarian aid and educational materials produced, the establishment of training tents and prefabricated schools, and the provision of psychosocial and educational services. This series of posts help other stakeholders cope with the disaster, and also increases accountability by explaining the reasons for the policies of the MoNE.

DISCUSSION AND CONCLUSION

One of the largest earthquakes in Turkish history took place on February 6, 2023, causing extensive destruction in 10 provinces. Several humanitarian services, including education, were difficult to provide due to the size of the spread area created by the earthquakes. Following the earthquake, all units of the MoNE worked together in order to compensate for the negative effects of the disaster and to continue education, a fundamental human right. Education services have been prioritized along with all humanitarian needs within the MoNE as soon as possible under the approach ‘Continue Education in All Conditions”.

To enhance the return to education as soon as possible, all flexible education models have been implemented in accordance with the recommendations of INEE and UNESCO. During the first week, training activities were conducted in tents, but within a short period of time containers and prefabricated schools were also used. Education was designed to provide psychosocial support, remind children of their school routine, and then reinforce their basic skills in the post-disaster period. Approximately 20.000 volunteer teachers, 4.000 psychological counselors, and guidance teachers offered psychosocial support. Students who wish to continue their education in a different city have been provided with the right of free transfer, and approximately 5% of the students in the region have taken advantage of this opportunity. It is important to note that 93 hospital classrooms have been established to provide access to education to students with illnesses or disabilities, thus ensuring all students' access to education. In the region, nearly 20,000 teachers met with students and their families to ensure that each child received the best education possible. Special education tents have been set up and equipped with the necessary equipment for students requiring special education. There are 93 hospital classrooms available for students who are receiving medical treatment in the hospital. Consequently, all facilities are provided to ensure the inclusion emphasized by INEE and UNESCO as well as IIEP and to ensure that all students receive education in accordance with their needs.

To minimize the negative impacts experienced by earthquake survivors and their families, the educational process began with psychosocial support. As specified in the INEE and UNESCI-IIEP frameworks, educational materials were reprinted and provided to the students, in addition to clothing and stationery aids. The educational process prioritized psychosocial support and basic skills and student-based processes were followed. It was announced in the fourth week following the disaster that the MoNE would offer scholarships to students who lost

their families or guardians. Education materials and financial assistance were provided as well as access to education for earthquake survivors.

Following a two-week break, the MoNE began the education in 71 other provinces, excluding earthquake-affected provinces, and categorized 10 provinces into three groups based on the extent of damage. It has prepared for the transition to face-to-face education in schools by maintaining the examinations at the district and institution levels. The transfer requirements for students who wish to study in different provinces during this period have been suspended as recommended in post-disaster education management frameworks. Through the provision of free education from private institutions, educational opportunities have been enhanced for these students. In a short period of time, education was resumed and flexible models were used to reach all students, reducing the number of students transferring to other provinces for instruction. In earthquake-prone areas, MoNE intensifies its preparations to ensure normalization and to make schools ready for use. Education options in other provinces have been expanded to minimize the difficulties that students displaced due to disaster may experience.

Türkiye's vocational high schools rushed to assist in these difficult times, and produced the essential products. The MoNE had undertaken the greatest responsibility in meeting the urgent food needs in 10 provinces by providing an average of 1.9 million hot meals per day, nearly 200.000 food packages, and approximately 1.8 million loaves of bread per day. Furthermore, MoNE institutions produced a wide range of urgently needed products, including sleeping bags, tents, stoves, blankets, and even containers. Thus, MoNE institutions have once again demonstrated their ability to produce products which are urgently required by society, as was the case during the Covid-19 pandemic. As a result, the contributions of the MoNE have expanded far beyond education and have become a key provider of humanitarian assistance.

As part of its efforts in recent years, the MoNE has taken a number of substantial steps that contributed greatly to the production of humanitarian aid and the resumption of education following the earthquake in February 6, 2023. Schools' physical infrastructure has been improved, the strengthening and reconstruction processes have been prioritized, and participation in the OECD project "Protecting students and students from earthquakes" conducted for the first time in 2014 with a self-assessment questionnaire (OECD, 2017) has made significant contributions to disaster preparedness as part of large-scale projects. Similarly, the dissemination of first aid training throughout Türkiye in large-scale studies, particularly in the "1,000 Schools in Vocational Education" and "10,000 Schools in Primary Education" projects, which have been prioritized in recent years, has also increased emergency awareness and response (Özer, 2021b, 2022b). Consequently, the MoNE's significant involvement in managing the consequences of the earthquakes in many dimensions is closely related to the policies and improvements implemented over the past few years.

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Selection and Reading of Picture Storybook for Young Children: A Scale Development Study

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ABSTRACT

The study aims to develop the Picture Storybook Selection Criteria Scale and the Picture Storybook Reading Behavior Scale for Children. The scales' initial forms were administered to 306 parents with 48-72-month-old children. Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were conducted to ensure these three-point-Likert-type scales' structure validity. The EFA results suggest that the Picture Storybook Selection Criteria Scale consists of 17 items and three factors. The Cronbach Alpha coefficient for this first scale as a whole is 0.775. As a result of CFA, the construct of the model was confirmed. The EFA results suggest that the Picture Storybook Reading Behavior Scale consists of nine items with one factor. The Cronbach Alpha coefficient of the second scale is 0.787. CFA results show that the model's one-factor construct was confirmed. As a result, it was determined that both scales were suitable for their purpose, valid and reliable. This study provides opportunities to increase parents' confidence in choosing and reading picture storybooks for their children and to help educators support parents and families.

Keywords: Picture storybook; reading for children; parent; early childhood; validity-reliability, scale

Küçük Çocuklar İçin Resimli Hikaye Kitaplarının Seçimi ve Okunması: Bir Ölçek Geliştirme Çalışması

ÖZ

Bu çalışma, Resimli Hikâye Kitabı Seçme Kriteri Ölçeğinin ve Çocuğa Resimli Hikâye Kitabı Okuma Davranışı Ölçeğinin geliştirilmesini amaçlamaktadır. Üçlü Likert tipteki bu ölçeklerin yapı geçerliğini sağlamak için sırasıyla Açımlayıcı Faktör Analizi (AFA) ve Doğrulayıcı Faktör Analizi (DFA) gerçekleştirilmiştir. AFA sonuçları Resimli Hikâye Kitabı Seçme Kriteri Ölçeğinin 17 madde ve 3 boyuttan oluştuğunu göstermektedir. Bu ilk ölçeğin tamamı için Cronbach Alfa katsayısı 0.775'dir. DFA sonucunda ise modelin yapısı doğrulanmıştır. AFA sonuçları Çocuğa Resimli Hikâye Kitabı Okuma Davranışı Ölçeğinin 9 maddeden ve tek boyuttan oluştuğunu göstermektedir. Bu ikinci ölçeğin Cronbach Alfa katsayısı 0.787'dir. DFA sonuçları modelin tek boyutlu yapısının doğrulandığını göstermektedir. Sonuç olarak her iki ölçeğin de amacına uygun, geçerli ve güvenilir olduğu belirlenmiştir. Bu çalışma, ebeveynlerin çocukları için resimli hikâye kitapları seçme ve bu kitapları okuma konusundaki güvenini arttırma ve eğitimcilerin ebeveynleri ve aileleri desteklemelerine yardımcı olma fırsatları sunmaktadır.

Anahtar kelimeler: Resimli hikâye kitabı, çocuklara kitap okuma, ebeveyn, erken çocukluk, geçerlik-güvenirlik, ölçek

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INTRODUCTION

Language development is a critical part of early childhood. Children learn their mother tongue and learn the grammar, communication requirements, and language units naturally and improvised (Yapıcı, 2004). Language development occurs at a very rapid pace from birth to the first years. Environmental and genetic factors are essential (Er, 2020). For Kostelnik et al. (2014), the quality of language development during this period largely depends on the early experience of oral language capacity. In other words, language is built through unstructured interactions with others. Therefore, adults should continuously encourage children's receptive and expressive language and vocabulary knowledge.

Language learning is based on five pillars: listening, speaking, visual, reading, and writing. Listening refers to paying attention to communication. Speaking means individual self-expression to develop a sufficient vocabulary and language structure. Writing is an act of understanding the alphabet system to communicate. Visual skill refers to paying attention to visual communication, as in listening. Reading necessitates using grammatical and prior knowledge sources to make sense of the text. Lastly, writing is an act of understanding the alphabet system to communicate (Kostelnik et al., 2014). The individuals around them develop these skills. Such interactive processes as playing games, talking and singing to them, or reading books develop language skills (American Academy of Pediatrics, 2008; Er, 2020).

Picture Storybook

"Literature for young children is typically published in a picture book format" (Sawyer, 2012, p. 77). According to Uzmen (2001), the picture book combines visual and textual elements with or without a story, primarily aimed at preschool children. If more emphasis is placed on the story, it is called a picture storybook. Picture storybooks have essential contributions to children's learning and perception. In addition, these books deal with the book's subject with pictures so that children can grasp the subject better (Özen, 2020). High-quality picture storybooks combining text and illustration play a significant role in social and cognitive development (Hladikova, 2014); children learn about the world and life, acquire the first literary and aesthetic values, and make the child's development reading habits (Tuncer, 2000). For picture storybooks to qualify as high-quality, they must have many features in design and content.

Design features include size, format, paper, printing, page layout, image, cover, and binding. These features are as follows (Göknil, 2000; Hladikova, 2014; Lynch-Brown et al., 2014; The Republic of Türkiye Ministry of National Education [MoNE], 2013; Oğuzkan, 2013; Oral, 2000; Sever, 2008; Tuncer 2000; Ural, 2013):

- Books should be of mini book size that the child can hold with his hand or of large sizes called lap length,
- Books can be in different formats such as vertical, horizontal, rectangle, square, cat, phone, etc.,
- The paper should be matte, high-grade paper pulp that does not break easily or wear out,
- Minimal and straightforward sans serif and 20-24 points fonts should be used. It should also be noted that the font size will look different depending on the font format. In addition, there should be no letter and punctuation errors,
- The images should be at mostly full width,
- Images should be animated, and the details of the image should represent information and concepts,
- The cover must be made of durable, thick bristol cardboard, covered with lacquer or cellophane for more prolonged use. The cover picture and the title should predict the content of the book,
- The bookbinding process should be perfect as the child will touch the book countless times and turn its pages. The preferable binding technique is thread-sewn binding,

Content features are a theme, subject, characters, language, and narrative. These features include (MoNE, 2013; Morrow, 2007; Oğuzkan, 2013; Sawyer, 2012; Sever, 2008; Tuncer, 2000; Ural, 2013):

- The book should have a theme. The theme is the emotion and thought that recurs in or permeates a book. It should be clear and straightforward,
- The book content should involve real-life topics and suggest action and rapid movement,
- There should be a small number of characters in the book. These can be people, animals, or objects,

- The book should improve the child's language abilities. Language developments -especially vocabulary knowledge- should be compared with norms. In addition, short and simple sentences containing a single subject and predicate should be used. Slang should not be included in the narrative.

Reading Books to Child

Reading can be defined as a process that includes perceiving, comprehending, making sense, and interpreting written messages through the sensory organs (Odabaş et al., 2008). On the other hand, the reading habit is that the individual perceives reading as necessary after learning to read and performs the book regularly and continuously (Tanju, 2010). "Reading to learn is an essential tool for life-long learning. It is one of the powerful and lasting influences in promoting personal development and social progress" (Thanuskodi, 2011, p. 79-80).

Reading habit is a critical process that should be developed early. If people around them support and model this habit, children will probably engage in this behavior and develop the reading habit. The American Academy of Pediatrics (2008) asserts that children introduced to reading at an early age tend to read earlier than children who are not exposed to books at earlier ages. Machado (2010) notes that cultivating a love of reading in preschool helps ensure a child's reading habit and success.

Curiosity is the first impulse that leads young children to books. Parents are the first adults who actively support this feeling and thus contribute to the child's reading habit (Duffy, 1967). According to Cheng (2019), one of the parents' essential responsibilities is to make babies and young children gain the habit of reading by maximizing their knowledge, cognitive skills, and imagination. Parents' role in developing reading habits early.

According to Vygotsky (1978), social interaction and language during this interaction are essential in developing the child's cognitive development. Debaryshe (1993) stated that reading activities shared between parents and preschool-aged children facilitate language learning. Because parents use more sophisticated language when reading stories to their children than during free play (Debaryshe, 1993; Fletcher & Reese, 2005). According to the result of research (Logan et al., 2019), parents who read 1 picture book with their children daily provide their children with exposure to an estimated 78,000 words each year. On the other hand, Fletcher and Reese (2005) emphasized that picture book reading may notably support parental efforts to guide their children's attention and participation.

Shared book reading in early childhood develops child's school readiness skills and plays a unique role in the child's vocabulary learning (Burgess et al., 2002; Patel et al., 2020; Robertson & Reese 2015). The empirical literature provides enough evidence to support this claim. For example, Işıtan et al. (2020) conducted research with children in preschool age. The results showed that children's writing awareness skills increased even when mothers read only regularly qualified children's books to their children. O'fallon et al. (2020) carried out a study with children aged 35-37 months. The research found that reading picture storybooks to children can be used as a way to encourage vocabulary learning. Santi's (2020) study showed that the proper use of picture storybooks will improve children's (4-5-year-old) visual intelligence. Lastly, Kostelnik et al. (2014) assert that language modelling is a fabulous tool for children to use language. Reading and sharing stories appropriate to the child's age, interest and culture, sharing at least one book or story daily, and talking and listening to children help children development in many ways. However, according to McGee and Schickedanz (2007), reading books alone is insufficient to support children's development. How books are shared with children is also essential. Thus, there are a number of issues that parents should pay attention to when reading picture storybooks to young children (Alkan Ersoy & Bayraktar 2017; Lynch-Brown et al., 2014; Machado, 2010; Reach Out and Read, n.d.):

- Parents should read with children daily, even for just a few minutes,
- Parents should talk to their child about the pictures in the book,
- The child should be allowed to swipe the book in an attempt to turn the pages,
- The child should be shown the cover page of the book and informed about the content,
- Fingers should have hovered over the words,
- Making silly sounds, especially animal sounds, are essential. So that the sound should be used as a stimulus,
- Books related to events in the child's life (going to school, moving to a new home, etc.) should be selected,
- The story in the book should be animated. And also, character voices for the story should be created,

- Questions should be asked about the story, and he/she should be allowed to ask about the story,
- While reading, the child should be allowed to sit next to her or on the parent's lap.

Current Study

Picture storybooks are indispensable materials for preschool children. These books' quality is essential because parents know what to look for when choosing a book for their children. Thus, children can be brought together with suitable and quality books. Books for children are as important as reading the selected books or telling the story. Pekdoğan (2017) found that when purchasing, parents mostly paid attention to the book's educational, entertaining and creative features, such as age-appropriate content, color, and font size. Besides this, reading and storytelling with children are also essential. In addition to selecting books, parents' reading behaviors' appropriateness to the child is also crucial in supporting the child's development. Sutton et al. (2007) note that parents' sensitive support promotes reading and vocabulary development. Most research findings also support this claim. For example, Işıkoğlu-Erdoğan et al. (2017) found that the use of question and feedback strategies when the reading had a positive effect on the receptive and expressive language development of 4-5-year-olds children. However, most families do not interact adequately with their children while reading despite its importance. A research finding by Işıkoğlu-Erdoğan et al. (2016) reveal that most parents of 4-5-year-olds attending kindergarten ended the activity without doing anything after reading and did not want the child to re-animate or tell the story.

There has been a rising interest in the literature dealing with research instruments designed for illustrated children's books. For example, Gönen et al. (2014) prepared a five-part "Book Checklist" to evaluate illustrated children's books for 0-3 age groups. The five sections of the checklist are: (1) introductory part containing such information as the title of the book, name of publisher, publication year, type, label, price, number of pages, whether the book is translation, (2) a 17 item section on physical qualities, (3) an 8 item section on illustration qualities, (4) a 12 item section on content qualities and (5) a 2 item section on additional qualities. Deniz and Gönen (2020) designed a scale to assess the nature of picture storybooks. The Cronbach Alpha coefficient of this scale, which used sufficient, partially sufficient and insufficient options to measure the various characteristics of the books, was 0.94. Aram and Aviram (2009) designed a five-point Likert-type scale which was used to explore the difference between the children's books selection criteria of preschool children's mothers and the experts. The scale has 32 items related to the language, picture, topic, and theme sub-groups. Körükçü (2012) conducted a study to examine the illustrated children's using his own "Book Registration Form". The study found that most books are medium-sized, the cover and pages are glued, and illustrations and text are related. The books also had bad book cover designs. Apart from these, there are other research instruments regarding reading behaviors and attitudes to the child. For example, Bracken and Fischel (2008) used a survey of family reading behavior to investigate preschool children's family reading behaviour. The study focused on the relationship between different dimensions of family reading behavior, such as child reading, parent reading interest, and parent–child reading interaction. DeBaryshe and Binder (1994) designed Parent Reading Belief Inventory to measure parents' beliefs about the goals and process of reading aloud to 2-5-year-old-children. The inventory is a four-point Likert type. Another research instrument is 'Child-Parent Shared Reading Activities Scale'. It was designed by Işıkoğlu Erdoğan (2016) in order to reveal parents' reading activities with their children. Lastly, Bayraktar (2019) designed "Scale of Interior and External Structure of Storybooks" to investigate parents' views on the book selection process for their children.

The literature review shows that there is limited number of studies on research tools exploring the criteria for parents' selection of picture storybooks to their 48-72-month children and the behavior of reading these books to their children. In order to fill this gap, this study aims to design two research instruments that generate valid and reliable measurements. The first is 'Picture Storybook Selection Criteria Scale', which explores parents' criteria when selecting a picture storybook for their 48-72-month children. The other instrument the study aims to design is 'Picture Storybook Reading Behavior Scale for Children', which explores parents' behaviors reading these books to children.

Research Questions

The study aimed to design two research instruments that generate valid and reliable measurements. The first is the 'Picture Storybook Selection Criteria Scale (PSSCS),' which explores the parents' criteria when selecting a picture storybook for their 48-72-month-old children. The other instrument the study aimed to design is the 'Picture Storybook Reading Behavior Scale for Children (PSRBSC)', exploring parents' behaviors while reading these books. Two sub-questions were addressed:

1. Is the PSSCS a valid and reliable instrument for measuring picture storybook selection for 48-72 months old children?

2. Is the PSRBSC a valid and reliable measurement instrument for measuring the reading behavior of picture storybooks to 48-72 months old children?

METHOD

Research Design

This research is a scale development study. According to Tay and Jebb (2017), scale development is a process of developing a reliable and valid measure of a construct to assess an attribute of interest.

Participants

Three hundred six parents (263 mothers, 43 fathers) lived in a city in Türkiye's Eastern Black Sea region and had 48-72-month-old children (enrolled in the preschool) participate in the study. Participants were selected using purposeful nonrandom sampling because it is easily accessible. The characteristics of the participants are shown in Table 1.

Table 1. The Characteristics of Participants

Characteristics		%
Age of Participant's Child	48-60 months old	27
	61-67 months old	46
	68-72 months old	27
Level of Educational (Mother)	Primary school graduate	4
	Secondary school graduate	7
	High school graduate	36
	Associate's degree	13
	Bachelor's degree	37
	Master's degree	2
	Ph.D. degree	1
Level of Educational (Father)	Primary school graduate	5
	Secondary school graduate	8
	High school graduate	29
	Associate's degree	14
	Bachelor's degree	30
	Master's degree	9
	Ph.D. degree	4
Monthly Household Income	1000-2000 Turkish Lira	15
	2001-4000 Turkish Lira	29
	4001-6000 Turkish Lira	33
	6001-8000 Turkish Lira	14
	8000+ Turkish Lira	9
Buying Picture Storybook (Monthly)	At least once a month	39
	Several times a month	35

Data Collection Tools

The scale development process was carried out in two basic steps: instrument development and exploring psychometric properties (Yurdugül, 2005). The seven steps involved in instrument development are (1) concept identification, (2) literature review, (3) construction of the items, (4) identifying scale format, (5) construction of initial form, (6) obtaining an expert opinion and (7) construction of final form. Exploring the psychometric properties includes pilot implementation, item factor analysis, and final form construction (DeWellis, 2017; Tezbaşaran, 2008; Yurdugül, 2005).

The study focuses mainly on those main topics: research on picture storybooks in the early years, the characteristics of these books, and the points to be considered when reading to the preschool child. Based on these topics, an initial item pool containing 33 items for the picture storybook's selection criteria and 11 items for the PSRBSC was generated. Of 33 items, 12 are related to language, expression, and age-appropriate characteristics, 9 to content characteristics, and 13 to formal characteristics. The 11 items, on the other hand, are related to the parent's behaviour when reading a picture storybook to the child. Both scales are 3-point Likert-type which use

‘(3) agree’, ‘(2) neutral’ and ‘(1) disagree’ options to measure agreements. One of the most common item formats is the Likert scale. When used, the item is presented as a declarative sentence, followed by response options that indicate varying degrees of agreement with or endorsement of the statement (DeWellis, 2017). In other words, Likert-type scales are based on self-report (Tezbaşaran 2008); that is to say, participants are asked to rate the level to which they agree with an item. The current study also used a 3-point preference scale both in terms of ease of use and aim of measurement. For this reason, a structure with three options was preferred to facilitate the participants. For Jacoby and Matell (1971), 5-point or 7-point scales do not appear to be an overwhelming advantage in their use. Besides, they can be problematic for ease of use for certain participant groups. So 3-point Likert-type scales are always good enough.

The study provided evidence of content validity using item relevance ratings by experts. Experts were asked to rate each item and how well they fit the scale's scope and aim. Two experts are preschool education specialists with a doctoral degree; one is a child development specialist with a master's degree. One of the experts is a preschool teacher with eight years of professional experience. Two Turkish language specialists were also asked to check whether the scale items were understandable to the readers. Two preschool teacher candidates and three parents who were not in the study group explored the items further to determine whether they performed the same. Based on the feedback from experts, students, and parents, each item's content validity ratio was calculated using Lawshe’s formula. Lawshe’s formula of content validity is (CVR) CVR= [Ne-N/2]-N/2, in which Ne is the number of experts classifying each item into “essential” and N is the total number of experts (Lawshe, 1975). CVR varies between -1 and +1. The content validity rate of each item should be 0.99 or 1.00. A higher score means further agreement between experts on that item's necessity (Sönmez & Alacapınar, 2016). In the study, the critical CVR value for six experts was set to 0.99 at α=0.05 significance level according to Lawshe’s formula. For the PSSCS, the CVRs for 25 items were equal to 1.00, for six items to 0.66, two to 0.33, and one to -0.33. So, eight items with CVRs less than 0.99 were excluded from the scale. Thus, the content validity of these 25 items was statistically established. For the PSRBSC, the CVRs for all 11 items were equal to 1.00, indicating perfect agreement. So, no item was excluded from the scale.

Following these procedures, the draft scale was administered to 6 parents, not in the study group. It took 24 minutes to complete the PSSCS and 15 minutes for the PSRBSC. Based on the feedback received, no problems were identified regarding understanding and clarity.

Data Collection

The data were obtained between December 2018 and February 2019. Before the data collection process, the administrators of the preschools were interviewed and informed about the study. The participants were reached with the support of the administrators and teachers of the six preschools. It was explained to the parents that they could stop answering the items on the scales at any part of the study and leave the study. Thus, the parents who volunteered to participate in the study participated in the survey. Voluntary participation was significant. Erkuş (2012) emphasizes that it is essential to sample the range of the measured feature in scale development studies and that participation should be voluntary. The participants filled out the information form, followed by the PSSCS and PSRBSC. The process took approximately 40 minutes for one participant.

Research Ethics

We informed the participants about the aim of the study and the process before collecting the data. It was explained to the participants that participation in the research was voluntary. It was stated that they could stop responding to the items in the data collection tools. Within the scope of this information, the participants who wanted to participate in the study signed an informed consent form. As researchers, we undertake to comply with universal ethical rules at all stages of the study. In addition, since the data belong before 2020, additional ethics committee approval cannot be obtained.

Data Analysis

The construct validity was carried out by exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The psychometric properties such as Cronbach’s Alfa coefficient, item-total correlation, and item discrimination were evaluated based on the statistical package program's analyses for social sciences. But CFA was considered using Lisrel (Jöreskog & Sörbom, 1993). Various suggestions exist about the minimum sample

size required for factor analysis applications. For example, the sample should consist of at least 150 participants according to Tabachnick ve Fidell (2007), at least 250 participants, according to Cattell (1978), and at least 300 participants according to Norusis (1994). Three hundred and six participants took part in this study. Comrey and Lee (1972) define a sample size of 300 participants as "good".

The same data set was used in study's EFA and CFA analyses. Different opinions exist about performing EFA and CFA analyses with the same data set (Cabrera-Nyugen, 2010; Erkuş, 2016; Fabrigar & Wegener, 1999; Henson & Roberts, 2006; Worthhington & Whitaker, 2006). Erkuş (2016) states that artificially dividing the sample into two and applying EFA to half and CFA to the other half is definitely not correct. As a result of the study in which they examined the articles on scale development published in the field of education in Türkiye, Şahin and Boztunç-Öztürk (2020) concluded that EFA and CFA analyses were performed using the same data in more than half of their studies. Doğan et al. (2020) suggested that EFA and CFA analyses are not performed by dividing the data into structures where the number of samples is less than 500. In this context, the same data set was used in the EFA and CFA analyses in the study, considering the sample size.EFA is a process whose primary goal is identifying underlying relations between measured variables (Field 2013). This study measured the appropriateness of data structure and number for EFA through the Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity. Besides, principal component analysis was used for factor extraction. The Eigenvalues-greater-than-one rule proposed by Kaiser was used for selecting the optimal number of factors. The scree plot graph was also examined. In the literature, researchers propose values of 0.30 criteria for selection (Kline, 1994).

CFA is a statistical technique used to verify observed variables (Suhr, 2006). Researchers generally use fit indices and statistics to assess confirmatory factor analysis. The fixed index and statistics used in this study are Chi-square/Degrees of Freedom ($\chi 2$/sd), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Normed Fit Index (NFI), Comparative Fit Index (CFI), Relative Fit Index (RFI), Standardized Root Mean Square Residual (SRMR) and Root Mean Square Error of Approximation (RMSEA). Some critical values indicating good model fit were calculated for this index and statistics. These necessary value intervals were shown together with the scales' values in the results section. Total scores were also calculated to measure the scale items' distinctiveness. The lower and upper 27% groups were formed based on these scores. The scale items' distinctiveness was tested by t-test using lower and upper groups.

Cronbach's Alfa coefficient, item-total correlations, and corrected item-total correlations values were calculated in the reliability of the scales. Cronbach's Alfa was calculated for a full scale, including all subscales and factors. As a general rule majority of the scale items should be highly correlated (Büyüköztürk, 2016).

FINDINGS

Findings of the PSSCS

Before EFA, the Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity were conducted to measure data appropriateness. The outcome for KMO value was 0.845, and Bartlett's Test of Sphericity was generated ($\chi 2$= 1197.656, $p = 0.000$). Tabachnick and Fidell (2007) assert that the minimum acceptable value ($p<0.05$) for KMO is 0.6 and 0.5 for Bartlett's Test of Sphericity. As such, the data is well-suited to the factor analysis.

While performing EFA, an initial form of the 25-item was first generated. Then the "varimax" rotation method was conducted to assess the underlying structures for these items (Büyüköztürk, 2016). The items with factor loading below 0.30 and those loading below 0.10 with more than one factor were eliminated. Finally, eight items were excluded from the scale, and a second final form of the scale containing 17 items was developed. The eigenvalues of the scale factors and the explained variance were applied to determine the number of factors (Table 2).

Table 2. The Rates of Eigenvalue-Explained Variance

Factor	Eigenvalues	Explained Variance	Total Variance
1	4.622	27.189	27.189
2	1.792	10.539	37.728
3	1.278	7.519	45.247

Using EFA, it was found that three factors with eigenvalues greater than 1.0 were retained. The total explained variance was 45.247%. Tezbaşaran (1997) reports that the minimum explained variance in research is 40%. As such, the scale satisfies the requirements of factor analysis. Another option is using a scree plot graph. The scree plot graph for the second final form of the 17 items scale is shown in Figure 1.

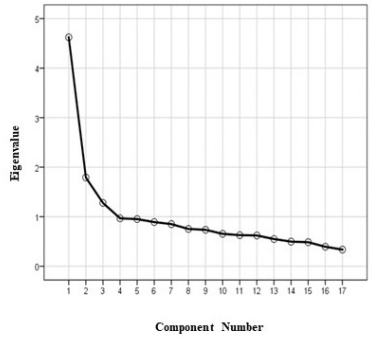

Figure 1. *The Scree Plot Graph of the PSSCS*

When Figure 1 is examined, it is understood that the amount of eigenvalues depends on the factors of the data set. It shows a sharp decline between the first and second eigenvalues. The first four factors account for most of the total variability. The remaining eigenvalues, on the other hand, constitute rubble. Given the changes in the Kaiser rule and the scree plot graph, the scale items were structured on three factors. The factor load of the three-factor scale items produced by "varimax" rotation is shown in Table 3.

Table 3. The Factor Load of the Scale Items Produced by "Varimax" Rotation

Items	Factor Load		
	1	2	3
i25. I choose a book that increases my child's vocabulary.	0.704		
i19. I choose books that appeal to the age level of my child.	0.686		
i33. I chose books most suitable to the grade level of my child.	0.682		
i22. Lovable characters push me to purchase a book.	0.657		
i21. I pay attention to the content. I wonder whether the title can assist the meaning-making process.	0.589		
i12. I explore the pictures to determine whether they reflect the book's actual content.	0.557		
i13. I pay attention to author's language, whether he/she uses simplified language to encourage a child's understanding.	0.510		
i5. I pay attention to age levels for children's books.	0.408		
i28. I prefer books that nurture and inspire such universal values as peace, love, kindness, etc.*		0.724	
i27. I don't care if the book has slang phrases or words.*		0.706	
i26. I prefer books with a basic idea.		0.511	
i30. I don't buy books that seriously harm my child's imaginary world.		0.508	
i17. I prefer books that utilise the best typography for overall reading comfort.			0.717
i18. I prefer books that use correct punctuation and spelling.			0.698
i3. I pay attention to whether the author's name and publisher's information are on the book's cover.			0.665
i10. I prefer a book that do not wear out more quickly.			0.549
i16. I review what information goes on the back cover of the book.			0.389

* Reverse coded scale items

The correlation values between the factors were calculated as 0.491 between the first and second factors, 0.334 between the first and third factor, and 0.195 and between the second factor and third factor. The factors were named as ‘Language, Expression, Age-Appropriate Characteristics (Factor 1)’ ‘Content Characteristics (Factor 2)’ and ‘Formal Characteristics (Factor 3)’.

CFA was conducted to test the 3-factor model obtained from EFA. Second-order CFA was then employed to confirm the structure of these three factors’ load into the underlying sub-dimensions. The factor loads and distribution obtained from CFA and second-order CFA are shown in Figure 2 and Figure 3.

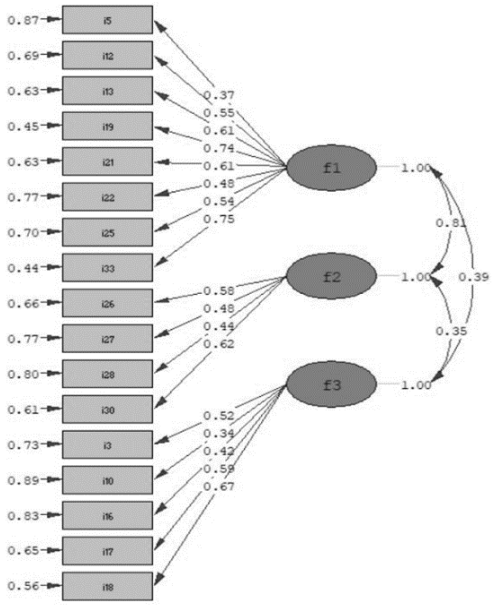

Figure 2. *Diagram for CFA model*

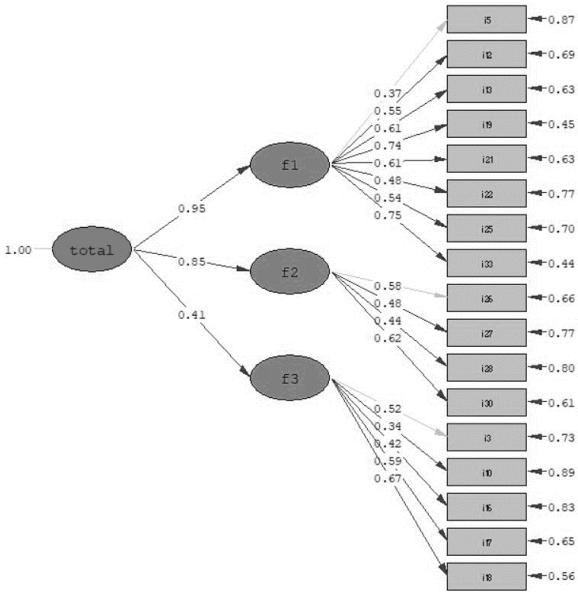

Figure 3. *Diagram for second-order CFA model*

Table 4. The Fit Indices Obtained From CFA and Second-Order CFA

Fit Indices	Good Fit	Acceptable Fit	CFA	Second-Order CFA
$\chi 2/sd$	$0 \leq \chi 2/sd \leq 2$	$2 \leq \chi 2/sd \leq 3$	2.10	2.11
GFI	$0.95 \leq GFI \leq 1.00$	$0.90 \leq GFI \leq 0.95$	0.93	0.93
AGFI	$0.90 \leq AGFI \leq 1.00$	$0.85 \leq AGFI \leq 0.90$	0.90	0.90
NFI	$0.95 \leq NFI \leq 1.00$	$0.90 \leq NFI \leq 0.95$	0.91	0.91
CFI	$0.95 \leq CFI \leq 1.00$	$0.90 \leq CFI \leq 0.95$	0.95	0.95
RFI	$0.95 \leq RFI \leq 1.00$	$0.90 \leq RFI \leq 0.95$	0.90	0.90
SRMR	$0.00 \leq SRMR \leq 0.05$	$0.05 \leq SRMR \leq 0.10$	0.057	0.057
RMSEA	$0.00 \leq RMSEA \leq 0.05$	$0.05 \leq RMSEA \leq 0.08$	0.056	0.056

When Table 4 is examined, it is understood that fit indices for both CFA ($\chi 2/sd$= 2.10, GFI= 0.93, AGFI=0.90, NFI=0.91, CFI=0.95, RFI=0.95, SRMR=0.057, RMSEA=0.056) and second-order CFA ($\chi 2/sd$= 2.11, GFI= 0.93, AGFI=0.90, NFI=0.91, CFI=0.95, RFI=0.95, SRMR=0.057, RMSEA=0.056) surpass the threshold suggested by (Hu & Bentler, 1999; Kline, 1994; Schermelleh-Engel et al., 2003). The model's construct was confirmed, and a general factor and three sub-factors were obtained. The scale gives scores based on both total points and sub-factors.

The Item Discrimination of the PSSCS

The item discrimination of the PSSCS was tested by t-test using lower and upper 27% groups. The results obtained from the analysis are shown in Table 5.

Table 5. Item Discrimination and Corrected Item-Total Correlations Results (N=83)

Items (Downside/Upside)	Mean	ss	t	sd	p	Corrected Item-total Correlations
i5	2.542 / 3.000	0.754 / 0.000	-5.533	164	0.000**	0.345
i12	2.410 / 3.000	0.797 / 0.000	-6.749	164	0.000**	0.479
i13	2.687 / 3.000	0.661 / 0.000	-4.316	164	0.000**	0.479
i19	2.795 / 3.000	0.558 / 0.000	-3.345	164	0.001*	0.540
i21	2.747 / 3.000	0.560 / 0.000	-4.118	164	0.000**	0.442
i22	2.386 / 2.976	0.746 / 0.154	-7.058	164	0.000**	0.384
i25	2.530 / 3.000	0.687 / 0.000	-6.233	164	0.000**	0.412
i33	2.807 / 3.000	0.573 / 0.000	-3.065	164	0.003*	0.525
i26	2.422 / 2.964	0.751 / 0.188	-6.381	164	0.000**	0.464
i27	2.518 / 2.976	0.861 / 0.220	-4.697	164	0.000**	0.291
i28	2.482 / 2.928	0.786 / 0.376	-4.660	164	0.000**	0.256
i30	2.663 / 3.000	0.703 / 0.000	-4.370	164	0.000**	0.468
i3	1.795 / 2.855	0.729 / 0.387	-11.711	164	0.000**	0.338
i10	1.928 / 2.771	0.894 / 0.477	-7.582	164	0.000**	0.240
i16	2.024 / 2.964	0.924 / 0.188	-9.084	164	0.000**	0.350
i17	1.747 / 2.892	0.825 / 0.350	-11.649	164	0.000**	0.330
i18	1.446 / 2.819	0.703 / 0.472	-14.778	164	0.000**	0.412

* $p < 0.05$ refers to statistically significant, and ** $p < 0.001$ statistically highly significant.

When Table 5 is examined, it is understood that the 19th and 33rd items yielded a p-value of 0.05 but remained a p-value of 0.001. All the items appear to work well with all groups and satisfy the requirements.

Reliability of the PSSCS

To estimate reliability, the Cronbach's Alfa coefficient was assessed separately for each dimension and overall scale. The first category of the scale has a reliability coefficient of 0.779; the second 0.624; the third 0.628; and the overall scale 0.775. According to George and Mallery (2003), values between 0.6 and 0.7 are acceptable, 0.7-0.9 are good, and 0.9-1.0 are excellent. Therefore, all coefficient values are above the cut-off criterion. Corrected item-total correlations also vary between 0.240 and 0.540. The high levels of these values mean that the items making up the scale measure precisely what they are supposed to measure.

CFA and EFA were applied to the scale to prove its validity. As a result of EFA and CFA, a 3-dimensional model was obtained. Fit indices were also above the threshold level. These analyses suggest that the scale was a valid and reliable instrument.

Findings of the PSRBSC

Before EFA, the Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity were conducted to measure data appropriateness as in the first scale. The outcome for KMO value was 0.823, and Bartlett's Test of Sphericity was generated ($\chi 2$= 1353.653, p = 0,000). These values surpass the threshold suggested by (Tabachnick & Fidell 2007). As such, the data is well-suited to the factor analysis.

While performing EFA, an initial form of the 11-item was first generated. Their factor loading below 0.30 and those loading below 0.10 with more than one factor were eliminated. So two items were excluded from the scale, and a second final form of the scale containing nine items was developed. The eigenvalues of the scale factors and the variances explained were applied to determine the number of factors. Table 6 presented the rates of eigenvalues and explained variance.

Table 6. The Rates of Eigenvalue-Explained Variance

Factor	Eigenvalues	Explained Variance	Total Variance
1	4.121	45.787	45.787

Using EFA, it was found that only one factor whose eigenvalues were greater than 1.0 were retained. As Table 5 shows, the eigenvalues of the factor were 4.121. This factor explains 45.787% of the measured latent variable. According to Büyüköztürk (2016), the minimum explained variance is acceptable in the one-factor analysis in %30. As such, the scale satisfies the requirements of factor analysis. Another option is using a scree plot graph. The scree plot graph for the second final form of the nine items scale is shown in Figure 4.

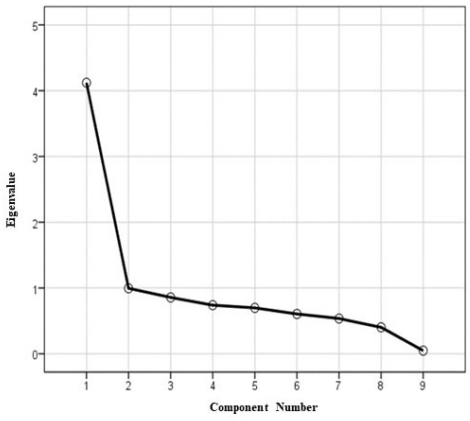

Figure 4. *The Scree Plot Graph of the PSRBSC*

When Figure 4 is examined, it is understood that the amount of eigenvalues depends on the factors of the data set. It offers a sharp decline between the first and second eigenvalues. As depicted in the graph, the remaining eigenvalues show less dramatic delineations. The scale items were structured on one factor, given the changes in the Kaiser rule and the scree plot graph.

EFA was computed to calculate the factor loads of the items. Since the scale has one factor, no rotation method was applied. The factor load of the scale is shown in Table 7.

Table 7. The Factor Load of The Scale Items Produced By The Rotation Method

Items	Factor Load
i9. I read the book at a speed my child could understand.	0.912
i7. I answer my child's questions about the book.	0.907
i5. I appreciate reading a picture storybook to my child.	0.680
i11. After reading, I ask my child a question about what I read (For example, "which animal did the Hedgehog encounter in the forest?).	0.670
i8. While reading, I hold the book the right way so the child can see the pictures of the book.	0.623
i2. Before reading, I let my child review the book.	0.613
i3. I pay attention to the accent and phrasing of my speech while reading (for example, I masculinize my voice when the wolf speaks.)	0.579
i6. While reading, I try to contact my child (I hug my child) physically.	0.541
i4. I take a break while reading and ask, "What do you think will happen next?".	0.405

When Table 7 is examined, it is understood that nine items are structured under one factor, with factor loads varying between 0.405 and 0.912.

CFA was conducted to test the one-factor model obtained from EFA as in the first scale. The factor loads and distribution obtained from one factor CFA are shown in Figure 5. The fit indices obtained from one factor CFA are shown in Table 8.

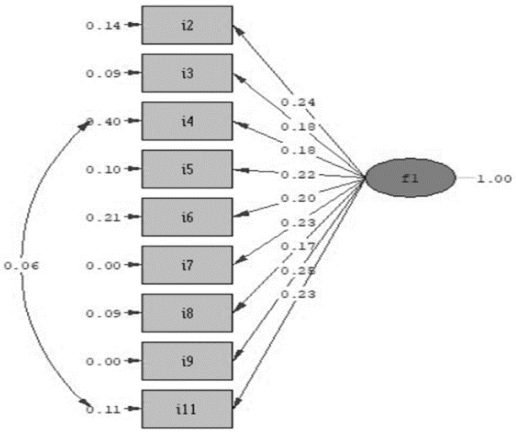

Figure 5. *Diagram For One-Factor CFA Model*

Table 8. The Fit Indices Obtained From CFA

Fit Indices	Good Fit	Acceptable Fit	CFA
$\chi 2/sd$	$0 \leq \chi 2/sd \leq 2$	$2 \leq \chi 2/sd \leq 3$	2.39
GFI	$0.95 \leq GFI \leq 1.00$	$0.90 \leq GFI \leq 0.95$	0.96
AGFI	$0.90 \leq AGFI \leq 1.00$	$0.85 \leq AGFI \leq 0.90$	0.92
NFI	$0.95 \leq NFI \leq 1.00$	$0.90 \leq NFI \leq 0.95$	0.96
CFI	$0.95 \leq CFI \leq 1.00$	$0.90 \leq CFI \leq 0.95$	0.98
RFI	$0.95 \leq RFI \leq 1.00$	$0.90 \leq RFI \leq 0.95$	0.95
SRMR	$0.00 \leq SRMR \leq 0.05$	$0.05 \leq SRMR \leq 0.10$	0.042
RMSEA	$0.00 \leq RMSEA \leq 0.05$	$0.05 \leq RMSEA \leq 0.08$	0.068

When Table 8 is examined, it is understood that fit indices for one-factor CFA ($\chi 2/sd$= 2.39, GFI= 0.96, AGFI=0.92, NFI=0.96, CFI=0.98, RFI=0.95, SRMR=0.042, RMSEA=0.068) surpass the threshold suggested by (Hu & Bentler, 1999; Kline, 1994; Schermelleh-Engel et al., 2003). The one-factor construct of the model was confirmed, and one-factor model of the scale was obtained.

The Item Discrimination of the PSRBSC

The item discrimination of the PSRBSC adjusted item-total correlation and 27% lower-upper group comparisons are included. The unrelated sample t-test was used for 27% lower-upper group comparisons. The results obtained from the analysis are shown in Table 9.

Table 9. Item Discrimination and Corrected Item-Total Correlations Results

Items (Downside/Upside)	N	Mean		ss		t	sd	p	Corrected Item-total Correlations
i2	83/83	2.615 3.000	/	0.746 0.000	/	-4.707	164	0.000**	0.455
i3	83/83	2.747 3.000	/	0.622 0.000	/	-3.708	164	0.000**	0.423
i4	83/83	2.000 3.000	/	0.841 0.000	/	- 10.833	164	0.000**	0.327
i5	83/83	2.675 3.000	/	0.665 0.000	/	-4.459	164	0.000**	0.534
i6	83/83	2.458 3.000	/	0.816 0.000	/	-6.053	164	0.000**	0.439
i7	83/83	2.880 3.000	/	0.453 0.000	/	-2.425	164	0.016*	0.772
i8	83/83	2.723 3.000	/	0.611 0.000	/	-4.131	164	0.000**	0.497
i9	83/83	2.880 3.000	/	0.479 0.000	/	-2.293	164	0.023*	0.780
i11	83/83	2.578 3.000	/	0.683 0.000	/	-5.626	164	0.000**	0.555

* p <0.05 refers to statistically significant, and ** p <0.001 statistically highly significant.

When Table 9 is examined, it is understood that the 7th and 9th items yielded a p-value of 0.05 but remained a p-value of 0.001. The significant t values of the differences between the lower and upper groups are considered evidence of the item's distinctiveness (Erkuş, 2012). All the items appear to work well with all groups and satisfy the requirements.

Reliability of the PSRBSC

Cronbach's Alfa coefficient was assessed for the overall scale since it measures only one construct. The reliability coefficient of the overall scale was 0.787. Considering the cut-off scores determined by George and Mallery (2003), it can be said that the scale's reliability is sufficient. According to Table 8, corrected item-total correlations of scale items vary between 0.327 and 0.780. The high levels of these values indicate that the items are related to the scale's characteristics.

CFA and EFA were applied to the scale to prove its validity. As a result of EFA and CFA, a one-factor model was obtained. Fit indices were also above the threshold level. The analyses suggest that the scale was a valid and reliable instrument.

DISCUSSION & CONCLUSION

Measurement permeates every aspect of human life. It occurs in two basic steps: identifying the desired property and selecting an appropriate tool to measure this quality (Tavşancıl, 2014). "Scales are collections of items combined into a composite score and intended to reveal levels of theoretical variables not readily observable by direct means" (DeWilles, 2017, p. 30). Developing a new scale involves several stages (DeWellis, 2017; Tezbaşaran, 2008; Yurdugül, 2005). "A primary goal of scale development is to create a valid measure of an underlying construct" (Clark & Watson, 1995, p. 309).

This study presents two different scales. The PSSCS is a 3-point Likert-type scale that comprises 17 items structured under three factors. The factor named "Language, Expression, And Age-Appropriate Characteristics" consists of eight items; the factor named "Content Characteristics" consists of four items; and the factor named "Formal Characteristics" consists of five items. Respectively, the reliability coefficient of the factors is 0.779, 0.624, 0.628, and the overall scale 0.775. A maximum of 51 and a minimum of 17 scores are obtained from the scale. As a result, The PSSCS, which consists of three factors and 17 items, is valid and reliable.

Picture storybooks are an important source of new languages, concepts, and lessons for young children. (Strouse et al., 2018). It is known that picture storybooks positively contribute to the child's development. (Champion et al., 2014; Maynard et al., 2010; Sackes et al., 2009; Tompkins et al., 2012; Young et al., 2013). However, choosing suitable and high-quality books for the child is not always easy. According to Chang & Zheng, 2004), the primary considerations when choosing picture books are the child's development and needs. Selecting the appropriate picture storybooks for children by considering their development and needs can be overwhelming for the parents responsible (Hsiao & Chang, 2016). In this context, it is thought that the PSSCS may be useful when choosing picture storybooks for young children.

The most supportive thing parents can do to help children learn, even more than selecting high-quality books, is to have conversations with them during reading (Strouse et al., 2018). According to Foster (2014) children are introduced to picture storybooks early, and parents often reinforce interaction with these books. There are many studies documenting parent-child interactions during book reading and the quality of the interaction is important (Cline & Edwards, 2016; Strouse et al., 2018). Studies emphasise that picture storybook reading activities in early childhood can positively affect the child (Dickinson et al., 2003; Lenhart et al., 2020; Shedd & Duke, 2008; Whitehurst & Lonigan, 2003). In this context, the importance of picture storybook reading behaviors to children can be emphasized.

The PSRBSC is a 3-point Likert-type scale that comprises nine items structured under one factor. The scale has a reliability coefficient of 0.787. A maximum of 27 and a minimum of 9 scores are obtained from the scale. As a result, The PSRBSC, which consists of one factor and nine items, is valid and reliable. In line with its purpose, the scale also informs adults about the points to be considered while reading a picture storybook for children.

The scales can be used and scored for parents with 48-72-month-old children. The scales can be used for various studies, and analyses can be performed on various variables. Also, preschool teachers can use the scales within the scope of parent involvement studies. Thus, teachers can be informed about the issues by choosing a picture storybook and reading these books to the child. Parents' awareness about the issues to be considered while choosing a picture storybook for their children and reading the picture storybooks they choose can be increased. The results to be obtained with the first scale are essential in improving the quality of the picture storybooks. The results from the second scale can be used to determine the content of support to parents in the relevant subject. We believe the study's content will boost the parents' confidence and help the educators support the parents and families.

The most important limitation of the study is the sample characteristics. Participants in the study group are mostly mothers. In addition, obtaining data from only one province and the sample size is one of the study's limitations. Participation in the research is voluntary; therefore, accessing a more extensive study group may be difficult. Accordingly, incentive mechanisms can be developed to increase the number of participants for future studies.

Statements of Publication Ethics

We declare that this study has no ethical conflicts or problems that may limit the article's publication.

Researchers' Contribution Rate

Authors	Literature review	Method	Data Collection	Data Analysis	Results	Conclusion	Corresponding Author
Author 1's name	☒	☒	☒	☒	☒	☒	☒
Author2's name	☒	☒	☒	☐	☒	☒	☐
Author 3's name	☐	☐	☒	☐	☐	☐	☐

Conflict of Interest

We declare that there is no conflict of interest in this study.

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University as a Place for Personal Renaissance: Future-teachers' University Experiences as Agents for Learning and Teaching Peace

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ABSTRACT

This phenomenological study aims to understand how future-teachers' university setting has become a personal awakening place to reflect on their past schooling experiences and build plans as peace agents. In other words, this study argues that university experience, if meaningfully constructed to promote peace, equips future-teachers with the necessary skills to teach peace, and it could help future teachers about critically reflecting their past learnings upon the negative peace and violence. It transforms these learnings into positive peace in the end. Drawing from Freire's (1970) critical consciousness and Giroux's (1981,1988, 2010) conceptualization of teachers as transformative intellectuals, the findings suggest that universities by building inclusive, peaceful, democratic, and diverse communities, can help their students to gain the awareness of systematic oppression and structural violence (re)produced by patriarchal, political and social discourses, and it develops motivation to incorporate peace (education) in their professional practices.

Keywords: Peace education, transformative intellectuals, critical theory, critical consciousness, schooling experience

Kişisel Rönesans Mekanı Olarak Üniversite: Öğretmen Adaylarının Barışı Öğrenme ve Öğretme Aracı Olarak Üniversite Yaşantıları

ÖZ

Bu fenomenoloji çalışması, üniversite ortamının, öğretmen adaylarının geçmiş eğitim deneyimleri üzerine düşünmek ve gelecek planlarını inşa etmede nasıl kişisel bir uyanış yeri haline geldiğini açıklamayı amaçlamaktadır. Başka bir deyişle, bu çalışma, üniversite deneyiminin, eğer barışı teşvik etmek için anlamlı bir şekilde inşa edilirse, öğretmen adaylarının barış eğitimi uygulamaları için gerekli becerilerle donatılabileceğini, onların barış ve şiddet hakkında geçmişte öğrendikleri olumsuz bilgileri eleştirel olarak gözden geçirmelerine ve bu öğrendiklerini anlamlı ve olumlu bir biçimde dönüştürmelerine yardımcı olabileceğini savunuyor. Freire'nin (1970) eleştirel kuram kapsamında bahsettiği eleştirel bilinç kavramı ve Giroux'nun (1981, 1988, 2010) öğretmenleri dönüştürücü entelektüeller olarak kavramsallaştıran açıklamaları kullanılarak yürütülen bu çalışmanın bulguları, üniversitelerin kapsayıcı, barışçıl, demokratik ve çeşitli topluluklar inşa ettiğinde, öğrencilerinin ataerkil, politik ve sosyal söylemler tarafından (yeniden) üretilen sistematik baskı ve yapısallaştırılmış şiddet konusunda farkındalık kazanmalarına yardımcı olabileceğini ve profesyonel hayatlarına barışı (eğitimini uygulamalarını) dâhil etme motivasyonu geliştirmelerine katkı sağlayacağını göstermektedir.

Anahtar kelimeler: Barış eğitimi, dönüştürücü aydın, eleştirel teori, eleştirel bilinç, okul yaşantısı

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INTRODUCTION

Getting out of the comfort zone or experiencing a new situation that is different from what is experienced regularly in daily life can be a challenging and sometimes rewarding experience for people. Many people start discovering their new self when they leave their long-lived environments such as neighborhood, hometown, and country for attending universities. One of the earlier research studies (Holdaway & Kelloway, 1987) highlights the positive influence of university on students' lifestyles and expectations. Although many felt challenged by their new environment and responsibilities, they found their university experience rewarding and felt "at ease" (Holdaway & Kelloway, 1987, p.59).

A study conducted with undergraduate students at Oxford University points out that the learning environment is a stimulating factor because students' opportunity to observe a group of intellectual students and scholars motivated them to learn more and be part of the university climate (Trigwell & Ashwin, 2003). Another example from an Australian university acknowledges the importance of the learning environment, students' relationship with their instructors and cohorts, and other social activities on students' personal development and self-discovery. Still, its major finding indicates that "universities should include a focus on what students have to say in their own words and incorporate such feedback into their priorities" (Grebennikov & Shah, p. 607). Wilcox et al. (2005) also mention that friendship that provides direct emotional support is important in overcoming negative university experiences for undergraduate students in higher education institutions in the UK. They also add that their courses, friendship with other university students, and relationship with the course instructor, even less significant, are important sources of the support.

A glance at studies on students' university experiences shows that universities, with their learning facilities and climate and a diverse group of people gathering with different academic purposes, help them to build meaningful university experiences and develop realistic and better versions of themselves. This study specifically focuses on how university students' learning experiences help them to change their perspectives of peace and peace education. The limited literature on university students' perceptions of peace and peace practices shows that both students in teacher training programs and teacher-educators are aware of the lack of peace practices at schools and higher education institutions and intend to improve existing peace practices within their capabilities (Burnley, 2003; Cook, 2014; Wang, 2018). However, when compared to students' learning at public schools (Flinders, 2005; 2006; Noddings, 2012), the university offers many opportunities for personal development and self-awakening about their abilities and skills for promoting peace.

This study examines how Turkish future teachers' university experiences help them to become agents for learning and teaching peace. This study originated for two reasons: 1) limited studies on how higher education practices and institutions can affect university students' perception of peace; and 2) our recent study's findings on Turkish future-teachers' perceptions of peace education shows that future-teachers want to become agents of change in improving the quality and quantity of peace education activities during their professional life (Gursel-Bilgin et al., 2023). In our recent study, when future-teachers were asked to reflect on how they wanted to teach peace in the classroom, they provided answers comparing what they experienced in their school life and how they wanted to be pioneers to change the peace education practices at schools. The participants believe that they learned the significance of teaching peace in their programs at the university was important by meaning-making their lived experiences at the university. Therefore, this study aims to understand the nature of this motivation and how their university has become a personal awakening place to reflect on their past schooling experiences and build plans as peace agents. In other words, this study argues that university experience, if meaningfully constructed to promote peace and equipped future-teachers with the necessary skills to teach peace, could help future teachers critically reflect on their past learnings about negative peace and violence, and transform these learnings into positive peace.

Research Questions

Guided by the following research questions, this study analyzes the development of participants' experientially grounded peace education perspectives. In addition, it investigates what caused them to develop such perspectives in their teacher education program.

What is the role of university experiences in shaping future-teachers' ideas of peace (in education)?

What is the relationship between future-teachers' past experiences at schools and present experiences at the university in conceptualizing peace?

Literature Review and the Context

The concept of peace is elusive. Still, peace education scholars agree that although the absence of direct and physical violence is important, it is not enough for comprehensive peace (Galtung, 1973). Hence, peace education takes positive peace (i.e., collaboration, integration, and cooperation) as its departure point to address and transform direct and structural forms of violence (Danesh, 2008). Although seminal educational scholars (e.g., Maria Montessori and John Dewey) emphasized the superiority of a comprehensive peace in transforming systematic inequalities and injustices decades ago, traditional schooling has most frequently promoted war and hatred through school books glorifying war (Feld, 1982), the implicit curriculum of violence (Darder, 2012), the hidden culture of war and violence at schools (Mcmanimon et al., 2012; Leahey, 2012; Elmore, 2012). Furthermore, the related literature demonstrates that peace education mostly remains a null curriculum in traditional schooling, leaving students and teachers with other sources (e.g., the media, culture, and society in general) to learn about war and peace (Flinders, 2005; 2006; Noddings, 2012). Flinders (2005; 2006) and Noddings (2012) suggest that despite the invaluable potential of schooling to scrutinize the social, psychological, and cultural factors supporting war, warrior and violence as well as identifying and creating alternative peaceful ways of being and doing, leaving comprehensive peace education out of the curriculum, schools miss a unique opportunity for students and teachers to explore the horrors of war and empower themselves with essential skills and insights to live peacefully. Towards fulfilling this invaluable opportunity of formal schooling (Bickmore, 2011; Flinders, 2005), peace education theory and practice should be supported with empirical research findings cultivated in ways relevant to various contexts (Elmore, 2012; Gursel-Bilgin, 2022; Leahey, 2012; Mcmanimon et al., 2012).

The related literature proposes that peace education should be integrated into all levels of education, from kindergarten to higher education programs as well as non-formal educational settings (Harris, 2004; Reardon, 1988; Bajaj, 2008). However, although empirical peace education research has focused on formal schooling at various grade levels (Bickmore, 2011; Cann, 2012; Flinders, 2005; 2006; Hantzopoulos, 2011; Shirazi, 2011), fewer studies have examined the complexities and offerings of peace education employed at higher education institutions. This limited literature on peace education practice in higher education concentrates on the complexities of integrating peace education into teacher education programs. Most of the studies examining preservice teachers' ideas and experiences related to peace education integrated into their program underlining preservice teachers' hesitance, even negative associations of peace-related concepts (Burnley, 2003; Cook, 2014; Wang, 2018). For example, a study examined a decade-old peace education program with pre-service teacher candidates and the program's effects on the preservice teachers' understanding of peace education. Over these ten years, the program has gone through changes in its form and content and had to face various challenges. With the analyses of the curriculum units the teacher candidates developed as part of this program revealed teacher candidates' lack of confidence regarding their understanding and knowledge of peace education and what it takes to integrate peace education into their lesson plans and curriculum (Cook, 2014). Other studies of teacher education programs integrating peace education found that teacher candidates were hesitant to practice peace education in their professional life because they found it challenging and stressful (Burnley, 2003; Wang, 2018). As the researchers explained, those future teachers tend to have little knowledge of peace education and prefer to integrate multiculturalism, environmentalism, and citizenship rather than peace education into their teaching practice. Burnley (2003) also discusses similar findings and suggestions that this hesitance towards peace education can be due to the perceived association between peace education and communist sympathizers during the 1980s and ethnic movements.

Various structural and content challenges teacher educators face in their efforts to integrate peace education in teacher education programs (Burnley, 2003; Cook, 2014; McLean et al., 2008; Wang, 2018) and teacher training programs (Bekerman & Zembylas, 2014; Brantmeier, 2010; Flinders, 2005; 2006; Zembylas & Loukaidis, 2021). It has been emphasized in the related literature. Whereas, seminal figures in education (e.g., Dewey, Montessori & Noddings) and theoretical and empirical literature in the field (Bajaj, 2008; Danesh, 2007; Darder, 2012; Hantzopoulos, 2011; Harris, 2004; Harris & Morrison, 2003; Noddings, 2012; Reardon, 2000; Salomon, 2002; Salomon & Cairns, 2010; Trifonas & Wright, 2011; Zembylas & Loukaidis, 2021) have underlined for decades that peace and education are inherently interconnected. Therefore, it goes without saying that teacher education

programs should equip future teachers with effective skills, experiences, and tools so that they can practice peace education in their classrooms. Furthermore, McLean et al. (2008) emphasize the need to equip future teachers with essential skills and tools to critically address the complexities and challenges surrounding peace education, but they also underline the importance of collaborating with other partners such as NGOs because relying on the faculties of education alone will not be sufficient. At that point, both teacher education (Tucker, 1982) and teacher training (Gursel-Bilgin & Flinders, 2020) that intend to integrate peace education should encourage networks and collaborations with the community.

Conceptual Framework

The meaning and the desired outcomes of peace education might differ according to the practitioners' and scholars' theoretical, political, and methodological orientations (Bajaj, 2008; Galtung, 1973; Salomon & Nevo, 2005). In the most basic sense, peace education aims to create cultures of peace by empowering individuals with effective skills, values, and insights. The practitioners in the field aim to achieve it by transforming educational planning, practice, pedagogy, and policy (Bajaj, 2008; Harris, 2004; Reardon, 1988; Salomon, 2002; Salomon & Cairns, 2010). This motivation most frequently necessitates confronting directly and indirectly that is different forms of violence (re)generated through patterns of thought and sociocultural structures (Harris & Morrison, 2003; Reardon, 1988).

Paulo Freire is one of the eminent scholars whose work has contributed to peace education theory and practices tremendously (Bajaj, 2008; Bartlett, 2008; Soto, 2005). As Freire (1970) emphasized, education can never be neutral. It either promotes conformity to the existing oppressive structures and realities of the society, or it emancipates individuals by empowering them with creative and critical skills and insights to transform the existing social, cultural, and political structures. Freire (1970) calls the former type of education banking education, and he strictly opposes it. He calls the latter type of education as a problem-posing education that makes conscientization "conscientização" (Freire, 1970, p. 74), or critical consciousness because this function of education as an instrument to transform the society aims to empower individuals, especially the oppressed, with creative and critical skills and tools to re-create their reality. This can be achieved through dialogue "the encounter between men, mediated by the world, in order to name the world" (Freire, 1970, p. 69). Freire's exceptional understanding of dialogue can be established with learners as a basis for social transformation by focusing on "here" and "now" of the students (Freire, 1994, p. 58). By aligning educational form, content, and organizational structure, peace education can promote a rigorous link between practice and research and ultimately cultivate transformative agency rooted in Freirean critical consciousness and praxis (Bajaj, 2008). Unfortunately, although this second type points to the immense potential of education to create a peaceful society by transforming reality and society, it rarely finds its way through the actual practice of formal schooling (Gursel-Bilgin, 2016).

Despite the remarkable literature emphasizing curriculum as "a privileged discourse" (Apple, 1982, 1999), the hidden curriculum of violence within schools (Darder, 2012), and educational practices legitimating and reproducing overt and/or structural violence (Bush & Saltarelli, 2000; Davies, 2004; Weinstein et al., 2007), transformative pedagogy can be cultivated by peace education scholars and practitioners in ways relevant to various contexts (Gursel-Bilgin, 2016; 2020; Gursel-Bilgin & Flinders, 2020).

Giroux's (1981, 1988, 2010) conceptualization of teachers as transformative intellectuals offers a lot to peace education practice, even in the hidden curriculum of violence at schools. As the key agents of educational systems, teachers have a unique potential in empowering individuals with knowledge, skills, and insights to question and transform structural and social inequalities (Page, 2008). Regarding schools' role in (re)producing social mechanisms, Giroux (2010) proposes his culture of positivism and emphasizes the vital relationships among schooling, ideology, and power. Although schooling often tends to emerge as a form of social regulation, teachers as transformative intellectuals can and should work for the emancipation of the individuals and ultimately create a just and peaceful society, which is particularly relevant to the goals of peace education (Kincheloe, 2004; Page, 2008). Instead of cultivating hope alone, teachers paying attention to the social and political structures and practicing critical peace education against inequalities would do well to employ "transformative optimism," as Rossatto (2005) proposed. Transformative optimists consider themselves be able to actively participate in the collective process of social transformation and use their agency to promote their students' conscientization or critical consciousness through their classroom practices (Bajaj, 2008).

METHOD

This phenomenological qualitative research examines how future-teachers explain that their university experience enables them to reconstruct and criticize their previous learnings of peace, war, and violence. The phenomenological focus of this study is the key virtues, values, and norms related to peace, war, and violence taught directly and indirectly at schools, in their lives, and other social institutions. The process of bringing out the participants' changing descriptions, experiences in their new social environment, and deconstruction of their earlier learning is necessary because phenomenological studies suggest collecting descriptions and narrations of the particular phenomenon to reach internalized and consciously and unconsciously constructed realities (Carspecken, 1996: Groenewald, 2004).

The participants' experiences are collected by using a semi-structured interview protocol on the role of learning environments such as school, family, and university in learning about peace, war, and violence. For this study, all of the questions were designed to get a better sense of how the participants viewed themselves concerning the peace, war, and violence discourse in the context of their own lives as well as the lives of those they care about including their families.

Participants and Recruitment Process

The people who took part in this study were from one of the leading state universities in Türkiye. They are recruited using call-for-recruitment posters on the notice boards of all teacher education programs in the school of education building. We have set some criteria for how we choose participants among volunteers. Participation in this study was voluntary, yet many students showed the interest. First, participants had to be enrolled in a teacher training program at the undergraduate or graduate level. Second, we set an age limit of 35 to ensure that everyone goes through a similar educational process before college. Third, 44 people expressed their interest in participating, but only 43 were chosen to be interviewed because one individual's age was above 35. Finally, being interested in peace advocacy or peace education was not a criterion for this study. Still, a few people expressed that they had signed up as the study was related to peace.

Among the volunteers, we had 33 undergraduates and ten graduate students. The graduates were working as teachers at the local public and private schools in addition to being a student in a master's program in education. Undergraduate students were from various teacher training programs, including guidance and psychological counseling, foreign language education, computer education and educational technology, and primary and secondary school science and math education.

Data collection

The original data collection plan was to interview each participant through face-to-face interviews in Turkish. However, we interviewed participants via using online platforms such as Skype or Zoom due to the unprecedented influence of the Covid-19 pandemic. Interviews took approximately 45 minutes, but a few of them were longer than 45 minutes.

Data analysis

All the interviews were taped and then typed out verbatim. We used MAXQDA Plus 2020 for data analysis. First, the participants' demographic data were entered into the software to categorize each transcript. Then, the researchers coded the transcripts at the same time. At first, we sketch-coded the interviews to familiarize ourselves with the construction of narratives as peace agents in participants' various stages of educational life. Later, we used keywords repeatedly mentioned in our participant's interviews, such as curriculum, hidden and implicit messages, critical thinking, social norms and realities, dialogues, social and self-transformation, discourse, and dialogue to find the patterns among participants as peace agents. In doing so, we noticed that our participants also used the key premises of our conceptual framework of teachers as transformative agents and intellectuals (Bajaj, 2008; Giroux, 1981, 1988, 2010; Freire, 1994). After completing each individual coding procedure, we debriefed on the codes and emerging themes.

Limitations

There were three key drawbacks to the study. First, as a result, the number of persons who saw our research posters were quite small before the Covid-19 pandemic. As a result of the shift from onsite to online schooling, we adapted our data gathering methods and conducted the interviews using online communication software. Participants also revealed their gender identity and explained how their claims influenced their responses to our questions, even though we did not intend to collect demographic data on the genders of our participants. The participants' criticisms of peace, conflict, and violent attitudes were addressed in this way.

Research Ethics

The Social and Human Sciences Human Study Ethics Committee at Bogazici University approved this research project on April 4, 2019. This article is based on research supported by Boğaziçi University BAP Start-Up Project with the code number 20D05SUP1 15941.

FINDINGS

The findings of this study were grouped under three major themes: 1) a safe and peaceful environment for diversity, 2) new gates for self-discovery and peace with self, and 3) the critique of past and present course contents and instructors. We also noticed that all these themes had an overarching argument indicating that "a university is a place for personal awakening." The future-teachers' responses to our interview questions were guided by this discourse of how their university was *the* place of their personal transformation and for creating professional development plans to teach peace at schools.

A Safe and Peaceful Environment for Diversity

Our participants complained that peace is not a commonly used concept compared to violence and war in their daily lives. Yet, they also complained that they rarely discussed peace-related concepts in their educational life. One of our participants, Mustafa, said: "War is more concrete in our lives, whereas peace exists as an abstract concept." Those who mentioned that they experienced peace in different stages of their life mostly referred to inner peace that they experienced in their small communities such as family and friendship environments. However, their positive approach in defining peace slowly evolved into a negative discourse when peace was perceived as a broader concept that encapsulated their overall life experiences. Remziye, for example, summarized the situation as such: "Peace is what my family taught me. It is living in serenity. I am not sure if it is like that for everyone… I can tell it exists in my life… I think we do not live in peace in general but we do in our small communities."

After arguing how their lives did not include peace in general, participants mentioned that they perceive university as a place of the personal renaissance because it allowed them to question why their earlier learnings caused them to develop discriminatory attitudes towards others and suppressed their liberal thoughts about peace. Their university education played a significant role in terms of how they could change their perceptions of war, peace, and violence. Nagehan explained the university's positive impact as in the following: "My university helped me to learn, question and see people's differences. The things that I heard about peace here transformed them (her abstract learnings about peace) into things that I understood and applied."

Some participants mentioned that the university offered them a safe and peaceful environment to further their ideas about peace because they had the opportunity to observe and interact with different people. Many participants mentioned that they deconstructed their previous ideas about peace, war and violence and reconstructed positive and liberal ideas using the safe and peaceful environment at the university. Mustafa mentioned: "When I came here, I redeveloped my perspective (of peace) by analyzing and synthesizing others' ideas."

New Gates for Self-Discovery and Peace with Self

Many participants mentioned that their awareness of peace, war, and violence changed because of their university courses and club activities. Through these academic and social activities, they learned about different

types of violence. For example, Busra mentioned, "I learned about what psychological violence and stalking mean first at the university in CITOK (Coordinatorship for Preventing Sexual Abuse)." Halime also said that gender studies in education class furthered "her understanding of gender issues and violence" and allowed her to "examine gender issues more specifically with her class project." In addition, many future-teachers mentioned that the university, directly and indirectly, provided pedagogical strategies to teach peace and incorporate peace-related topics in their subject area. In other words, they became aware that peace education could be included in any subject with the right pedagogical tools.

In addition to developing positive perspectives, some future-teachers mentioned that they eventually started to feel peaceful and experienced serenity when they learned more about peace, respect, and nonviolence. For example, Banu mentioned that "I have become a sympathetic person, and I started to discover myself when I changed my perspectives at the university." Rahime said, "Even though the wars in the world continued, and people were killing each other while I was studying, my university life was the part of my life where I felt so close to peace."

Their self-discovery and personal development at the university and negative experiences in the past also reformed our participants' ideas about teaching peace at schools during their professional life. Most of our participants expressed their intention to teach peace-related topics in their subject area because, as Ozan mentioned, "they need to implement something new to help new generation experience peace." Ziynet also highlighted the importance of changing the current practices by replacing negative aspects of the curriculum with positive discourse they learned in their programs: "... these concepts should be taught starting at young ages. New studies should be introduced to help the new generation invigorate peace in their lives. These studies should replace the negative things in the curriculum with positive things like peace." Although future-teachers were motivated to teach peace at schools, teaching peace seemed possible in subject areas such as social science, life sciences, Turkish language, and history. Our participants, who teach math, physics, and chemistry, particularly found teaching peace impossible in these subject areas. Only Ilayda mentioned: "Peace can be taught in all social science classes. I am a science teacher. . . Even if it is challenging, we can teach peace in any subject." Overall, future-teachers appreciated their education at the university and were grateful to have the opportunity to live in a peaceful environment. Although many mentioned that they still had some confusion about properly defining peace, war, and violence, their experiences at the university motivated them to teach peace when they started their professional teaching. Yet, their self-discovery as future-teachers did not help them equip themselves with ideas about incorporating peace in their practices in meaningful ways.

Critique of Past and Present Course Contents and Instructors

Participants were aware of how their past school experiences were influential in their perceptions of war, violence, and peace. Therefore, they hoped to change the impact of their past by finding new perspectives in their experiences at the university. Many of them shared negative experiences regarding learning violent, oppressive, and war-related narratives at their schools. Many participants often provided examples from their past school experiences to show the differences in their university and at schools. According to them, the school curricula at a different level of schooling were designed to celebrate war-related events, heroes and sometimes heroines, and conflict. Ahmet indicated: "We did not learn peace. We learned nothing about peace." Another participant, Dilsah, underlined that war and war-related discussions were normalized: "I learned war as a normal concept at school. I was not taught to question events in history."

In addition to the curriculum content, most participants criticized that their school culture indirectly supported a culture of violence compared to their university culture. They shared several narratives of how their teachers and school principal promoted a culture of violence by either using or overlooking the use of violence at the school. For example, Zeliha shared that she received a form of psychological violence from her teacher and classmates due to her teacher's reaction when she explained her political view:

I did not share the same political opinion with my teachers. When I said my political opinion, I received a negative reaction from them… I was the student representative and there was a meeting. When I went there, they delivered some political brochures… We (some of the student representatives) said that this was wrong. I was stigmatized as a member of FETO (Fethullah Gülen Terror Organization) even though I had nothing to do with it.

Many participants mentioned that they were afraid of sharing their opinions about peace-related topics and politics at schools. According to them, schools were not supporting the idea of having different opinions on mainstream beliefs. Therefore, participants mentioned that they began normalizing the vulture of violence over time. As Hatice explained: "Some students believe that violence from their teachers is normal." Participants also mentioned that there was no room left to criticize the violence because these forms of violent practices were justified by using patriotism, discipline, and political propaganda. Therefore, like Osman, many participants' reaction to the use of violence did not go further than "smiling insincerely and sarcastically," or "making small but not provocative comments."

Participants mentioned that their university experiences slowly changed their perceptions of peace and motivation to share their personal opinions. Naime mentioned: "It (university) definitely affects people. Well, I know that many of my friends got out of their families and school's ideology, and developed their own identity after attending university." Many of them mentioned that they wanted to represent positive values in their lives and when they had the opportunity to teach peace in their professional life.

Participants also mentioned that university allowed them to question their schooling experiences and their family's teachings concerning the understandings of others. They noted that they continued to behave as their family taught them before attending the university. Demir said, "I was raised in a patriotic family, but after learning that patriotism is harmful, I changed my ideas like other people around me." Simay shared that she "changed the gender messages taught in her family." Although she could not remember which class at her university caused her to change her mind, she highlighted that she had experienced a positive personal development towards being inclusive with the help of her classes, people around them, and extracurricular activities at the university.

Although future-teachers mentioned that their perspectives changed positively, they also criticized the content of the classes offered at the university. For example, they demanded learning more country-specific information to gain multicultural perspectives and thought that their classes should be more practice-based. Naz's response summarized other future-teachers' criticism about how these courses did not include adequate information to cross-examine peace-related issues with other countries:

We did learn enough about the sociology of Türkiye, but we did not get enough information about how to compare and discuss issues with other countries in Türkiye. I wish country-specific information were offered… This way, we could learn to talk about peace and peaceful relationships between communities… World citizenship should definitely be included.

Participants also stated that their professors' attitudes in applying equality and equity at the university and during courses were the reasons for changing their negative perceptions of war, peace, and violence and creating a safe environment for themselves. Mustafa said: "These people studied abroad... and benefitted from those countries… They internalized peaceful values. Therefore, they could evaluate and teach those values." University professors were keys to reshaping future-teachers' negative perceptions of peace, war, and violence that they learned in schools and their families.

DISCUSSION & CONCLUSION

Regarding future-teachers' projections of peace education practice within Turkish classrooms, the findings discussed above suggested the university as a democratic setting where the participants get to know and experience multiculturalism, tolerance, and harmony of different political, cultural, and religious ways of being and doing. The university constituted *the* place for them to experience a personal awakening and a personal renaissance to learn and experience peace. However, this awakening was mostly related to the diversity at the university community because only a few participants mentioned taking peace and peace-related courses in their teacher training programs. Their learning was prompted by their own initiative and interest to further their understanding of peace. The university, as the place of personal awakening, catered to their need for self-development, but still, several participants could not imagine having separate peace education courses to be taught at schools, nor could they think about a school curriculum integrating peace education as their schooling experiences did not allow them to conceptualize aspects of peace education in the school curricula and culture. Like the findings of the studies in literature (Deveci et al., 2008; Gurdogan-Bayir & Bozkurt, 2018; Gursel-Bilgin, 2022), our participants also supported the idea of integrating peace-related topics in other subjects such as life sciences, social studies, history,

and language courses. Different from the results of other studies, our participants mentioned that peace could easily be taught in courses focusing on social sciences, but any course in the school curricula could be related to peace Education. our participants mentioned that peace topics should be incorporated into social subjects and other courses, they connected this thought with teachers' motivations. The overarching point that our participants repetitions were related to how peace was associated with anarchy and anti-democratic values in Türkiye. The participants' projections of peace education practice as challenging in the present education system might also be influenced by the negative baggage that the word peace carries. As a result of the negative baggage that peace carries, the existing political climate, and personal experiences, they were hesitant to pioneer the implementation of peace education in their practices due to the fear of being misunderstood, bullied, and/or experiencing mobbing and oppression. This fear was imprinted in multiple layers of their understanding during their school life and due to the impact of the culture of violence dominant in the society. Thus, it is vital that teacher training programs in Türkiye not only teach peace education values but also equip future-teachers with social skills to practice peace education effectively in their lives.

The participants mostly reported positive and eye-opening examples of peace, unity, freedom, and democracy at the university, but this attempt also highlighted the negative dimension of their past experiences. All future-teachers directly experienced or witnessed different forms of violence in their past lives due to interpersonal relationships with their peers, teachers, and family members. Many of them had the opportunity to meaningfully question the structural and systematic violence embedded in their life because of the experiences offered at their university. However, they still need support in overcoming the negativity of their past experiences.

In conclusion, our study shows that universities can help their students gain awareness of systematic oppression and structural violence (re)produced by patriarchal, political, and social discourses by building friendly, peaceful, democratic, and diverse communities. However, there is still a long way to transform students as peace agents and transformative intellectuals because of the urgent need to revise course contents or offer alternative classes based on peace practices, conflict resolution, and peace values.

Statements of Publication Ethics

We declare that we obey the principles of publication ethics. The Social and Human Sciences Human Study Ethics Committee at Bogazici University approved this research project on April 4, 2019.

Researchers' Contribution Rate

The authors' collaboratively worked on each part of this study.

Researchers' Contribution Rate (You may modify this table according to your article)

Authors	Literature review	Method	Data Collection	Data Analysis	Results	Conclusion	(Other)
Ozlem Erden-Basaran	☒	☒	☐	☒	☒	☒	☒
Gulistan Gursel-Bilgin	☒	☒	☒	☒	☒	☒	☒

Conflict of Interest

The authors state that they have no conflicts of interest. All co-authors have reviewed and approved the manuscript's contents, and there are no conflicting financial interests to disclose. We confirm that the submission is original and is not currently under consideration by another publisher.

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The Impact of Starting the Day with Exercise and Sports on the Physical Education and Activity Attitude

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ABSTRACT

The present study aimed to analyze the impact of starting the day with exercise, and sports activities on the attitudes of children towards physical education and assess the views of the children, teachers and parents on this application. The study was designed with the experimental methodology that included two study groups. Quantitative data were collected from 74 primary school students (36 girls and 38 boys), qualitative data were collected from a total of 22 participants, involving 8 primary school students, 7 primary school teachers and 7 mothers.) The Physical Education and Activity Attitude Scale (PEAAS) was used to collect the data. After the study groups participated in 20 minutes of physical training and sports activities for 12 weeks, the scale was applied as a post-test to each group. After the application, three focus group interviews were conducted with children, teachers, and mothers. In conclusion, it was determined that the attitudes of the study and control group children towards physical education and sports significantly improved between pre-test and post-test. Based on the interview findings, it was determined that individuals did not have the habit of regularly engaging in sports, measures should be taken to improve the adoption of these habits by children at in early age, and the participants considered that starting the day with sports activities had positive effects.

Keywords: Physical education, sports, primary education

Güne Beden Eğitimi ve Sporla Başlamanın Beden Eğitimi ve Spora Yönelik Tutumlara Etkisi

ÖZ

Bu çalışmada, güne beden eğitimi ve spor faaliyetleriyle başlamanın çocukların beden eğitimi ve spora yönelik tutumlarına etkisi ile öğretmen, veli ve çocukların uygulamaya ilişkin görüşlerinin değerlendirilmesi amaçlanmıştır. Deneysel desenle tasarlanan çalışmada iki farklı çalışma grubu yer almıştır. Nicel veriler, deney ve kontrol grubunu oluşturan 36 kız ve 38 erkek olmak üzere 74 ilkokul öğrencisinden, nitel veriler 8 ilkokul öğrencisi, 7 ilkokul öğretmeni ve 7 öğrenci velisi anne olmak üzere 22 katılımcıdan elde edilmiştir. Nicel verilerin toplanmasında Beden Eğitimi ve Spora İlişkin Tutum Ölçeği (BESTÖ) kullanılmıştır. Deney grubuna 12 hafta süreyle, her günün ilk 20 dakikası beden eğitimi ve spor etkinlikleri uygulandıktan sonra BESTÖ son test olarak her iki gruba yeniden uygulanmıştır. Uygulama sonrası öğretmen, veli ve çocuklarla üç farklı odak grup görüşmesi yapılmıştır. Sonuç olarak hem deney hem de kontrol grubundaki çocukların beden eğitimi ve spora yönelik tutumları ön test-son test puanları arasında anlamlı düzeyde bir artış olmuştur. Görüşme sonuçlarına göre; bireylerin düzenli spor yapma alışkanlıklarının bulunmadığı, çocukların erken yaşlardan itibaren spora alıştırılması için gerekli önlemlerin alınması gerektiği ve güne spor etkinlikleriyle başlamanın olumlu etkileri olduğu görüşünde oldukları belirlenmiştir.

Anahtar kelimeler: Beden eğitimi, spor, ilkokul dönemi

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INTRODUCTION

The development of positive attitudes is a universal objective of teaching; the rationale behind this is that children with positive attitudes are increasingly likely to achieve in a specific area. From physical education and sports perspective, one such achievement might be manifested by a tendency to participate regularly in physical activity (Mortimore et al., 1988). People start moving from birth and adequately do their fundamental movement skills after birth movement is an important need with respect to health and development (Özer & Özer, 2012).

Individuals' inadequacy of movement causes health, psychical and psychological problems (Çelik & Sahin, 2013). Along with the activities done responding to needs, psychical education and sports are also activities done for fun and social interaction. Sports, alongside responding to needs to move, means gaining a statute, and it is done as an occupation that has its own rules and it involves activities like more competitions (Heper, 2012); psychical education means the education of the body through the moves (Kale, 2007).

Physical education and sports activities provide particular environments to develop physical, technical, and tactical skills, to ensure the enjoyment of playing different activities, games, and sports, and to promote lifelong fitness and good health through the recognition of the multiple values associated with the actions performed (European Commission 2015). An individual finds an opportunity to know her body and characteristics via psychical education and sports, she learns how to control herself, her action skills develop, and she has fun (Svoboda, 1994; Şahin, 2008, Çağlak Sarı, 2011; Karaman, Son, Bayazıt, Dinçer & Çolak, 2012). Psychical education and sports support an individual's development and they positively contribute to her psychical and psychological aspects while t a life with limited action negatively affects all individuals from all ages and sexes (Trudeau & Shephard, 2005). Therefore, psychological education and sports should not be ignored in education. Sport awareness should be awakened in kids from young age, and children should be motivated about doing sports (Özyürek, Begde, Özkan & Yavuz, 2015). Primarily during 0-6 age pre-school period, a lot of skills can be taught to children more easily than in following ages. Gaining basic skills in early would help children become more successful in the future. Even though running and jumping kind of actions are the most natural needs of children, for the development and support of their athletic actions, adult support is needed (Kangalgil, Hünük & Demirhan, 2006; Çelebi, 2010; Öncü & Güven, 2011). In this respect, mother-father attitude in houses and teachers' attitude in schools towards children are very important. Children who adopt adults as role models develop certain types of attitudes. Attitudes regarding psychical education and sports can be developed via family, teachers, friends, or other role model individuals positively or negatively.

Especially during the school period, psychical education classes can provide effective environments to develop positive manners (Özer & Aktop, 2003). It is recognized that special attention should be given to the education sector and its relevant role in health-enhancing physical activity promotion during childhood. Primary physical education contributes to developing a child's fundamental movement skills and physical competencies; supports the development of physical, cognitive and affective skills and behaviours; and creates lifetime physical activity patterns (Rink & Hall 2008; Bailey et al. 2009). Since almost all children attend school, a quality physical education program can reach most children (Trudeau & Shephard 2005). Positive approaches of teachers who carry out psychical education activities, guiding parents so that they would support their children, carrying out activities in regard to children's development and providing opportunities to children that they can enjoy and experience at the same time are very important (Güven, 2005; Altınkök, Vazgeçer & Ölçücü, 2013; Günsel, 2011). Psychical education activities will allow children to make the psychical activity a habit throughout their lives as these activities will encourage children to attend sports besides schools (Anderssen, 1993; Trudeau & Shephard, 2005). This way, awareness of the importance of regular appropriate physical activity will also increase positive perceptions.

Studies regarding attitudes toward psychical education and sports show that generally, children have positive approaches toward psychical education and sports after a certain age (Wersch, Trew & Turne, 1992; Tannehill, Romar, O'Sullivan, England, and Rosenberg, 1994; Subramaniam and Silverman, 2007). Gaining positive attitudes at an early age helps take precautions about tending toward certain sports branches. Habits adopted in young ages have a high possibility to last lifelong. A review of the published literature on pupils' attitudes towards physical education highlights the need to research primary school children's attitudes. It is crucial to increase the perception of physical activity and physical education and acquire positive attitudes Creating educational opportunities through physical activity is considered valuable, especially in primary school. It is seen that studies conducted are usually about the assessment of a certain situation. Thus, practices regarding getting someone to adopt a habit are important. In this study, the effects of starting the day with psychical education and sports

activities on children's approaches to psychical education and sports and also, in this respect, teachers', parents' and children's opinions about these practices are intended to be reviewed.

METHOD

This study is conducted as a pretest-posttest design. Experimental research aims to determine the cause-effect relationship. Groups are randomly created, something different is applied to the groups, and if the change between the groups is different, it is concluded that it may have resulted from the application (Johnson & Christensen, 2014). This chapter includes study groups, data collecting tools, study process, and data analysis information.

Study Group

For the experimental study, a primary school with two 3rd and 4th grades was determined by cluster sampling method, and it was approved to participate in the research. After meeting with the 3rd and 4th-grade teachers at the school, the teachers who approved that the experimental study is carried out in their classes were assigned to the experimental group, and the other classes were assigned to the control group (Baltacı, 2018). Accordingly, seventeen students in one of the third grades were taken to the experimental group while twenty students from the other class were taken to the control group. Sixteen students among one of the fourth grades were taken to experimental group whilst twenty-one students from other classes were taken to the control group. Therefore, the first study group consists of seventy-four elementary school students in (thirty-six female and thirty-eight male) in total.

In the qualitative study, eight volunteer elementary school students, seven elementary school teachers, and seven mothers as student parents, meaning twenty-two attendants in total, were brought together as the first study group, using the easy way/convenient sampling method (Baltacı, 2018). Collecting the data is conducted with three different groups that children, teachers, and mothers attended. Three different focus group interviews were conducted with teachers whose lesson hours were proper, mothers who came to drop off their children at school, and volunteers from randomly selected students from the class list. The first focus group discussion was made with seven teachers in total as two male, five female teachers of the experimental group children. At the time of data collection, one of the teachers was thirty-three, two of them were thirty-four, one of them was thirty-five and two of them were forty-five years old. Teachers have seniority of fifteen to twenty years. The second focus group meeting was held with seven parents. Two of the mothers were thirty, one was thirty-six, the other was forty-four and all of them were housewives. Three of the mothers were elementary school, one was secondary school and two of them were high school graduates. The third meeting was held with eight elementary school children as four of them were from the experimental group and four of them were from the control group. Four of the children were girls and the other four were boys. Four of them continue third grade while the other four continue fourth grade.

Data Collection Tools

Attitude toward psychical education and sports scale (PEAAS), which was revised by Demirhan and Altay (2001) was used while gathering quantitative data. Scale is five-point likert type and it consists of twelve positive, twelve negative, i.e., a total of twenty-four matters in total and a single factor. High points taken from the scale show positive attitude whilst low points show negative attitude. Points between 1-24 mean the most negative attitude, 25-48 indicate negative attitude, 49-72 indicate neutral attitude, 73-94 indicate positive attitude and 95-100 indicate the most positive attitude. The Cronbach Alpha reliability coefficient of the scale was 0.93, the intraclass correlation coefficient was 0.85, and the criterion validity correlation coefficient 0.83 was determined.

Interview questions should be prepared in detail according to the type of interview (Karasar, 2005). In line with the aim of the study, a pool of questions was created for the semi-structured interview form by scanning the literature. The researchers reviewed the questions and arranged them following the study group, and a draft form was created. The Opinions of five different field experts were taken to ensure the internal validity of the created form. Experts were asked to evaluate the interview questions in terms of their suitability for the research, and clarity and make suggestions about changing, correcting or removing the questions if necessary. A pilot study was conducted with a small group after the corrections were made according to expert opinions. In this application, the clarity of the questions and whether the answers reflect what is expected from the questions were evaluated, and the interview form was given its final form by making changes in the questions that were thought to cover each other. Internal validity in qualitative research is about whether the researcher can measure the data he wants to measure with the tool or method he uses (Yıldırım & Şimşek, 1999). The researchers concluded that the interview

questions could provide the desired data, and the data collection process was started. Open-ended questions about psychical education and sports are in the form. There was a total of 9 questions related to sports. In order to examine the appropriateness of the questions contained in the form for the research, the validity of the scope was provided by obtaining opinions from three experts in the field of physical education and child development. Sentences with incomprehensibility were corrected following the opinions, then the gender, age, profession and educational status of the participants were added, and the form was made available for application.

Data Collection and Analysis

PEAAS was used as a pre-test for the experimental and control group. For twelve weeks, each and every day's first twenty minutes of psychical education and sports activities were conducted on the experimental group, and later on, PEAAS was conducted again as posttest for both of the groups. In analysis of quantitative data, t-Test was used. Open ended questions in the interview form were asked to attendees and their answers were recorded. Each t focus group interview lasted about forty-five minutes. Later, these recordings were inscribed, and the answers to the questions were brought together. Content analysis was used in this part of the study. Content analysis refers to a set of carefully and systematically carried out operations that involve the rigorous analysis, examination, and verification of the content of written data (Cohen, Manion, & Morrison, 2007). The primary purpose of content analysis is to reach the concepts and relationships that can explain the collected data. The collected data must first be conceptualized, and then the data must be organized logically according to the emerging concepts and the themes that explain the data must be determined accordingly (Yıldırım & Şimşek, 1999). In content analysis, the researcher primarily creates categories related to the research subject in the analysis and then divides these categories into sub-codes (Özdemir, 2010). For this reason, the subject of the study includes categories such as regular sports, people's avoidance of sports, the benefits of sports, the age of sports, the types of sports that children can do, encouraging sports, making children do sports. Physical education and sports evaluation were created in the primary education curriculum, starting the day with sports activities categories. The researcher then counted the words or sentences falling into these categories in the examined data set.Since more than one answer was given for some questions, only frequencies are presented in the table created. As a result of focus group interviews, data obtained were gathered from titles that were created as the basis of questions on research. In order to ensure data validity, direct quotations from the opinions of the participants were included. Each of the attendees was given a code. For example, Code EO11 represents the male teacher, BO33 is the female teacher; A1is the mother number one, CK1 girl number one and CE2 represents boy number one.

Statements of publication ethics

In this study ethics committee approval from Karabuk University Social and Human Sciences Research Ethics Committee (decision dated 21/09/2016 and numbered 2016/05) and Karabuk Governorship Approval were received.

FINDINGS

In this section, findings of quantitative and qualitative data were discussed as tables and were interpreted.

Quantitative Findings

Table 1. Experimental and Control Group PEAAS pre-Test and Post Test Points t-Test Results

	Group	N	$\bar{x}$	S	t	p
Pre-Test	Experimental	33	72,78	7,55	0,493	0,623
	Control	41	71,39	14,78		
Post- Test	Experimental	33	74,51	6,51	-0,138	0,891
	Control	41	74,70	5,45		

When Table 1 is analyzed, it is seen that there is no significant difference between the points of PEAAS pre-test and posttest of experimental and control group students (p>0,05). According to this, one can say that both in the beginning of the practice and after it, experimental and control groups' attitudes toward sports are similar.

Table 2. Comparison of Experimental and Control Group's PEAAS Pre-test and post Test Points

	Group	N	$\bar{x}$	S	t	p
Pre-Test	Experimental	33	72,78	7,55	55,330	0,000*
	Control	33	74,51	6,51		
Post-Test	Experimental	41	71,39	14,78	30,911	0,000*
	Control	41	74,70	5,45		

**p<0,001*

When Table 2 is analyzed, in PEAAS pre-test and posttest comparison, both experimental and control group children have a significant difference between their pre-test and post-test points (p>0,001). In both groups, students' PEAAS points have increased. According to this, psychical education and sports activities implemented on the experimental group have a significant effect on developing positive attitudes. In the control group, one can say that students' psychical education and sports attitudes have increased considerably in elapsed time. In both groups, children's attitudes toward psychical education and sports have increased from neutral attitude to positive attitude.

Qualitative Findings

As a result of the content analysis of focus group interviews, data obtained were gathered under " Opinions about doing sports regularly", "Opinions about avoiding from doing sports", "Opinions about the benefits of sports", " Sports age and sport types that children can do" "Sports Encouragement and things can be done to get children to adopt sports", "Assessment of psychical education and sports in elementary school syllabus" and "Opinions about starting the day with sport activities" titles that were created on the basis of the questions in the current research.

Opinions about Doing Sports Regularly

Under this title, attendees were asked whether they attend sport activities and also its duration. The frequencies of the answers are presented in Table 3.

Table 3. The opinions of the participants about attend sport activities and its durations

		Teacher (f)	Mother (f)	Children (f)
Availability of participation in sports events in everyday life	Yes	3	-	8
	No	3	7	-
Duration of participation in sports events (for the answer yes)	Whenever Possible	3	-	4
	Everyday	-	-	2
	Weekend	-	-	1
	Once a week	-	-	1

As seen in Table 3, the question of whether they participated in sports activities in daily life was answered by two males, one female, three teachers in total answered this question as 'Yes'; the other three teachers expressed they did not do sports much. EO1, who said he/she does sports, said," I try to walk with my family at certain times. Because of work, we make one or one and a half hour to walk at weekends" EO2 said " *Badminton and football. During the time in school, we do it necessarily with children*." and BO5 said " *There is no day that I do not walk. Every day I walk for half an hour while coming to school and going from school. I do not do any other sports. However, that is it, there is nothing more"* and BO4 said *" I do not do sports, but I would like to have it as a habit. It is too much for me now to start*.". According to this, half of the teachers do sports as they find the opportunity and the other half do not do sports and do not have regular sport habits.

All the mothers expressed they do not do sports regularly. A1 said, " *I do not do any sports. I have no time to sit due to house works anyway. If I could do, it is really cool but unfortunately, I have no opportunity. But I like to walk while going somewhere.*", A4 said, " *No not, I do not do sports much. Sometimes I go to school with children. It lasts approximately ten minutes. If you walk fast, it lasts five minutes*." and A7 said, " *I did sports regularly after giving births. Now, I stopped. I only go to school three times. It lasts ten minutes with a fast walk.*". According to this, one can say that mothers qualify walking from home to school activity with their children as sport, they do not have a special sportive activity.

All the children expressed they do sports. Their answers were as follows: CK2, " *I do sports while going to swimming one time a week for twenty minutes*." CE1, *" I do sports by doing push-ups and tumbling until I sweat at home*.", CE3, " *Every weekend, I play two hours football, basketball and badminton sports*." and CK4 " *Once in*

a day, I do sport as an exercise for half an hour after I finish my homework." Accordingly, one can say that children do sport-oriented activities in their daily lives.

Opinions about Avoiding Sports

Under this title, attendees were asked about the reasons for avoiding sports. The answers were given, and their frequencies are presented in Table 4.

Table 4. The opinions of the participants about doing regular sports*

	Teacher (f)	Mother (f)	Children (f)
The difficulty of living conditions	1	-	-
Intensity of work/household chores	3	1	2
Familial causes	1	1	-
Economic reasons	1	-	-
Development of technology	1	1	-
Lack of sports habits	1	1	2
Seeing sports as unnecessary / being lazy	1	1	2
Seeing sports only as a weight loss tool	1	-	-
Unsuitability of seasons/weather conditions	-	1	-
Lack of safe sports fields	-	1	-
Follow television programs	-	1	-
Not knowing the benefits of sports	-	-	2
Thinking that exercise will be harmful	-	-	1

** More than one opinion has been expressed.*

As can be seen in Table 4, the participants made the following comments about the reasons that prevent people from doing regular sports: EO1 "We live a very intense life as society. Workload, family reasons, negative things in daily life, family's living conditions avoid doing sports." EO2, " *Opportunities were not quite convenient before but there were activities done in life. Now, possibilities increased, technology increased. We can sit on the desk till evening. Technology restricted our possibility to move. Due to working conditions, doing sport chance cannot be found. At the same time, it is not done because there is no habit. I have friends working at eight in the morning until eight in the evening, how can he do sports after that hour?* " and BO3, *"People may not need to do sports. Thin ones can say I am thin anyway. Working people think they get very much tired at work. Doing sports seems only necessary to become thinner. More than being healthy, it is to become fit or thin*.".

A1 from mothers, *"Excuses are found for everything. It is something like I do not realize how it became evening. for example, I go home, tidy up, prepare a meal, swipe the house, and wait for children's homework to finish. Later on, my partner comes from work, I prepare a meal for him, I look at the time and it is very late. You are in constant move in the house, but it is not sports. Winter circumstances pose an obstacle as well, we cannot go out and do walking kind of sports."* A3, *"People became clumsy as they stayed at home. We got used to do the same stuff, like robots. We do not set aside time for ourselves. It may be due to lack of sport areas. There is no safe place to do sports."* A4, *" Television prevents it. We have time to watch series or so, but we do not do sports because of watching series. Sometimes I watch television programs, and I make the same moves. Television is sometimes an obstacle, sometimes it promotes."* A7, *" Devoting special time to sports is not in culture, I think. People stare at the ones doing in a weird way, people got used to it recently. We were not a society like this before, we were active. Technology pushed us to laziness a bit, too."* expressed as such.

Children expressed the reasons preventing people from doing sports as such: CK1, *" They think they are healthy because they eat food, and also probably, they are being lazy."* CE1,*" I think they do not love sports; they do not think sports does good." CE2, "They think sports is tiring and it does bad to them. "* and CK4 *" They do not do sports because sports are boring, and they do not have free time."* According to this, teachers and mothers see changing life circumstances, work intensity, television and technological developments, society's cultural structure and various personal reasons as obstacles to doing sports; whilst according to children, adults do not like doing sports, they find it boring, and they are lazy to do so as reasons.

Opinions about the Benefits of Sports

Under this theme title, the question was: "How people do sports according to you, why?". The frequency of the answers given is presented in Table 5.

Table 5. The opinions of participants about the benefits of sports*

	Teacher (f)	Mother (f)	Children (f)
Ensures good health	7	6	8
Feels fresh/opens the mind	2	-	1
Improve muscle	2	-	-
Provides regular functioning of the body	-	1	-
Allows stay vigorous	-	1	2
Relieves stress	-	1	-
Make strong	-	-	1

** More than one opinion has been expressed.*

As seen in Table 5, all of the participants answered that people should do sports to be healthy. In this regard, while EO2 and BO3 generally implied that people should do sports to be healthy, and to feel energetic, BO1 and BO4 looked at the issue from students' perspective. BO4, " Especially, it would be good to do things for first grades to develop their small muscles. They get tired very fast and do not want to write in the first grade." and BO1," children's back muscles are very weak, their way of sitting positions affects their back and neck muscles. When they start elementary grade especially small muscles are very weak." They stated that for the development of children's small muscles, neck and back muscles, they need to do sports.

Mothers stated that they know doing sports has benefits as well. A2,*" For our whole body's regular functioning, for us to be more energetic, sport is really beneficial."* and A6, *" For health, walking is really fine for stress."*

All of the children stated that they do sports because they believe in sport's benefits. They expressed as such: CK2,*" It ensures being healthy."* E3,*" People should do sports. They become energetic and lively. If some of them have eyes not open, then they have never done sports, if some have eyes very open, very glowing, then they have done sports early in the morning."* and CK4, *" One becomes both healthy and strong, sport opens the mind."* Therefore, it can be said that all of the attendees have the same opinion as sports are needed to become healthy.

Sports age and sport types that children can do

Under this title, attendees were asked what ages are suitable to do sports and its reasons. The frequency of the answers given is presented in Table 6.

Table 6 . Opinions of the participants about the age of sports and the types of sports that children can do*

The age of starting sports	Teacher (f)	Mother (f)	Children (f)
In childhood	7	6	8
At as young an age as possible	1	2	-
Kindergarten/4-6 years old	2	2	1
At school age	1	1	-
After the age of 15	-	1	-
Before entering puberty	-	1	-
After 6-7 years	-	-	2
What kind of sports can children do			
Swimming	1	-	1
Athletics	1	-	1
Gymnastics	1	-	-
Sports played with a ball, such as football, volleyball, basketball	2	3	4
Table tennis	1	-	1
Badminton	2	-	1
Sports without much physical contact	1	-	-
Body exercise/kakin sports	1	2	1
Muscle building sports	1	-	-
All sports	1	-	-
Unfamiliar, interesting sports	-	1	-

** More than one opinion has been expressed.*

As shown in Table 6, teachers think that not starting sports at a young age is one reason that prevents children from doing sports regularly in the future. In this regard, EO1,*" When I look at the families' socio-economic status, it must be started at young ages as early as possible. I believe leading children to any sport branch latest at seven or eight years of age would contribute to their lives*." BO3,*" In every age, sports should be done, every age has their suitable sports for them. Walking is a suitable sport for every age, there are sports suitable for children as*

well. At every age sport should be done. Sports can be started during school era or in kindergarten at four-five years old." and EO2,*" Children's psychological anatomy is important. In the Far East, they start at four-five years old to gain experience. At further ages, becoming professional can happen in his/her strong suit. For that matter, related to that, there should be branching out at schools after secondary, and elementary school finishes."*

Mother expressed their opinions about doing sports as: A1, " *It needs to be started after fifteen years old. There is no need before that as she /he is already active, he/she slows down after fifteen, that is why it must be started during these ages."* A2, *"Until school period, the child is already active, since there is a certain action capacity at school, I think it must be started regularly from first grade. It would be better in the future for child. It is always good to start everything early."* A4, *"It is always good to do. The early he/she starts the better, in following ages, it must be in every age."* A6,*" As the twig is bench, so is the tree. If he/she starts early, this child develops faster and his/her ground would be more beautiful. I think, age five-six is very convenient. There may be things done to him/her for bone and muscle development."* and A7,*" It depends on the sports he/she will do. For example, if she/he does ballet, a child cannot start doing it at fifteen. Depending on his/her ability and desire, what she/he chooses, his/her age can be younger. Before the child reaches puberty, I think she should be canalized to sports or to an artistic area."*

Four of the children stated that they should start doing sports after six or seven years old. CK1,*" Young or old, everybody should do sports. The old would become healthier, the young get into form as they wish."* CK2,*" I think sports should be done at every age Sports is healthy in every age*. and CK3, *" I think they should start after seven, before that, they should not do it as they are young."* and CE3,*" I think they should start between four to five and do it in all ages. My sibling is four years old, he started at four and continues. Somersaults at home and runs with the ball."*

According to that, the participants have an idea about the age of starting sports based on their own experiences. Teachers and mothers think one should start sports as young as possible and for the talented ones to become athletes, they should lay emphasis on it especially after six-seven years old. Children think doing sports is equal to being active.

EO1 expressed on doing what kind of sports would be appropriate,*" Swimming, athletics, gymnastic, badminton, football can be. Badminton is a bit hard sport; they can start in third-fourth grade. Sports like football that, they are talented and appears in young ages."* EO2,*" Children can do sports activities in elementary school level especially the ones psychical contact is not much, not hurting each other kind of sports (karate, handball vb. may be harmful), calm sports and exercises."* BO1,*" It must be started from the simplest exercise, later on it should be continued. Table tennis, badminton and muscle building posts can be."* BO2,*" Children like activity games more. Not action but playing kind of such as match."*, BO3,*"As long as the environment is convenient, they can attend any kind of sports activity. Aside from weightlifting etc. Especially, they like games with the ball. It can be dodgeball, football, volleyball."* and BO4,*" Especially, it would be suitable for kids to do back muscle improving sports."* Therefore, attendees expressed their opinions as stated.

A1 from mothers, *"Generally speaking, running kind of exercises are suitable."* A3,*" It can be areas where they can consume their energy. Enthusiastic and intriguing sports can be. Sports they do not know about and interesting sports can be."*A5,*" Decisions should be made by looking at their needs and according to children's interest."* A6,*" Tennis, basketball, running, badminton kind of things are suitable sports"* expressed as such. And children, related that matter, sorted the sports suitable for children as running, tumbling, exercising, volleyball, basketball, tennis, swimming, badminton, and football.

According to this, one can say that teachers and mothers hold the opinion that children can do sports harmless and proper for their age and for their level of development, whilst children hold the opinion that they can do sports they know.

Sports Encouragement and Things Can be Done to Get Children Adopt Doing Sports

Under this title, attendees were asked what should be done to encourage people to do sports. The frequency of the answers given is presented in Table 7.

Table 7. Suggestions of the participants for inculcating sports habits in children *

	Teacher (f)	Mother (f)	Children (f)
To raise awareness of individuals	2	-	6

To encourage sports activities/actors by showing them	2	2	3
Take advantage of the game	1	-	-
Making time for sports/continuous exercise	1	1	3
Getting professional support for playing sports	3	1	-
Providing family support	2	2	1
Directing children to non-school sports activities/courses	1	1	-
Creating suitable sports grounds	3	4	-
Creating free/living-friendly sports fields	-	2	-
Being a model as an adult (parent-teacher)	2	5	-

** More than one opinion has been expressed.*

As seen in Table 7, two male teachers expressed that individuals' awareness should be heightened, two of them expressed that it must be encouraged and it must be helped to become visible, one of them expressed professional support should be taken and the other one expressed that games should be used.

In this respect, they expressed their opinion as: EO1,*" Since we were an agricultural society before, sports were being done perforce without knowing. Now, with technology's development, people gathered in cities and they were kept out of this. It seems a bit hard but at least time should be taken for small sports at certain times. It would be beneficial if people add action into their lives. These should be brought to people by informative works, and public service announcements. It is a bit hard subject, but it can be done."* BO3,*" More professional support should be received to do sports. It can be a psychical education teachers. It is good to have psychical education teacher at secondary school during elementary school, we handle it more like a game. It is mentioned as game and free time anyway. Parent's support on this matter is important. Children come short at school, they can be lead to different courses outside. Since we have not got an education, there is team plays, competing games and competitive game kind of things occur. It is not as leading to sports generally."* and BO4,*" If families push children, they would have to do it too. I mean, they affect each other.*"

Mothers indicated that doing sports does not seem nice in society, there is need to have indoor sport areas to do sports. A1, A4, A7, expressed their opinion as follows: A1,*" Doing moves on sport mechanics in parks does not seem pleasant. Open space, cars pass by. You are always in the limelight. We do sports faintheartedly. If there is an indoor place, I will take my child, too.*" A4,*" If it was in an indoor place, women get used to this kind of activities as well. Instead of going home with our child, we would go there for an hour. We spend time."* and A7,*" For people on our income standard, there should be free places and they should be organized according to people's lifestyle. There should be an indoor place embracing everybody. For men, working hours do not match with this. How many hours does a worker work? When will he do sports? It must be free for them too. Economics and time should be arranged in accordance with sports."*

Children stated people need information and encouragement. CK2 expressed this situation as,*" I think if we make someone watch someone doing sports, he will want to do sports too."*, and CK3 said, *"if we talk about sports' benefits, he would do sports."* and CE3 noted,*" I bring my mothers to running waking them up, if they do not, I insist, they accept."* Accordingly, teachers hold the opinion of their needs role models and supportive families to encourage individuals on sports as mothers think if there is private convenient places for them and children holds the idea that people would do sports if the benefits of it are known.

Attendees were asked especially what can be done to bring sports habits to children. In this respect, teachers hold the idea that especially families' and individuals' awareness should be ensured, and experts should give sports education in the field. On this subject, EO1,*" families should take care of their children. When a child does something, family's presence, family's smile, encouraging her would help child to be aware of her powers. Children are doing sport trainings, attending tournaments. Even though they do not win, it is important to tell them that it is effective for their future lives, and to give them support in regards of encouragement. Swimming pools can be used, families can lead children to different directions by spending time with them. Family creates children's' point of view. Little supports given to children help them to have a totally different point of view in the future."* BO5,*" I attend to class in game time, too. But first I say that I define the class first then we can play. Unavoidably, class ends before starting the game. If someone else comes in the class I will have to step back doing."* expressed as such.

Mothers indicated that adults should be models. A2 expresses this situation as, *" It would become habit if it is done obligatory at schools."* A4,*" If they do it with friends, it is more different for children. If teachers say it, they would accept sports as beneficial and do it. Teacher comes before mother or father. What teacher says comes*

righter." A7,*" He needs to see in the family. 'Bird builds up the nest that it sees' say our ancestors. Psychical education classes could be more active."*

Children expresses their opinion as CK1,*" We can bring children to running every morning for them to get used to it."*, CE1,*"Always they should watch sports and turn off the television and do the same."* CE4,*" They would become accustomed if they do it once a day."*

Generally, on the subject of children playing sports as a habit, teachers and mothers think families should become models for children and encourage them whilst children think sports would turn into a habit if it is done regularly.

Assessment of Psychical Education and Sports in Elementary School Syllabus

Under this title, attendees were asked if they find psychical education and sport classes are sufficient and its reasons. The frequency of the answers given is presented in Table 8.

Table 8. Evaluations of the participants about physical education and sports lessons in primary school curriculum

	Teacher (f)	Mother (f)	Children (f)
Weekly class hours are sufficient	7	6	8
The courses are not taught in accordance with the purpose / the quality is insufficient	7	6	-
Not enough physical education teachers	1	1	-
Instead of open space, it is replaced by classroom games	1	-	-
The physical environment of the gym and classroom is inadequate	1	1	-
Processing of other theoretical courses in physical education	-	1	-

***** *More than one opinion has been expressed.*

As seen in Table 8, all of the teachers stated that five hours of class is set for psychical education and spare time, and it is enough, however, there are problems because lessons were not taught in accordance with the purpose. Regarding this EO1, *" We have not got problems about psychical education classes as class hour, but it is gappy regarding quality. If psychical education teachers attend the class different benefits can be taken. Enough for the hours, there is problems about teacher. Classroom teachers usually skip this hour by plays, more amateur."* EO2, *" Formally, it seems five hours, but I do not think teachers do it accordingly.", BO2," It is enough for the classes as it is five hours in a week, but it is debatable if it is being implemented. Just for fourth and fifth grades, two hours a week is limited."* and BO3,*" In fact, there are five hours, which is enough. Means one hour a day. When it is not summer, we cannot do it outdoors, but we play games in the class. Generally, we put it on the last class. In the classroom, we play calm games such as night and day, hot and cold etc. or I let free, I give them homework. Our sport saloon and classroom environment are not wide enough. Due to weather conditions, we cannot go out as well."* expresses as such.

Mothers stated content is not sufficient even though the class hours are enough. In this regard, A1, *" I know it as it is done five hours a week if it is done, it is good. I think it is enough to do it one hour a day."* A3,*" There must be a sport saloon for sure. Class hours are enough but places to use these hours are limited. There should be places other than garden and classroom."* A4, *" Psychical education classes are not given enough, it is not being done. They do not see psychical education as lesson. When 'psychical education' is said to children, they say 'we read books or solve math problems. That is why we cannot make children love sports."* and A7, *" Lesson hours are enough but lessons should be given wholly and not classroom teacher but branch teacher should attend lesson which is one hour a day"* expressed as such.

All the children stated that they find psychical education class hours enough, which is one hour a day. According to this, it can be said that even though teachers and mothers see psychical education class hours as enough, they believe that the class is not taught in accordance with its purpose.

Opinions about starting the day with sport activities

Under this title, attendees were asked about their opinion to start the day with sports activities in every morning. All of the teachers gave positive feedback regarding this subject. There answers included the following: EO2, meaning the project conducted,*" This thing you do, sixty-seventy years old people do, walking very early in the morning. But, this habit should be developed from childhood."*, BO5,*" Children are locked in the house due to*

circumstances. There is no environment to play. Which site has playgrounds? I thought when we allow time for sports, they would stay behind their classes, but it has not happened at all." BO4,*" If they start the day with psychical education, they would dispose their energy, and be calmer. For example, we have students with behavioral disorder. It would have big effects to calm them down a bit more."* and teacher of the children in experimental group BO3,*" It is very good to start the day with sport activities. Children came to school with an excitement every morning. They enjoyed much. When I attend the class in second hour, I met a more sobered class. But now, if they say, 'make the first hour psychical education', I cannot. Weather conditions are not convenient anyway. I teach the lessons in second class hour, I used to do life sciences class then breakfast then math. That two months long period was very productive in terms of my classes. Children were starting the class as enjoyed and woken up from sleep. I did not see a visible class success effect since there were no exams. But it had a positive effect in terms of class attendance definitely."* expressed as such. Regarding this subject, EO2,*" If informing is done at each school, branching is provided according to children's desire and physical structures, I think we would bring up more conscious individuals both in sportive matter and life. It is not something can be done with school per se. We unavoidably have to postpone sportive activities due to intensity. Our friends and colleagues come to school for sports at weekends. It cannot be done without a sacrifice. Branching would be good. It would be very good if the sports suitable for children's psychical structure were determined, families are informed. Not only about school but we have problems enough and unwillingly, we have to postpone sportive activities. Syllabus becomes priority. Our friends who want to make children do sports come to school at weekends as do sportive activities voluntarily."* and BO3,*" I wish psychical education teachers can attend the class in elementary school. It can be very helpful. We cannot be sufficient in many things. Our information level stays on a certain level, we try to suit the program. For it to be more serious and toned, it can be in company with psychical education teachers. Obesity increased in children anyway, inactivity increased. Children are in front of the computer most of the time."*

All of the mothers stated positive opinions about starting the day with sports. They expressed their opinion as following: A2, *"Children stay awake if sport is done regularly at schools. If possibility provided for housewives, sports is done."*, A3,*" Practice was very good in here. More yield would be taken if it was continued. It must be sports first.*" and A6,*" If sports was given weight as classes were given weight, maybe we would not be like this. Sports will be better in terms of our children.*"

All of the children stated positive opinion about starting the day with sports. In this subject, CK2,*" I think it happened very beautiful but ended in short time. I wish it would continue."*, CE1,*" It made me feel healthier. It made me feel strong. Just like I do here every morning, I started doing it at home too."* expressed their opinion

According to this, it can be said that teachers hold the opinion that one of the factors on sustainability of sport activities is psychical education teachers should attend the psychical education classes. Generally, all of the teacher, mother and children attendees hold the opinion that there are positive effects of starting the day with psychical education and sport activities.

DISCUSSION, CONCLUSION & SUGGESTIONS

This study aims to evaluate the effects of starting the day with physical education and sports activities on children's attitudes towards physical education and sports and evaluate the views of teachers, parents, and children about the practice. According to the results obtained from the study's quantitative data, there was a significant increase in the children's physical education and sports attitudes in the control group between the pre-test and post-test scores. According to the results obtained from the qualitative data, it was seen that the participating mothers and teachers did not have regular sports habits. In addition, the participants attributed not doing sports to factors such as workload, being lazy, and watching television. However, it has been determined that they think it is necessary to do sports to be healthy, that role models are essential to encourage sports, and that starting the day with sports activities has positive effects. Generally, lack of information, irregularly doing sport activities, and not providing suitable areas may cause insufficient move in children (Şimşek, 1998). For this reason, both regular daily activities and psychical education classes present in syllabus may have caused children’s behavior to change positively towards psychical education and sport. Leading children to sports in young ages is important for them to continue their sports habits in future years (Kerkez, 2012). In this study, the practice done with elementary school third and fourth grade students may be suggested to be applied in earlier years by experts in psychical education.

It was determined that half of the teachers participating in the study played sports as much as possible. In contrast, half did not play sports and did not have regular sports habits, mothers evaluated the activity of walking from home to school with the child as a sport, and did not engage in any special sports activities, and the children engaged in sports activities according to themselves. Teachers and mothers see changing living conditions, workload, television and technological developments, the cultural structure of society and various personal reasons as obstacles to doing sports; On the other hand, it has been determined that children do not like to do sports, but find it boring and see being lazy as the reason. In his study, Hamilton (2002) revealed that children need comfortable spaces, especially in order to play games involving physical activity. However, some reasons (media use, unplanned urbanization, changing living conditions, etc.) have caused children's lifestyles to become more sedentary in recent years. An inactive lifestyle is a source of worry because children develop by moving, like Piaget, Montessori, and other scientists draw attention (Steffen, Dai, Fulton & Labarthe, 2009). Movement is quite important for the physical development of a child. Therefore, extracurricular sports games that will meet movement and free up energy are very important.

In the study, it can be said that all participants thought it necessary to do sports to be healthy. Teachers and mothers think that it is necessary to start sports as early as possible and that special attention should be given to talented people after the age of 6-7 in order for them to become professional athletes. On the other hand, it was determined that children thought of doing sports as synonymous with being active. The individual learns a role behaviour by observation, imitation, and modelling. Attitudes and behaviours get affected by opinions. Even though adults do not do sports, positive opinions can be reviewed as essential steps to support their children. This study states that teachers and mothers think children can do sports that will not harm them and are suitable for their age, interest, and level of development while children think they can do the sports they know about. Psychical activity and sports choices can be changed according to age, gender, socio-economic level and country of residence (Hoffman & Harris, 2000). In a study by Frömel, Formánková & Sallis, girls between the ages of 10-14, swimming, dancing and skating, men preferred swimming, sports games and skating.

According to the study, it has been determined that teachers believe they need positive role models and supportive families to encourage individuals to do sports, that mothers will do sports if there are particular areas suitable for them and when the benefits of sports for children are known. In general, it has been determined that teachers and mothers should be models and encouraged by the family when children acquire sports habits, while children believe that sports can become a habit if it is done constantly. According to the learning process, the individual learns an appropriate role behaviour from significant others through observation, imitation, and modelling. This process results in the teaching and learning skills, tendencies and knowledge that enable people to function in society by interacting with others (Bandura, 1977). Determining and understanding the correlates of school children's participation in physical education activities is critical for encouraging children's current and lifelong participation in physical activity.

It is suggested that the social and physical environments in which children spend time have a substantial impact on their physical activity levels (Bower et al., 2008; Dowda et al., 2004; Finn, Johannsen & Specker, 2002). Overall, research on children's interest in sports has shown that active parents are more involved in their children's sports than passive parents (Anderssen & Wold 1992; Colley, Eglinton, & Elliot, 1992; Freedson & Evanson 1991). In addition, it has been stated that parental support has a positive correlation with the pleasure and interest the child receives while doing sports (Power & Woolger 1994; Weiss & Hayashi 1995).

The study determined that although teachers and mothers found the class time sufficient for physical education, they believed that the course was not processed in accordance with the purpose. Primary Education Institutions (Primary School-Middle School) Physical Education lesson is seen as 2 hours in the weekly lesson schedule to be applied in the 2018-2019 academic year (https://ttkb.meb.gov.tr/www/haftalik-ders-cizelgeleri/kategori/7). Achieving the targets set for Physical Education lessons is directly related to the weekly number and duration of the practices, the facility used, the area and the presence of a sufficient number of qualified physical educators (Özdemir, 2000). Taşmektepligil, Yılmaz, İmamoğlu, Kılcıgil (2006) found in their studies that instead of psychical education teachers, classroom teacher attends psychical education classes of elementary school fourth and fifth grade and weekly psychical education class hour is not enough to reach general and special aims of this lesson. To increase physical education classes' functionality, one can say that regulation about class hours should be made, branch teachers should attend classes, and activities out of purpose should not be done.

It has been determined that one of the necessary factors in the sustainability of sports activities of teachers is that the Physical Education teacher should attend the Physical Education lesson, and in general, all teachers,

mothers or children think that starting the day with physical education and sports activities has positive effects. For bodily health, the body must move. Positive attitudes towards physical education and sports will effectively do sports activities frequently, and regular sports practices from an early age will be effective in gaining habits. For this reason, it seems essential to gain the habit of doing sports and knowing the benefits of sports for the individual's health. Doing sports activities at a particular time of the day will become a requirement, just like satisfying the need to eat at certain times. Thus, the habit of playing sports will be acquired, sports can be adopted as a way of life.

In this study, starting the day with sports activities was done with primary school students. In a different study, experimental studies can be conducted with preschool children. Sports activities, including teachers and adults, can be planned and their effects can be examined.

Special Thanks

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Conflict of Interest

The authors declare that there is no conflict of interest.

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Examining the Roles of School Principals in the Emergency Distance Education Process

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Abstract

The purpose of this research is to examine the roles of school principals in the emergency distance education process. The research was designed as a qualitative research, and the criterion sampling method was used in the study conducted in Batman during the 2020-2021 academic year. The study group consisted of forty school principals who work in primary and secondary schools and have at least one year of management experience. A semi-structured interview form was used as a data collection tool. Research data were collected via e-mail. The data obtained from the study group were subjected to content analysis within the framework of the sub-objectives of the research. According to the results of the research, school principals carried out informing and preparatory activities in their schools during the emergency distance education process. In this process, they conducted planning and training activities for teachers, encouraged and communicated with them, and provided them with an adequate environment. They also introduced the process and carried out educational activities for students and informed parents about it. Additionally, it was revealed that school principals' approaches to emergency distance education in the Covid-19 process were categorized into three different ways: successful, unsuccessful, and inadequate.

Keywords: Covid-19 Process, emergency distance education, school principals.

Acil Uzaktan Eğitim Sürecinde Okul Müdürlerinin Rollerinin İncelenmesi

Öz

Bu araştırmanın amacı acil uzaktan eğitim sürecinde okul müdürlerinin rollerinin incelenmesidir. Araştırma, nitel araştırma olarak tasarlanmıştır. 2020-2021 Eğitim öğretim yılında Batman ilinde gerçekleştirilen araştırmada ölçüt örnekleme yöntemi kullanılmıştır. Araştırmanın çalışma grubu, ilkokul ve ortaokullarda görev yapan ve en az bir yıllık yöneticilik kıdemine sahip 40 okul müdüründen oluşmaktadır. Veri toplama aracı olarak yarı yapılandırılmış görüşme formu kullanılmıştır. Veriler elektronik olarak toplanmıştır. Çalışma grubundan elde edilen veriler araştırmanın alt amaçları çerçevesinde içerik analizine tabi tutulmuştur. Araştırma sonuçlarına göre, okul müdürleri acil uzaktan eğitim sürecinde okullarında bilgilendirme ve hazırlık çalışmaları gerçekleştirmişlerdir. Bu süreçte öğretmenler yönelik olarak planlama ve yetiştirme çalışmaları yaptıkları, onları teşvik ettikleri, onlarla iletişim kurdukları ve onlara ortam sağladıkları; öğrencilere yönelik olarak süreci tanıttıkları ve eğitim faaliyetleri gerçekleştirdikleri ve velilere yönelik olarak da süreci tanıttıkları belirlenmiştir. Ayrıca okul müdürlerinin Covid-19 sürecindeki acil uzaktan eğitime yaklaşımlarının başarılı, başarısız ve yetersiz olmak üzere üç farklı şekilde olduğu ortaya çıkmıştır.

Anahtar kelimeler: Covid-19 süreci, acil uzaktan eğitim, okul müdürleri

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INTRODUCTION

The developments resulting from the coronavirus (Covid-19) epidemic have triggered the start of a new era in Turkey, as in the rest of the world. Signs that there will be certain changes in every aspect of life have begun to emerge. A period where interaction and relations in human and social life, production systems, service offerings, and many other areas will be provided by electronic means, has begun to be experienced (Erdoğan, 2021). With the emergence of Covid-19 and its impact on the whole world in a short time, changes have taken place in traditional roles. The effect of the virus has caused significant changes in the functioning of corporate systems, along with daily life. In this process, countries have had to organize their education systems in line with new conditions. Like most countries, Turkey has been adversely affected by this process and has rearranged its education system according to these conditions. In this direction, education and training services were carried out with emergency distance education. (Demir & Özdaş, 2020). Distance education is a planned activity based on theoretical and practical knowledge. However, emergency distance education is different. In a crisis situation, it involves solving problems with all available resources, including online and offline methods. In this study, the concept of emergency distance education was used in this context.

Emergency distance education is one of the largest systems offered by modern information technology. Thanks to emergency distance education technology, teachers and students have the opportunity to access educational activities without being directly in the presence of each other (Verduin & Clark, 1991). Simultaneously, the freedom of time and space it offers, variety of tools and methods used, provide advantages (Katane et al., 2015). Educational objectives through emergency distance education can often be achieved in the shortest possible time with minimal effort. As teachers and students gain experience provided by experts in various fields of knowledge, it is easier for them to develop themselves and achieve success (Igbokwe et al., 2020). Emergency distance education has been used for its features such as being an easily applicable method and ensuring the sustainability of education during the Covid-19 epidemic (Demir & Özdaş, 2020). Emergency distance education also indicates the efforts of countries to keep up with the times. Developed countries attach great importance to lifelong education activities. In this respect, emergency distance education is a perfect fit for countries to make their learning activities permanent. The inadequacy of physical and financial conditions forces countries to invest significantly in emergency distance education applications. Through emergency distance education, people and trainers from different environments can come together (Kırık, 2014). Researchs shows that emergency distance education brings with it various disadvantages. According to Özdoğan and Berkant (2020), these disadvantages are loss of motivation, measurement and evaluation problems, inadequacy of resources such as the internet and computers, lack of communication and interaction, technical problems and inadequacy of socialization. In another study, (Shaikh & Özdaş, 2022) problems such as not having hardware and internet access, lack of motivation, apathy, not being able to connect to live lessons, lack of video and sound were identified. In a different study, it was determined that school principals encountered problems such as access to lessons, infrastructure, legislation, communication and coordination during the Covid-19 pandemic (Demirdağ, 2022). According to village schools' administrators, the most encountered problems in distance education during the epidemic period were low participation of students in classes, low motivation of students, inadequacy of distance education access devices and internet, ineffective assessment and evaluation, and indifference of parents to this process (Karaibiş & Katmer Bayraklı, 2022).

The roles of school principals in the emergency distance education process differ from their traditional roles. The emergency distance education process has differentiated the roles of school principals since it is a different system that uses different tools and equipment and needs constant planning and communication with teachers, students, parents and other stakeholders. The duties of the school administrator are expressed as maintaining the current situation, fulfilling the basic functions of the school, providing the necessary resources within the framework of laws and rules, and continuing the education and training services at school (Şişman, 2019). Fulfilling the schools' expectations is possible if the school principals focus on their primary duties. Generally speaking, the top priority task for schools is expressed as providing a quality education service that allows all students to learn. The most basic condition for providing quality education services at school is to make effective decisions. The basis of decision-making processes at school is to ensure that students are successful and happy (Sezer, 2016). School leadership is a complex and challenging role, and navigating change in uncertain times brings additional challenges and increasingly difficult decisions (Panunciar et al., 2020). School leaders cannot maintain the leadership practices they were once accustomed to in times of uncertain crisis. In such times, leadership means exploring different solutions to create new ways (Harris & Jones, 2020).

In the digital age of instructional leadership, effective schools need to take advantage of physical resources, as well as information and communication technologies. They should use school resources effectively and modernize school facilities (Huong, 2020). However, Covid-19 has dramatically changed the concepts of leadership and leadership practices. While principals still run their schools, they are doing it in ways they could not have imagined a few months ago. They lead using technological tools, interacting with fewer students in school buildings, and with the community through interactions with parents, support groups, and online support groups (Harris, 2020). The pandemic has brought many of the unresolved inequalities in education systems to the fore. School principals express their concerns about the exacerbation of existing inequalities and the emergence of new problems in accessing quality education for students and parents. For example, some students do not have the technology to receive online education, and they have internet connection problems, as well as infrastructure etc. In addition to all existing problems, the principals are expected to take the initiative to solve such problems (Pollock, 2020). According to a study, school principals try to solve the problems they encounter in the distance education process by supporting teachers technologically, students academically and psychosocially, and using effective communication with parents and employees of the institution (Keleş et al., 2020). A similar study shows that principals try to prevent students from being disconnected from the school during the emergency distance education process. They provide printed resources to students who do not have the internet at home to ensure equality in students' access to technological resources, provide technological tools, and support the use of Education Information Network (EIN) (Turan, 2020).

School leadership practices have changed dramatically and may be irreversibly altered due to Covid-19. As a result of the pandemic, school leadership has deviated from traditional methods and is unlikely to return to normal anytime soon (Harris & Jones, 2020). Prior to Covid-19, the most common type of leadership found in schools was identified as traditional, where the principal's purpose was primarily to manage the school and ensure that learning and teaching were efficiently optimized. However, during the emergency distance education process, routine work and transactions were replaced by a different system. Globally, school principals at all levels of the system spend their time influencing and interacting with others through a laptop or phone screen (Harris, 2020). Research results indicate that the school principals being in contact with teachers, students, and parents, and being accessible and visible during the epidemic process, are effective in the success of the education process (Keleş et al., 2020). Examining the opinions of school principals regarding studies conducted during the Covid-19 emergency distance education process is important in solving educational problems such as communication with stakeholders, motivation, and continuity of institution identity. The research aims to examine the roles of school principals in the emergency distance education process. Within the framework of this general purpose, answers were sought for the following sub-objectives:

1. What are the school principals' views on emergency distance education in the Covid-19 process?
2. What actions have school principals taken in their schools during the Covid-19 process?
3. What actions have school principals taken for teachers during the Covid-19 process?
4. What actions have school principals taken for students during the Covid-19 process?
5. What actions have school principals taken for parents during the Covid-19 process?

METHOD

This research was designed as qualitative case study. The most distinctive feature of qualitative case studies is the in-depth investigation of one or more cases (Yıldırım & Şimşek, 2018). The purpose of the case study is to try to illuminate why a certain decision or decisions were made, how they were implemented, and what the results were (Yin, 2003). This design helps researchers determine whether the applied program has achieved its purpose. In this context, the opinions of school principals about their roles in the emergency distance education process during the Covid-19 process and their work were used.

The Study Group

The criterion sampling method was used in this research. Criterion sampling involves studying situations that meet a set of criteria predetermined by the researcher. While these criteria can be created by the researcher, a previously prepared list can also be used (Marshall & Rossman, 2014). In this study, the following criteria were used to select school principals for the research: having worked as a principal in at least one school during the emergency distance education process, working in primary and secondary schools, and actively conducting the emergency distance education process. The study group consists of 40 school principals working in primary and

secondary schools, with 39 of them being male and one being female. Of the principals, 28 have undergraduate education level, while 12 have graduate education level.

Data collection tool

In the research, a semi-structured interview form was used as the data collection tool. To ensure the validity of the semi-structured interview form, the opinions of an associate professor and a doctor lecturer were sought. In line with their expert opinions, the research form was finalized. The semi-structured interview form consisted of two parts. In the first part, the gender, education level, age and duration of the principalship of the school principals were recorded. In the second part, five questions were included that corresponded to the sub-objectives of the reserach. The questions were formulated as follows: What are your views on emergency distance education in the Covid-19 process? What actions have you undertaken at your school during the Covid-19 process? What actions have you undertaken for teachers during the Covid-19 process? What actions have you undertaken for students during the Covid-19 process? What actions have you undertaken for parents during the Covid-19 process?

Data collection

To collect the data, ethics committee permission was obtained from Mardin Artuklu University, dated 16/09/2020, and numbered 2020/7-1. The research data were collected using an electronic form of the semi-structured interview developed by the researchers. The link to the prepared form was sent to the school principals via e-mail. The school principals were informed that their participation in the research was voluntary, and they could withdraw from the research at any time. Additionally, it was conveyed to them that the opinions they expressed would only be used for scientific research purposes, and ethical rules would be followed in the use of the data.

Data analysis

Content analysis was used to analyze the data. The main purpose of the content analysis is to identify concepts and relationships that can explain the collected data (Yıldırım & Şimşek 2018). The data analysis process started with the independent coding of the data by the researchers. The coding was done according to the concepts extracted from the data. In the second stage, the codes created by the researchers were examined, and themes were obtained. The codes were defined and arranged according to the themes obtained in the third stage. In the fourth stage, the defined findings were interpreted, and the results were obtained.

To ensure the reliability of data analysis, the consistency between the coders was calculated. In this regard, the percent agreement formula developed by Miles and Huberman (1994) was used. The percentage of agreement expresses “Reliability = Consensus/(Agreement + Disagreement) x 100”. In the study, the percentage of agreement was found to be 0.88 by means of this formula. According to Yıldırım and Şimşek (2018), a percentage of agreement of 70% or higher indicates coding reliability. The obtained findings are presented in tables, where the codes and themes are shown with numerical data. In addition, the opinions of some school principals were presented directly in the findings section. The coding was used to identify the opinions, where the letter represents the school principal's number and the school principal's rank in the research. For example, the SP1 code represents the school principal in the first rank of the research.

FINDINGS

In this section, the findings obtained according to the opinions of the school principals are presented within the framework of the sub-objectives of the research. First of all, the work of school principals in their schools during the Covid-19 process was evaluated. Finally, in the study, the views of school principals on education in the Covid-19 process were evaluated.

Opinions of School Principals on Emergency Distance Education in the Covid-19 Process

In the first research question of the study, the opinions of school principals about emergency distance education were investigated. The findings obtained from the opinions of the school principals regarding the emergency distance education activities are presented in Table 1:

Table 1. Opinions of School Principals on Emergency Distance Education in the Covid-19 Process

Theme	Codes	f
Successful	Positive (SP6, 23, 25, 26, 28, 33, 36), necessary (SP19, 34), good (SP3, 7, 14, 28), very beneficial (SP7, 10, 17, 19, 20)	18
Unsuccessful	Failed (SP35), useless (SP23), ineffective in village schools (SP5, 8, 14), not healthy (SP31), not productive (SP3, 9, 11, 16, 18), inefficient (SP1,2, 21, 29, 30, 32, 38), not helpful (SP15, 24)	20
Should be developed	Unsystematic (SP13), unequal opportunity (SP12), fine but insufficient (SP8), good for those with enough equipment (SP22), not as good as face-to-face training (SP7, 10, 25, 36), insufficient participation (SP4, 11, 39), insufficient hardware and infrastructure (SP17, 34, 37)	14

As seen in Table 1, it was revealed that school principals evaluated emergency distance education in the Covid-19 process under three themes as successful, unsuccessful and should be developed. It has been determined that the school principals, who evaluated emergency distance education as successful, found the emergency distance education activities in the Covid-19 process useful, positive, good and necessary. It was seen that the school principals who evaluated the education in this process as unsuccessful did not find emergency distance education healthy, successful, useful, or productive. In addition, it was revealed that school principals who evaluated emergency distance education in the Covid-19 process as should be developed, also evaluated that having emergency distance education is better than nothing, that it is not like face-to-face education, and that there is no equal opportunity and sufficient equipment for everyone. Below are some opinions of the school principals who evaluated emergency distance education in the Covid-19 process as successful:

SP6 stated that "it is a positive situation," SP7 mentioned that "it was fine," SP26 praised the Ministry's ability to plan and manage the process, SP19 found it "beneficial," and SP34 stated that "emergency distance education is undoubtedly necessary during the pandemic process."

Some of the exemplary school principals' opinions evaluating emergency distance education as unsuccessful in the Covid-19 process are given below:

SP15: *"I do not think it is very useful",* SP14: *"It has been an ineffective process, especially for rural schools like ours.",* SP18: *"I do not find it efficient."*, SP21: "*Extremely inefficient. Once again, we saw that emergency distance education is not useful.",* SP23: "*It is not very useful.",* SP30: *"I find it very inefficient.",* SP35: *"I think that emergency distance education is not successful."*

Some of the exemplary school principals' opinions evaluating emergency distance education as insufficient in the Covid-19 process are given below:

SP4: "*The majority of students could not participate due to not having required equipment or infrastructure."*, SP10: "*Although it was not like face-to-face education, emergency distance education was also very beneficial."*, SP12: *"I think there are regional differences. I think that equality of opportunity, which is one of the indispensable values of education, is violated due to the limited technological infrastructure and lack of necessary materials in disadvantaged environments."*, SP16: *"We could not ensure the participation of students who we could not motivate at school."*, SP25: *"We try to provide emergency distance education in the best way, but it cannot be as efficient as face-to-face training."*

The Actions of School Principals in their Schools during the Covid-19 Process

In the second sub-objective of the study, the work of school principals in their schools during the emergency distance education process were investigated. The findings obtained from the opinions of school principals regarding the work they have done in their schools during the Covid-19 process are presented in Table 2:

Table 2. Studies of School Principals in Their Schools During the Covid-19 Process

Theme	Codes	f
Information	Informing the employees (SP12, 14, 17, 28 36), informing the students (SP4, 7, 12, 13, 14, 18, 28), informing the parents (SP4, 7, 13, 16, 17, 28),	18
Preparation	Placing masks and disinfectants in classrooms and school (SP18, 24, 25, 28, 29), painting the school (SP22), organizing the school and classes (SP5, 28, 39), taking precautions (SP8, 35), disinfecting the school (SP2, 3, 4, 7, 10, 11, 12, 13, 15, 17, 19, 24, 29, 33, 36), hanging out warning and information signs (SP18, 19, 25, 27, 28, 29, 32, 33, 36), cleaning the school (SP2, 10, 11, 19, 22, 23. 24, 26, 30, 32, 34, 35, 36, 38) thermometer was taken (SP29), making physical improvements (SP11),	51

When the findings in Table 2 were examined, it was determined that the school principals carried out information and preparatory activities in their schools during the Covid-19 process. It is seen that school principals held meetings in their schools and informed students, teachers and parents about the process within

the scope of information activities. Within the scope of the preparatory work, it was revealed that they made physical improvements in the school, cleaned and disinfected the school, bought tools for the epidemic, and hung warning and information signs about the epidemic in various areas of the school. Some of the sample opinions of the school principals about the information activities that they have done in their schools during the Covid-19 process are given below:

SP4: *"…we informed students and parents…"*, SP7: *"We guided students from a distance. We gave training to parents about Covid.*", SP12: "*We carried out preventive and protective information activities for students and employees.*", SP14: *"We tried to adapt to the new situation. We informed our students and teachers about the new process.*", SP17: "*We held all our meetings (group, branch, teachers' board) as ZOOM meetings. While we decided what to do in one meeting, we evaluated what we could/could not do in our next meeting.",* SP28: "*We informed the parents, teachers and students."*

Some of the sample views of school principals regarding the preparatory work they have done in their schools during the Covid-19 process are given below:

SP2: *"We cleaned the school. We disinfected the school at regular intervals.",* SP11*: "Since the school is closed to educational activities, we carried out physical improvements and cleaning"*, SP18: *"We put up warning signs. We put disinfectant in every classroom."*, SP23: *"We worked to make the school ready."*, SP27: *"We put direction signs in various parts of the school.",* SP39: *"We organized the working environment and classes in the school according to social distance rules. We also started to pay more attention to cleanliness. We do general cleaning in the toilets at least twice a day."*

Actions of School Principals for Teachers in the Covid-19 Process

In the third sub-objective of the research, the works of school principals for teachers in the emergency distance education process were investigated. The findings obtained from the opinions of school principals regarding the work they have done for their teachers during the Covid-19 process are presented in Table 3:

Table 3. Actions of School Principals for Teachers in the Covid-19 Process

Themes	Codes	f
Encouraging	Motivation (SP14, 17, 38), mentoring (SP37), directing (SP11), inclusion in the process (SP22)	6
Communicating	Information (SP2, 7, 11, 13, 16, 18, 19, 20, 21, 22, 24, 28, 29, 32, 33, 34, 39), calling the phone (SP8), held meetings (SP1, 4, 5, 7, 8, 11, 15, 17, 35, 36), setting up WhatsApp groups (SP3, 15)	30
Providing an environment	Organizing the teachers' room (SP31), creating a clean environment (SP34)	2
Planning	Planning online lessons (SP3, 4, 6, 7, 13, 15, 17, 21), distribution of lessons (SP5), supervision the training (SP1, 10).	11
Training	Supporting (SP4), introducing educational tools (SP12,21), carried out professional studies (SP6), helding seminars (SP11, 23, 25, 27, 30, 32, 35)	11

When the findings in Table 3 were examined, it has been revealed that school principals have been working on encouraging, communicating, providing an environment, planning and training for teachers during the Covid-19 process. Within the scope of encouragement, it is seen that school principals carry out guidance and orientation activities for teachers and motivate them to participate in the process. Within the scope of communication, it is revealed that they exchange information with the teachers, inform the teachers about the process, establish communication groups, call the teachers on the phone and hold meetings. Within the scope of providing an environment, it has been determined that school principals provide e-resources to teachers, provide a clean environment for teachers at school, and organize the teachers' lounge following the epidemic conditions. Within the scope of planning, it is seen that school principals plan online lessons by scheduling classes and follow the training given. Within the scope of training, it was revealed that school principals gave seminars to teachers, held conferences and professional studies, supported teachers by introducing emergency distance education tools, and gave training about EIN. Some of the exemplary opinions of school principals about the encouragement activities they have done for teachers during the Covid-19 process are given below:

SP11: *"We provided guidance and information for teachers to attend emergency distance education courses organized by the Ministry of National Education.*", SP17: *"We tried to motivate the teachers.",* SP22: *"We shared information about emergency distance education. We tried to include the teachers in the process."*, SP37: *"We did an online guidance work on what teachers should do during the pandemic process."*

Some of the exemplary opinions of school principals regarding the communication activities they have done for teachers during the Covid-19 process are given below:

SP2: *"We exchanged information about what can be done."*, SP3: "*We set up WhatsApp groups for teachers.",* SP8: *"We held online meetings at regular intervals. We kept in touch over the phone.",* SP13: *"We informed (them) remotely online."*, SP21: *"We kept in touch via WhatsApp. We shared the incoming information and links."*

Some of the exemplary opinions of school principals regarding their efforts to provide an environment for teachers during the Covid-19 process are given below:

SP31: *"We made the necessary arrangements in the teachers' lounge.*", SP34: *"We tried to create a clean environment for teachers in the school."*

Some of the sample views of school principals regarding the planning studies they have done for teachers during the Covid-19 process are given below:

SP5: *"We held meetings and scheduled classes."*, SP6: *"We planned online lessons and carried out emergency distance education activities."*, SP10: *"We tried to ensure that teachers continue the lessons, also guide and follow students."*

Some of the exemplary opinions of school principals about the training activities they have done for teachers during the Covid-19 process are given below:

SP4: *"We provided support for additional resources.",* SP12: *"We introduced information technologies to be used in emergency distance education to our teachers."*, SP21: *"We introduced EIN...",* SP25: *"We gave seminars to all teachers.*", SP32: "*We held conferences. We informed (the teachers) about the process."*

Actions of School Principals for Students in the Covid-19 Process

In the fourth sub-objective of the study, the actions of school principals for students in the emergency distance education process were investigated. The findings obtained from the opinions of the school principals participating in the research on the work they have done for their students are presented in Table 4:

Table 4. Works of School Principals for Students in the Covid-19 Process

Theme	Codes	f
Organizing educational activities	Sending trial exams (SP15, 36), preparing lesson videos (SP15), doing exercises (SP8,36), motivation (SP4, 14, 17), online lessons (SP1, 2, 5, 6, 7, 8, 9, 10, 12, 13, 15, 16, 17, 20, 33, 35, 36, 37), homework submission (SP2), guiding (SP2, 12, 13, 16, 17, 27, 29, 30, 36, 37), sharing solutions of questions (SP7, 16), setting up meetings with authors (SP11)	40
Introducing the process	Informing (SP2, 3, 9, 12, 17, 18, 19, 21, 23, 24, 26, 28, 33, 34, 35, 36, 37, 38, 39), explaining the use of masks (SP19, 31), organizing seminars (SP17, 25, 27, 32, 35, 39).	27

When examining the data in Table 4, it was determined that the school principals introduced and organized educational activities for students during the Covid-19 process. It has been revealed that as part of their efforts to organize educational activities they guided and motivated students, enabled their participation in various activities, and gave online lessons, shared assignments, exams, questions, and lecture videos. In addition, they established communication groups, gave seminars, and explained the use of masks. Some sample opinions of the school principals about their efforts on informational activities for parents are given below:

SP8: "*Online lessons were taught. ...many activities were held.",* SP14: "*We tried to reach our students and maintain their concentration through various communication tools.*", SP15: *"We sent practice exams and activities to eighth-grade students via EIN. Within the scope of the '6 questions 6 answers' project of the Directorate of National Education, we prepared 6 question 6 answer videos and presented them to our students.*", SP37: *"We taught online lessons through EIN..."*

Some of the sample views of the school principals about their efforts on informational activities they have done for students during the Covid-19 process are given below:

SP3: *"...we set up WhatsApp groups for students.*", SP9: "*We did emergency distance education activities and* encounter (Kavrayıcı & Kesim, 2021). *briefings*.", SP19: "*We distributed masks and informed students.*", SP35: *"We gave emergency distance education and seminars. We informed about the process."*

Actions of School Principals for Parents in the Covid-19 Process

In the last research question of the research, the actions of school principals for parents in the emergency distance education process were investigated. The findings obtained from the opinions of the school principals participating in the research on the work they have done for the parents are presented in Table 5:

Table 5. Actions of School Principals for Parents in the Covid-19 Process

Theme	Codes	f
Informational activities	Informing (SP1, 4, 5, 6, 12, 16, 17, 18, 19, 21, 22, 23, 24, 26, 28, 30, 34, 37, 38, 39), sending brochures (SP29, 34, 36), interviews (SP2, 3,14, 22), guidance (SP6, 10, 13, 36), seminars (SP27, 35), meetings (SP7, 8, 25, 28, 31, 32, 35, 36), orientation (SP13, 33, 34)	45

When the findings in Table 5 were examined, it has been determined that school principals have done informational activities to parents during the Covid-19 process. It is understood that within the scope of promoting the process school principals sent brochures to parents, they informed and guided parents through meetings and seminars.

Some of the sample opinions of the school principals about the efforts on informational activities they have done for the parents during the Covid-19 process are given below:

SP3: "*Meetings were held with parents to provide students with required materials such as communication, necessary internet, questions and books.*", SP13: "*Guidance was provided.*", SP27: "*We conducted practices on crisis intervention through seminar presentation and social networks.*", SP36: "*We sent informational brochures on Covid-19 Disease.*", SP38: "*We conducted informational activities on protecting children from the virus.*"

Discussion & Conclusion

Schools are dynamic organizations that principals must deal with daily with various levels of anxiety, uncertainty, and equity issues (Ahlström et al., 2020). It is estimated that school principals encounter such situations more frequently during the epidemic. A comprehensive action plan is required to overcome such a crisis. In this process, school principals have to encourage teacher-student communication, ensure adequate participation in classes, and be in contact with teachers, students and parents (Chennamsetti, 2020). In the Covid-19 epidemic, school principals are expected to recognize and solve the problems they face, to guide and lead teachers, students and other school stakeholders. In this process, it has been determined that school principals make an effort to solve the problems they encounter (Dilekçi, 2021; Kavrayıcı & Kesim, 2021). This study, is aimed to examine the roles of school principals in the emergency distance education process in general. In addition to the problems that are routinely encountered in times of crisis and uncertainty, crisis-specific problems are also expected to emerge. In the study, the views of school principals on emergency distance education in the Covid-19 process were examined. At the same time, their activities in their schools were examined, and it was tried to determine what their work was for teachers, students and parents of students.

In the research, the views of school principals on emergency distance education during the Covid-19 process were examined. According to the results of the research, it has been revealed that school principals evaluate emergency distance education during the Covid-19 process in three different ways as successful, unsuccessful and should be developed. The research findings show that the school principals expressed 52 opinions on the subject. It is understood from the research findings that while approximately one-third of the opinions of the school principals are positive about emergency distance education, the remaining opinions are negative. School principals also presented examples from their experiences while expressing these views. From the results of the research, the results indicate that about two-thirds of school principals consider emergency distance education during the Covid-19 process insufficient. This result requires questioning the quality of the education provided. Because one of the main purposes of schools is to provide students with a quality educational opportunity and environment. It is understood from the views that this opportunity and environment could not be provided despite all the efforts of the school principals, and therefore the emergency distance education provided was not successful.

Success cannot be expected from a system that is caught unprepared in times of crisis. However, the fact that the rate is so high indicates that the emergency distance education system is not efficient. One reason for such a high level of dissatisfaction may be the comparison of the emergency distance education system with the face-to-face system. Having to switch very quickly from a system known for its advantages and disadvantages to an almost unfamiliar system may have caused the negative sides of the system to be brought to the fore. Similar studies with the results of this research are found in the literature. The opinions of school administrators on the disadvantages of emergency distance education are mostly in the form of inadequacies related to technology, environment, and assessment evaluation (Özdoğan & Berkant, 2020). In another study on the inadequacy of emergency distance education, it was stated that there were hardware and software deficiencies regarding the infrastructure (Gökdaş & Kayri, 2005). In a similar study, technical deficiencies were seen as an important problem by school principals. Within the scope of this problem, school principals stated that online education was adversely affected due to reasons such as teachers' limited internet quotas, lack of internet in their regions, and some teachers

and students not having equipment such as tablets and computers. School principals also stated that they mostly experienced problems related to communication (Külekçi et al., 2020).

About one-third of the school principals gave a positive evaluation on emergency distance education. This ratio is important in a time of crisis and uncertainty. Because despite everything, it is stated by school principals that schools have done positive things, taken initiative and provided solutions during this crisis period. It is estimated that the technology infrastructure of the schools, the social and economic situation in which the school is in, the facilities the students have are more advantageous in schools of which school principals have expressed positive thoughts on emergency distance education. Although its quality is discussed during the epidemic period when many workplaces or institutions around the world stopped or limited their activities, it is an important gain that schools continued their activities with emergency distance education.

Another area where the opinions of school principals were evaluated is the work of school principals at school. In this context, the studies of school principals in the emergency distance education process were examined. According to the research findings, it has been revealed that school principals have done informative and preparatory activities at school. School principals stated that they informed teachers, students and parents about exam preparations, online lessons, etc. in the emergency distance education process. It is understood from the views that informative activities were carried out through online meetings and social media tools. School principals also stated that they made preparations considering the possibility of face-to-face education at any time, that they kept the school and classrooms clean, ready and safe, they arranged the classrooms according to the epidemic conditions and the social distance rules.

In times of uncertain crisis, school principals can not maintain the leadership practices they are accustomed to. In such times, leadership means exploring different solutions to create new ways (Harris & Jones, 2020). In the research, it was determined that school principals took duties and responsibilities in and out of the school during the epidemic process. The in-school duties and responsibilities of school principals have been communication, coordination, management of instruction, online project management and assistance (Kavrayıcı & Kesim, 2021). In line with the opinions taken to examine the level of crisis management skills of school principals, it has been determined that school principals take adequate measures against the crisis in times of crisis (Karakuş, 2018). In another study, it was determined that school principals take physical precautions at schools, carry out information activities and plan with teachers (Kavrayıcı & Kesim, 2021). A similar study concluded that during the Covid-19 process, school principals followed the emergency distance education process from the reports received over EIN, the evaluation reports received from the teachers, the verbal statements of the teachers, by participating in online lessons, by sharing the good practices and evaluating the feedback from the parents of the students (Turan, 2008). 2020). When the results obtained in this research and similar research results were examined, it was seen that school principals made an effort to provide a healthy and productive educational environment at school during the Covid-19 process.

It has been determined that school principals are trying to increase the motivation of teachers during the Covid-19 process, they do guidance work about the emergency distance education process, direct teachers and try to add them to the process. At the same time, the findings indicated that they exchange information with teachers, communicate through social media groups, plan online lessons and follow the education process, make an effort to provide a suitable learning environment and promote the tools to be used in this process. School principals stated that they tried to communicate with teachers in this process and to keep the motivation of teachers at a high level. Motivation has an important role in increasing efficiency and ensuring success in educational organizations (Herzberg, 2003). The research results show that school principals are at the forefront of the factors that affect teachers' motivation (Latham, 1998; Koçak & Helvacı, 2011; Özdemir et al., 2014). Teachers need motivation and guidance during this process. Because teachers had to continue their education with a new approach in areas such as teaching with an unusual system, using different tools and classroom management. Therefore, school principals are expected to assist teachers in these matters. One of the activities of school principals is to plan and provide a suitable learning environment. It is important to plan emergency distance education activities with teachers. It is also important that subjects such as educational activities, online lessons, guidance activities, parent meetings, and presentations of materials that students preparing for central exams will need are included in the planning through the EIN platform or other emergency distance education tools. In this context, it is expected that strengthening the leadership of school principals, focusing on educational goals that will enable school principals and teachers to take a participatory management approach (Özdaş et al., 2018) will contribute to the more efficient operation of the system. A similar study pointed out that school principals carried out practices such as providing technical

support to teachers, sharing school computers and announcements by the ministry of education with teachers, and directing teachers to distance in-service training for technology use during the Covid-19 process (Turan, 2020).

The research result has revealed that the work of school principals for students during the Covid-19 process is to introduce the emergency distance education process and organize educational activities. In this context, school principals stated that they carried out activities such as planning online lessons, sending exams to students through various emergency distance education tools, sharing answer keys, homework, doing activities that will increase the motivation of students, bringing students together with experts, and being in constant communication with students. It is understood that school principals mostly work on planning the teaching process and work towards increasing student motivation Another study supporting this research stated that online lessons were given to students through the EIN platform during the emergency distance education process (Yaman, 2021). Another similar study concluded that school principals have a role in ensuring the motivation of their students, and they perform these roles sometimes directly and sometimes through their teachers (Külekçi et al., 2020). In another study, it was determined that school principals support students in using technology by directing them to EIN TV and EIN online lessons, and by sharing good examples of emergency distance education among teachers (Turan, 2020). It is known that in the early stages of the epidemic, students did not have enough technical infrastructure and opportunities to connect to online lessons (Kavrayıcı & Kesim, 2021; Chennamsetti, 2020). Another issue that school principals focus on is the provision of necessary materials to students. Thus, it has been tried to ensure that students benefit from the education process efficiently.

The present research revealed that school principals introduced educational activities for parents during the Covid-19 process, informed them about the process, provided guidance to parents, organized seminars, held meetings, and helped the parents with financial inadequacy. In other words, school principals have included parents in the process considering them as a pillar of the process. Yaman (2021) also stated in his research that families are not forgotten in the emergency distance education process and that parents, one of the stakeholders in the education process, are included in the process. Similar studies have determined that school principals plan for the continuity of learning, meet with parents and are in contact with them (Turan, 2020; Panunciar et al., 2020). Research shows that school principals also have a role in ensuring the motivation of parents, which they sometimes perform themselves and sometimes through teachers (Külekçi et al., 2020). Research shows that the school administration's communication with parents during the epidemic increases participation and interest in emergency distance education (Keleş et al., 2020; Panunciar et al., 2020). While school principals continue their traditional roles in school management, the emerging Covid-19 epidemic has made emergency distance education compulsory in schools. This situation has caused school principals to continue their traditional roles differently. It has been revealed that school principals kept the school ready for education and training during the epidemic and carried out practices for teachers, students and parents.

In this study, the roles of school principals in the Covid-19 process were investigated. In the research, the qualitative method was used. Quantitative or mixed research can be done at different educational levels. When the findings are examined, it is seen that the school principals are working to improve the education and training process in schools during the Covid-19 process; they carry out various activities for teachers, students, and student parents. The research was conducted at the primary and secondary school levels. The collection of research data only from primary and secondary school principals reveals the limitations of the research. Another limitation of the study is that the data were collected from only one province. However, the researchers tried to reduce the effects of this limitation by reaching as many primary and secondary school principals as possible.

Statements of publication ethics

Permission for the present research was obtained from the Ethics Committee of Mardin Artuklu University with the decision dated 16.09.2020 and numbered 7/1.

Researchers' contribution rate

Each of the authors contributed equally to the article.

Conflict of interest

The authors have no conflicts of interest to disclose.

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Male Pre-School Principals' Experiences on Glass Escalator

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Abstract

The glass escalator is a metaphor used to describe how men in feminized workplaces move up career ladders, and this study aims to determine the experiences of male pre-school principals and the possible effects of cultural values on the results of the glass escalator through the ranks because of gender norms and job expectations. In this context, meetings are held with four school principals, working in Kocaeli and in pre-school education institutions. As an interpretive approach, phenomenology is used in the study. The criterion sampling method and the snowball sampling method, which are among the purposeful sampling methods, are used together in forming the working group. Research findings are discussed in terms of individual and cultural factors. The former is mainly related to the preferences of male principals, who tend to see working in pre-school institutions as an opportunity for promotion. This perspective is discussed from the standpoint of 'visibility', which emerges as an advantageous feature for men but not for women. Cultural factors, on the other hand, are related to culturally-influenced beliefs regarding male and female roles. Because management is seen as a male occupation, female teachers also prefer and support male principals.

Keywords: Glass escalator, pre-school educational institutions, male school principals

Erkek Okul Öncesi Müdürlerinin Cam Asansör Deneyimleri

Öz

Cam asansör, kadınlaştırılmış işyerlerinde erkeklerin kariyer basamaklarını nasıl çıktıklarını anlatmak için kullanılan bir metafordur ve bu çalışma, erkek okul öncesi müdürlerinin deneyimlerini ve toplumsal cinsiyet normları ve iş beklentileri nedeniyle kültürel değerlerin cam asansörün sonuçları üzerindeki olası etkilerini belirlemeyi amaçlamaktadır. Bu bağlamda Kocaeli'nde okul öncesi eğitim kurumlarında görev yapan dört okul müdürü ile görüşmeler gerçekleştirilmiştir. Çalışmada yorumlayıcı bir yaklaşım olarak fenomenoloji kullanılmıştır. Çalışma grubunun oluşturulmasında amaçlı örnekleme yöntemlerinden ölçüt örnekleme yöntemi ve kartopu örnekleme yöntemi birlikte kullanılmıştır. Araştırma bulguları bireysel ve kültürel faktörler açısından tartışılmıştır. Bunlardan ilki, okul öncesi kurumlarda çalışmayı terfi için bir fırsat olarak görme eğiliminde olan erkek müdürlerin tercihleriyle ilgilidir. Bu bakış açısı, kadınlar için değil ama erkekler için avantajlı bir özellik olarak ortaya çıkan 'görünürlük' açısından tartışılmıştır. Kültürel faktörler ise kadın ve erkek rollerine ilişkin kültürel olarak etkilenen inançlarla ilgilidir. Yöneticilik bir erkek mesleği olarak görüldüğünden, kadın öğretmenler de erkek müdürleri tercih etmekte ve desteklemektedir.

Anahtar kelimeler: Cam asansör, okul öncesi eğitim kurumları, erkek okul öncesi müdürleri

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INTRODUCTION

In organizations, gender-based dominant and minority groups are formed due to the development of gender roles and occupational stereotypes that are based on the social status of the male and female genders. These factors also have an impact on the organizational structure that is a component of the social system. For instance, the idea of "tokenism" is reflected in the organization's numerical minority of women. Kanter (1977, 2003), who advocates the view that individuals who are numerically a minority in the organization have a disadvantaged position, states that this situation has consequences such as the visibility of their actions within the organization, polarization, and assimilation for the individuals in the minority position. The visibility of their actions means that individuals are expected to work in roles deemed appropriate for them within the organization, and as a result, they experience high levels of stress. Polarization is the formal and informal exclusion of individuals from a group and their isolation. Assimilation, on the other hand, means that people in different professions are expected to behave according to professional stereotypes.

Ongoing studies on the subject brought up the question of whether being a minority in the organization has the same results for men, as well as the experience of men who prefer to work in professions called “women's professions”, bringing a strong criticism to the theory of "tokenism." It has led to the emergence of the concept of the glass escalator, meaning the status of being a token turns into an advantage for men. The idea that being a minority (tokenism) has different effects for men and women (Stroshine and Brandl, 2011; Williams, 1992; Yoder and Sinnett, 1985) was first used by Christine Williams (1992). Since it is called a glass escalator in his work titled "The Glass Escalator: Hidden Advantages for Men in the "Female" Profession" it is often attributed to Williams (1992) in the literature.

To illustrate how gender as a status characteristic interacts with the consequences of tokenism in two occupations, sociologists Floge and Merrill (1986) first employed the idea in relation to the token status of male nurses in the workplace. The results of a study done with 44 hospital employees—including male nurses and female doctors in two distinct hospitals—show that men gain substantially from this circumstance. Also, the results of the studies conducted with men working in occupations defined as female occupations to understand the outcomes of being a minority for men show that men and women working in non-traditional occupations do not experience the consequences of being a minority in the same way (Sargent, 2000; Shen-Miller, Olson, and Boling, 2011; Williams, 1992). While being a minority creates a negative situation within the organization for women, it creates a positive situation for men (Gustafson, 2008; Williams, 1992). In addition, the visibility of female minorities prevents them from working efficiently, while the visibility of male minorities gives them the chance to choose leadership and duties (Floge and Merrill, 1986; Williams, 1995a). Acker (1990) states that studies in this field are important in that they emphasize sexist institutions and professions that produce different experiences for men and women. The results of the study conducted by Wingfield (2009) show that the roles, skills, and abilities of men provide them with privileges and facilitate their progress. Williams (1995b) explains this situation by stating that masculinity is commonly associated with competence and mastery, and this perception persists even men work in a traditionally female occupation. For this reason, part of the perception that men do not belong to these jobs is always the idea that men are more talented and successful than women and that they should belong to jobs that reflect this.

As Williams (1995b) states, the main idea is that men are suitable for more masculine professions, meaning that men are more talented and have more leadership characteristics than their female colleagues. This is the result of power relations between men and women, largely due to the patriarchal social structure. The power and status brought by the patriarchal social structure provide men with situational dominance, and men effectively utilize their traditional advantages even in professions called women's professions (Cross and Bagilhole, 2002; Cognard-Black, 2004; Floge and Merril, 1986), and they have the chance to succeed thanks to their favored minority status (Evans, 1997; Hultin, 2003). This situation causes men to think that they are more advantageous in terms of wages if they work in women's jobs (Hultin, 2003; Karlsen, 2012; Price-Glynn and Rakocski, 2012). In addition, the fact that women continue their careers at lower ranks or take a break due to family responsibilities divided according to gender roles also supports the concept of glass escalators in favor of men (Evers and Severdiy, 2014).

That men are supported by their female supervisors and colleagues is another issue that supports the formation of the glass escalator concept in the career development process (Budig, 2002; Evans, 1997; Fairhust and Snavely, 1983; Hultin, 2003; Maume, 1999; Morris, 2010; Simpson, 2004; Williams, 1992; Wingfield, 2009; Zimmer, 1998). This situation arises from the belief that men will be more talented and better leaders (Crocker and McGraw, 1984; Floge and Merrill, 1986). Ritter and Yoder (2004) reveal in their study that even when women

are more numerous in the group, the leadership task is given to men in large proportions. In many organizations, the fact that management levels are dominated by men (Budig, 2002) seems to be acceptable as an indicator of this.

The glass escalator can't only be explained by the majority status of men in managerial positions. Because this situation is a result and reflection of social culture, it is possible that the causes and consequences of the glass escalator may differ between countries. It is possible to say that this situation arises from the social and cultural structure, which also affects the organizational culture significantly. The cultural characteristics of a society determine the institutional and administrative processes and practices in those societies as well as providing clues about the cultural characteristics of the institutions (Eğinli & Çakır, 2011). This situation also manifests itself in educational organizations that reflect the social structure. It is important to work in pre-school institutions, which is a profession attributed to women within the framework of professional stereotypes of management (Adler, 1999) and also one of the professions to which power is attributed. So this study aims to investigate the experiences of male pre-school administrators in Turkey regarding the concept of the glass escalator and the possible effects of cultural values on the causes and consequences of the concept of glass escalators.

METHOD

A qualitative research design was used in this study, which deals with the experiences of male pre-school administrators in Kocaeli, Turkey, regarding the concept of the glass escalator and the possible effects on cultural values as a result of the concept of the glass escalator. Since the subject of the research consists of the experiences of male pre-school administrators regarding the management process and their views on the impact of cultural values on their management experience, a qualitative research method is used in the research to define the common meaning of the lived experiences of a few people about a phenomenon or concept (Creswell, 2013).

The study group of the research consists of male school principals working in pre-school education institutions. Although the small number of male pre-school administrators constitutes a limitation for the study, the fact that the interviewed administrators know each other provided an advantage in informing the study group and conducting in-depth interviews in accordance with the nature of phenomenology. In the formation of the study group, the criterion sampling method and the snowball sampling method, which are purposeful sampling methods, were used together. In determining the criteria, it was determined that the school administrators should be experienced and oriented to the school's culture. So, the criteria used in the formation of the study group are that school administrators have at least two years of management experience, have worked in the institution where they are currently working for at least one year, and are willing to participate in the research. Within the scope of research ethics, participants included in the study group were called by phone and informed about the researcher and the research topic to be discussed. The information about the institutions and persons mentioned during the interviews is kept confidential by the researcher, and the participants are coded as "P1, P2,..."

The semi-structured interview technique, which is the main data collection technique in phenomenology research, is used to collect the data of the research. In the process of preparing the interview form, first of all, a question pool was created based on the literature. Afterward, the form was finalized by referring to the expert opinion and named as "Experiences of Male Pre-School Administrators and the Culture-Related Factors Affecting Their Experiences Interview Form." A voice recorder was used during the interviews if the participant gave permission. If the participant did not give permission, notes were taken, and what was said was recorded.

To ensure the external validity of the research, the findings were defined with direct quotations, and the raw data and analysis were matched to ensure internal validity. To ensure external reliability in the research, the judgments and comments obtained were audited by an expert. Content analysis, a research method used to identify patterns in recorded communication, was used in the analysis of the data. In this context, the interviews were transcribed, and themes were created by examining the transcripted interviews. Themes are combined into two dimensions.

RESULTS

The findings related to the concept of glass escalator in pre-school education institutions are discussed in two dimensions: (1) individual factors and (2) culture-related factors. The preference of male teachers in pre-school education institutions to be principals is discussed under the dimension of individual factors. The stereotype that management is a male job, cultural structure, gender perception and the "queen bee syndrome" are discussed under the dimension of culture-related factors.

Individual Factors

The results of the research reveal that pre-school institutions with female-dominated working environments are preferred by male administrator candidates for promotion. Another remarkable point that emerged as a result of the research is that school counselors who want to be administrators also prefer pre-school institutions. Some of the participants' views on this situation are as follows:

> There is no need to give any other reason. I wanted to be a manager, and because of my low point, there is no alternative for me. There isn't any competition in pre-school institutions. Only school counselors and pre-school teachers can prefer pre-schools in management. I prefer it, so I came. (P 1)

> I think being a principal as a school counselor is an advantage, because we received an interdisciplinary education at the school. Education is more important for me than teaching, and pre-schools are places where the development of positive behaviors in children is at the forefront. That is why I prefer pre-school institutions as a principal. (P 2)

> I have studied at a high school for a long time. In this time, I realized that school principals aren't sufficient in many practices, so I decided to become a school principal. I saw this energy, desire, and power in myself because, as school counselors, we have to do some of the management work, whether voluntarily or not. The reason I chose pre-school was that I wanted to be a principal, and there was a need for school principals in pre-school institutions. There is a saying that "Nature does not accept a vacuum." In kindergartens, there were always school principals who acted as proxies, as pre-school teachers generally didn't prefer management. When we were given the right to be managers as school counselors, we preferred it. (P 3)

> In 2004, after working at this center for 8 years, I wanted to choose different institutions. Actually, I applied for the position of school counselor. We also had the opportunity to become managers. Kindergartens were also among our choices, and then I became the principal of this kindergarten. (P 4)

As may be seen from the participant's opinions, men who work as administrators in pre-school facilities have the potential to be "visible" despite being a minority. This situation shows that being in the minority position of visibility creates negative situations for female principals (Crocker and McGraw, 1984; Kanter, 1977,1993; Sperandio, 2010), while it creates positive situations for male principals, such as the chance of choosing a principalship in pre-school institutions. This finding is also compatible with the studies on the subject in the literature (Evans, 1997; Hultin, 2003; Williams, 1993; Wingfield, 2009).

The results obtained from the participant opinions show that male teachers' desires for promotion play an active role in their preference for principalship in pre-school institutions. Moreover, research shows that men prefer to be managers in institutions that are defined as suitable for women (Karlsen, 2012; Montecinos & Nielsen, 2004; Simpson, 2004; Taylor, 2010). It is possible to say that defining managerial roles together with men plays an important role in the formation of this situation (Abreu-Hornboster, 2012; İnandı, Özkan, Peker and Atik, 2009).

Culture-Related Factors

Another point that the participants emphasized in the interview process is that women do not prefer to be principals in pre-school institutions, and they support men to be principals in these institutions. The participants state that they think that the acceptance of the management area by society as a work area suitable for men is effective in creating this situation. The participant opinions on the subject are as follows:

> Women do not prefer to be principals. They started very enthusiastically, but then they quit. We work from 8 a.m. to 6 p.m. Teachers work from morning to noon. They work hard during that time, but it is only 5 hours, and they have free time for the rest of the day. That's why they don't prefer being principals. (P 1)

> Before we started to work, teachers definitely had prejudice. Working with male principals for years has been unusual for pre-school teachers, but we have never had a problem. Considering the concept of the manager, we did not have any problems being accepted, since it is a male role in the eyes of teachers, even if they work in pre-school. It was a new process for parents as well as teachers or other groups, but we had no problems with parents either. Even after we started as a manager, we observed that there were fewer complaints when a male manager became a manager. (P 2)

> We were very well received because there was an administrative problem that had accumulated over the years. As you know, female teachers did not want to be principals. Many of them have done this

> work by proxy. But when we became the principal, they saw an authority, and it was nice to accept it. They saw that we were getting things done. They even said that these things could be done like this; it was easy, and then they started to aspire to this field. (P 3)

> I think that being a male administrator in pre-school has managerial contributions. I say this based on my previous experience. Both teachers and staff approach me more positively. I think female school principals have become more oppressive. (P 4)

The findings obtained are in line with the research results available in the literature. It is possible to interpret this situation as the view that the administration is male-dominated not only because of the patriarchal social structure of Turkish society, but also because it has a more global structure. The results of this dimension support the formation of the concept of glass escalator, with research results stating that men are supported by their female supervisors and colleagues in the career development process (Budig, 2002; Evans, 1997; Fairhust & Snavely, 1983; Hultin, 2003; Maume, 1999; Morris, 2010; Simpson, 2004; Williams, 1992, 1995; Wingfield, 2009; Zimmer, 1998). It is possible to interpret the harmony between the findings and the research results as the view that management is a man's job not only because of the patriarchal social structure of Turkish society but also because it has a more global structure.

Within this dimension, it is possible to claim that time restrictions and, hence, family resbonsibilities, particularly in the light of first participant's opinion, play a significant influence in career development of women. This viewpoint is supported by various research findings in the literature (Elliot & Smith, 2004; Erkol, 2015; Güldal, 2006; Kirchmeyer, 2002; Mathe, 1989; Mayatürk, 2006; Neale and Özkanlı, 2010; Negiz and Yemen, 2011; Sağlam & Bostancı, 2012, Weber, 1998).

These factors, which are effective in the career development of women, are the result of cultural structure. It is possible to say that cultural structure is effective in educational institutions, which are a part of the social system. Masculine cultures such as Turkish society give importance to features such as independence, competition, power, and self-confidence (being assertive) (Hofstede, Hofstede, & Minkov, 1991). Hofstede, Hofstede and Minkov (1991) state that education and professional life are powerful sources of cultural learning and that more formal communication takes place in organizations with a high power distance (Hofstede, 1984). The participant view that high power distance is effective on organizational communication is as follows:

> As an administrator, I always try to keep my relationships with teachers at a certain level. Although I do not set very hard boundaries, I have a relationship that continues within reasonable limits. For example, I never address my teachers or employees by their first names, and I call them Mrs. (P 4)

Another remarkable point that emerged as a result of the research findings is the positive opinion of male school principals working in pre-school regarding the "Queen Bee Syndrome" (Örücü, Kılıç & Kılıç, 2007), which is considered an important organizational obstacle for women to rise to senior managerial positions. The opinions of the participants on the subject are as follows:

> I prefer open and transparent communication. Of course, there are still differences between the man-woman agreement and the woman-woman agreement. We see this in schools. Female teachers get along better with male principals. (P 2)

> It is more difficult for female teachers to work with female administrators. They conflict with each other. We don't have such a problem with male principals. (P 3)

Finally, the findings of the study show that gender stereotypes, which are a part of the cultural structure, can sometimes lead to the development of negative perceptions among parents about the male principals working in pre-school institutions. The participant opinions on the subject are as follows:

> I believe that a female school principal should be appointed here. In pre-school education, mothers are mostly concerned with the school process of the child. Male parents are rarely concerned with school unless it is absolutely necessary. The ladies seek out the assistant principal because they need someone with whom they can better express themselves. They are averse to approaching male principals. They express themselves more easily to me because of my field, but they prefer female assistant managers. In Turkey, only 5% of pre-school principals are male. Even if the parent intends to file a complaint, the assistant principal is the first person he contacts. I believe that female parents communicate more easily with female assistant principals. When children graduate from here and enter primary school, there is no such thing. I don't know whether they want to see us as mothers or what kind of perception there is that they don't prefer us. (P 1)

> Some of the parents' concerns and apprehensions cause issues. We hired a gardener at the start of the year, and he was the only male employee aside from myself. Later, our male teacher came. "Sir, how many male staff members are there in this school?" a parent inquired at a parent-teacher conference. Now it's difficult for me to send my child to school. My anxiety level rose. "What if it's harassment?" you might wonder. I assured the parents that everything was done following the rules, that there would be no harassment, and that the children would never be alone. I attempted to console him. I told him he shouldn't be concerned in that way. (P 3).

Considering the above-mentioned findings, it is possible to say that women employees are preferred by parents in pre-school education institutions as a result of the stereotypes shaped by the social structure, which is a summary of the information we have about certain groups (Kağıtçıbaşı, 2010).

DISCUSSION & CONCLUSION

Research findings reveal that the concept of tokenism, which was put forward by Kanter (1977, 1993), and which reveals a disadvantageous situation for female managers, turns into an advantageous situation when considered in terms of male principals. This situation, named “Glass Ceiling Syndrome” by Williams (1992), can be seen in pre-school educational institutions. One of the reasons why managers prefer to work in these institutions is the possibility of promotion. As a result, visibility, which is defined as a negative feature for female managers, gives male principals a chance to lead as leaders.

It is possible to say that culture plays an important role in defining male principals as leaders. The paternalist leadership tendency, which emphasizes the concept of family and has significant differences in tendency between genders, is known to increase in societies with high power distance and collectivist values, such as Turkish culture (Cesur, Erkilet & Taylan, 2019; Çalışkan & Özkoç, 2016). This situation makes it easier for men who are more suitable for the father role to prefer management with a leadership position and to be supported.

The fact that male administrators are more likely to be viewed as leaders and that the management positions are consequently seen as more suitable for men is a result of the patriarchal structure of society. Patriarchy, which is defined as the domination or use of power by men over other people (Hearn, 1992), plays an important role in determining the nature of gender ideology in different contexts (Kandiyoti, 1988). However, the fact that the patriarchal structure's ability to maintain its existence so effectively in all areas of life means that this structure is internalized by women can’t be denied (Köstek, 2007).

It is also a result of culture-related factors that male school principals have a positive perception of the Queen Bee Syndrome (Zel, 2002), which is defined as the use of women against women by adopting male attitudes and trying to eliminate the competition of other women. As a result of these culture-related factors, it can be said that men consider themselves suitable for the managerial role, and they find female managers less successful in this regard. The managers participating in the research state that male managers are more successful than female managers in terms of establishing authority, solving problems, and communicating with female employees. According to Kanter (1993), this situation is caused by gender stereotypes accepted by both men and women in society, as well as the roles attributed to women and the masculine organizational structure formed. Stereotypes are beliefs about the characteristics shared by people in a particular group or social category (Taylor, Peplau, and Sears, 2008) or the behaviours that society expects from women and men concerning their gender (Çelik, 2008). In many countries in the world, management is defined by men and is defined by practices consisting of male lives and values. The fact that the masculine structure that dominates the business world forces women to practice these stereotypes also causes women to adopt stereotypes about themselves and to believe that they cannot carry out their managerial duties (Limbach, 1994; Groot, 2010), so it can be thought that male managers are preferred.

Another important reason why women do not prefer to take place on management positions is the time pressure created by their social roles. Negiz and Yemen (2011) found that the responsibilities of "family, children, and the role of women as “wives" have a decisive role in the career development of women managers and that the reflections of traditional social understanding in family and business life sometimes affect women's career goals in their decisions. It has a compelling and sometimes internalizing effect; women have to make time and career plans while determining their priorities in working life, and therefore they lag behind men in the promotion to the top.

Adler (1999) emphasizes that the roles defined for the individual must be compatible with the division of labor, which is an absolute condition for the preservation and continuation of human society. In this context, it can be said that the expectations regarding women's work and family roles (Weber, 1998) play an active role in women's not choosing the managerial position due to their social roles. Indeed, Mathe (1989) states that women prefer professions with more flexible working hours to be able to fulfill their motherhood and housewife duties,

which are the roles that social life imposes on them, without interruption. Furthermore, it can be asserted that the fact that teaching is defined by society as a profession requiring love for students and that this definition is also effective in women's choice of teaching as a profession, The metaphors developed by the students about the teacher often have characteristics that are devoted to mothers, such as "informative, nurturing, loving, protecting, pure, sensitive, valuable, and guiding" (Tulunay-Ateş, 2016).

It can be said that the fact that women constitute the dominant group in pre-school education institutions plays a part in shaping the perception of teachers in pre-school educational institutions. This situation also shows itself in the metaphors developed for pre-school teachers. The results of the metaphor research conducted for pre-schoolers and their teachers indicate that the metaphors of "house, tree, flower, sapling, the beginning of life, the first step, the first step of the ladder, water, and seed" (Ertürk-Kara, 2014) are frequently used for pre-school education; it also shows that the metaphors of "information source, shaper, character developer, guide" (Soydemir, 2011) are frequently used for pre-school teachers.

When the metaphors produced regarding the perceptions of teachers in pre-school education institutions are examined, it is understood that pre-school institutions are seen as the beginning of educational life, and pre-school teachers are seen as individuals who are protective and shape students with love and compassion. Based on this situation, it is possible to say that pre-school teaching characteristics are closely related to stereotypes attributed to women, and this situation causes a slow change in the number of male pre-school teachers. The fact that women prefer pre-school teaching field also supports this perception. It is seen that 94.3% of the teachers in pre-school education institutions are women and 5.6% are men (MEB, 2019).

The definition of pre-school teaching as a female profession not only causes a slow change in the number of male pre-school teachers, but also causes male pre-school teachers who choose this field to have problems in the learning process and working life. The results of the research conducted by Haskan-Avcı, Karababa & Zencir (2019) revealed that male pre-school teacher candidates have problems in personal relationships and communication, such as the reactions of the society and faculty members towards their gender, mostly due to the male minority, and the stereotypes of parents towards male pre-school teachers.

Another study conducted by Yağbasan and Aksoy (2016) shows that the main reason why male teachers aren't preferred in pre-school education institutions is that men are not trusted to show as much compassion and attention as women. Because of this streotype, male students studying in the preschool teaching department have a more negative perspective towards the teaching profession than female students studying in the same department. (Kızıltaş, Halmatov and Sarıçam, 2012; Manalova-Yalçın and Özgen, 2017). Also, parents' point of view is that women will be more successful because they have a sense of motherhood, are more tolerant and patient, can communicate better with children and are more interested in them, are more careful, and can better understand children's education (Koçak and Kaygusuz, 2019). This perspective can be said to be effective in the formation of this situation.

SUGGESTIONS

Professional stereotypes and situations that develop due to these stereotypes (such as "glass ceiling syndrome") are frequently mentioned in the literature. However, there are not enough studies in the literature on men working in fields such as pre-school teaching and nursing, which are widely accepted as women's professions. Although the majority of teachers working in pre-school education institutions are women, the number of male pre-school teachers is increasing from year to year. In this context, issues such as the individual characteristics of male pre-school teacher candidates who prefer to study in this field and the reasons for choosing the field are also open to research.

The problems that male pre-school teacher candidates experience during their university education are another issue that needs to be investigated. The impact of social stereotypes on these students and the perspectives of field teachers, classmates, and others on male pre-school teacher candidates are among the issues that need to be addressed. The opinions of male pre-school teacher candidates about professional self-perception and the factors affecting professional self-perception, field adequacy, and the factors that cause these opinions are also among the issues that need to be addressed.

In this study, the experiences of male pre-school principals with the concept of the glass escalator are discussed. It is important to study the concept of glass escalators in different professions in terms of their contribution to the literature. In addition, in this study, the concept of the glass escalator is included only through the experiences of male pre-school administrators. It is also important to investigate the culture-related factors that caused the formation of the glass escalator concept and even to conduct comparative research on this subject,

including in different countries. Finally, the concept of the glass escalator has a structural and social impact on individuals who experience it. Individual results are also among the issues that need to be investigated.

Educational levels are parts of a whole that complement each other. In pre-school education institutions, beside the psychomotor, physical, social, emotional, mental, and linguistic development of children, their socialization and preparation for the formal education process are also in question. As seen in the results of the study, parents prefer female pre-school teachers for different reasons. However, some of the parents who prefer female pre-school teachers prefer male primary school teachers, especially for boys in the primary education period. It is possible to interpret this situation as parents and even society accepting pre-school education institutions as a different field from formal education. In this context, it is important to investigate the gender preferences of the parents of male students in the pre-school and primary education periods and the reasons for these preferences.

Finally, pre-school education is critical for developing a child's self-concept and sexual identity, as well as an independent personality within the framework of cultural socialization norms. From this perspective, it is possible to conclude that male pre-school teachers will have a positive impact on the development of boys' personalities. In this context, it is thought that long-term qualitative studies and experimental studies, in which the effects of male pre-school teachers on the development of boys, can be observed, will contribute to the literature. And lastly, this study is limited to male school administrators working in pre-school education institutions in Kocaeli. Considering the perception that the cultural structure creates on male preschool teachers and principals, it is useful to consider the subject in a more comprehensive way with different aspects.

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The Impacts of Erasmus+ on Foreign Language Development

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Abstract

Through a quantitative research model, this paper deals with the improvement of English language skills (listening, reading, vocabulary and grammar) after Erasmus+ programme. The assessment results of OLS (Online Linguistic Support) system which is organized by European Commission [EC] are taken as a source for data collection process. By means of this linguistic support, students are subject to two assessments which are held before-and after-mobility as a mandatory regulation of the programme. 213 Turkish Erasmus+ students who sojourned in different European countries were applied a questionnaire that inquires OLS assessment results. The collected data about the evaluations of aforementioned skills was analyzed via Wilcoxon Signed-Rank Test. Results demonstrate that reading, listening, vocabulary and grammatical competences of the participants improved thanks to studying abroad even after one semester. Moreover, the relationship between initial and final results of the assessments were also examined in order to search to what extend initial level of proficiencies effect after mobility language development. According to analysis, it is found that students who were initially at A2 and B1 on CEFR levels progressed more than other students and improved their English language in respect of reading, listening, grammar and vocabulary.

Keywords: Study abroad, Erasmus+, English language development, OLS

Erasmus+'ın Yabancı Dil Gelişimi Üzerine Etkileri

Öz

Bu makale, nicel bir araştırma modeli aracılığı ile Erasmus+ programından sonra İngilizce dil becerilerinin (dinleme, okuma, kelime bilgisi ve dilbilgisi) gelişimini ele almaktadır. Veri toplama sürecinde Avrupa Komisyonu tarafından düzenlenen OLS (Online Linguistic Support) sistemi değerlendirme sonuçları kaynak olarak alınmıştır. Bu dil desteği aracılığı ile öğrenciler, programın zorunlu bir uygulaması olarak, faaliyet öncesi ve sonrası olmak üzere iki değerlendirmeye tabi tutulmaktadırlar. Avrupa'nın farklı ülkelerinde kalan 213 öğrenciye OLS değerlendirme sonuçlarının sorgulandığı bir anket uygulanmıştır. Yukarıda sözü edilen yeterliliklerin değerlendirilmesi ile ilgili toplanan veriler Wilcoxon İşaretli Sıra Testi ile analiz edilmiştir. Sonuçlar, bir sömestr sonrasında bile katılımcıların yurtdışında eğitim sayesinde okuma, dinleme, kelime ve dil bilgisi becerilerinin geliştiğini göstermektedir. Ayrıca, başlangıçtaki yeterlilik düzeylerinin faaliyet sonrası dil gelişimini ne ölçüde etkilediğini araştırmak için başlangıç ve nihai değerlendirme sonuçları arasındaki ilişki de incelenmiştir. Analize göre, CEFR seviyelerine göre başlangıçta A2 ve B1 seviyesinde olan öğrencilerin diğer öğrencilere göre daha fazla ilerleme kaydettikleri ve İngilizce bilgilerini okuma, dinleme, dilbilgisi ve kelime bilgisi açısından geliştirdikleri tespit edilmiştir.

Anahtar kelimeler: Yurt dışında eğitim görmek, Erasmus+, İngilizce dil gelişimi, OLS

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INTRODUCTION

Snowballing of globalization which entails communication among nations, institutions and individuals from different cultural and linguistic backgrounds compels people learning foreign languages. This remarkable development impacts technology and science, making international communication quite vital and inevitable. Consequently, knowing foreign/second languages turns out to be a prerequisite for a quality living and a must for personal development, the main philosophy of the European Union, which aims to preserve diversity in unity (European Commission, 2021).

English, being the lingua franca of today, is the source of all kinds of information, gathering millions for very different purposes such as economics, health, business, sports activities, etc. By reaching a very global dimension, thanks to being the most spoken language in the world, it continues to captivate everyone, either as a foreign or second language. The ability to reach this globalized level has never been the destiny of other languages in history (Björkman, 2013), making it an impressive linguistic phenomenon that influences a momentous amount of the world's population as a native or additional language. Therefore, learning English becomes a purposive, functional and advisable state.

The best technique to learn a foreign language has remained under investigation for years, and numerous studies have been conducted to find answers. Although various factors, such as age, intention, level, learning styles, and strategies of the students, are determinative, learning in natural and real-life contexts, like acquiring a language, is believed to be the most effective and retentive way, like a magic potion (Serrano, 2010; Twombly et al., 2012; Surtees, De Keyser, 2010; Doerr, 2019; Kinginger, 2009). Since this unconscious learning is associated with the immersion technique, studying abroad is a highly favorable action in order to cement language skills (Llanes et al., 2016; Kinginger, 2008; Carroll, 1967). Erasmus+, which is the flagship program of EU, becomes the most preferable action as a qualified and reliable way to study abroad, thanks to many reasons, such as the considerable amount of financial support, flexibility, ease, assurance of recognition, allowance for employability, and assistance for personal and linguistic development (Gonzalez-Baixauli et al., 2018; Aydın, 2012; Teichler, 2015; Cardwell, 2019).

This study aims to determine the improvement of English proficiency levels of participants after a one-term mobility, given that the development of linguistic proficiency is the primary reason for preference. The assessments' results of the Online Linguistic Support (OLS) system will generate the source of data, and the scrutinized competences will be the ones measured by the system: reading, listening, grammar, and vocabulary competences.

OLS, organized by the EU, provides free online language courses and two compulsory assessments available in all EU languages. The mandatory before-and after- mobility assessments cover only aforementioned competences, which form the frontiers of investigated competences. In addition to scrutinizing how effective Erasmus+ is in improving language skills, another scrutinized feature will be how previous proficiency levels can affect final proficiency levels.

LITERATURE REVIEW

Since its inauguration thirty-four years ago, Erasmus+ has evolved both structurally and conceptually. Conceptual renewals, simplified rules, extended scope and budget, organizational changes are some transitions that have always kept the program on the top of all short-term mobility programs. This means that one of the main reasons why people choose to participate in Erasmus+ is to improve their language skills. (Mızıkacı & Arslan, 2019; Di Pietro, 2015; Botas & Huisman, 2013; Krzaklewska, 2008; Coleman, 1998).

Beyond doubt, enormous exposure to the target language, thanks to the flow of real-life situations and non-stop immersion, cannot be held equal to formal language education or partly language exchanges with native speakers, either face-to-face or online. This is because it forces the capacity of students and prevents them from reverting to their native languages when they feel stuck. Therefore, being away from familiar environment with Erasmus+ provides a golden opportunity for learners to practice English.

The impact of sojourning on the development of foreign/second languages, which is the main point of this study, has been examined by many researchers. On the whole, these numerous studies evince a positive correlation between these two variables by means of enabling both explicit and implicit learning environments in unison (Doerr, 2019; Cojocaru, 2018; Kenne, 2014; Kinginger, 2011; Tanaka & Ellis, 2003; Davie, 1996). For example, the study by Llanes et al. (2016) proves the improvement of overall English proficiency by examining Spanish/ Catalan Erasmus outgoing students who spent a term in non-English speaking countries and had to use English as a mediating language.

Additionally, the studies that focus on the improvement of specific language skills outnumber those related to overall linguistic development. The majority of these studies are based on the growth of oral skills (Beattie et al., 2014; Lopez-Serrano, 2010; Juan-Garau & Perez-Vidal, 2007; Segalowitz & Freed, 2004; Lennon, 1990) while the number of studies that focus on writing proficiency (Isabelli-Garcia et al., 2018; Perez-Vidal & Barquin, 2014; Perez-Vidal & Juan-Garau, 2011) and reading proficiency is quite limited (Li, 2015; Taillefer, 2005). A great number of those studies are mostly based on a comparison of study abroad (SA) and at-home (AH) contexts through longitudinal observations and qualitative techniques, while the ones that are grounded in quantitative data are limited.

Development of Vocabulary Knowledge

As vocabulary knowledge forms the foundation of the four main language skills (Brown, 2007), enriching it is crucial to becoming successful in language learning (Schmitt, 2010). Rich vocabulary knowledge is essential to mastering a foreign or second language (Elgort & Nation, 2010; Hu & Nation, 2000; Schmitt, 2008). The oft-cited quotation by Wilkins (1972) makes this importance very clear: "Without grammar very little can be conveyed, without vocabulary nothing can be conveyed" (as cited in Lessard-Clouston, 1994, p. 69). Hence, acquisition of vocabulary after sojourn has been a key focus of many researchers.

The robust results of these studies provide evidence of the positive impact of studying abroad on vocabulary development. One of the oldest investigations, conducted by Milton and Meara (1995), found that initially low-level SA students outperformed AH-context students thanks to the integration of formal classes and real-life input. They found that that vocabulary knowledge developed five times faster. They found that vocabulary knowledge developed five times faster. Ife et al. (2000) supported these findings, but with a difference: more progress was observed among the initially intermediate students. Another relevant study is from Tracy-Ventura (2017), who investigated both lexical development and the use of low-frequency vocabulary of 27 anglophone Spanish learners residing for nine months in a Spanish speaking country, and extrapolated the very development of lexical sophistication.

On the other hand, according to some studies, it is evident that SA may have only minimal or no effects on vocabulary knowledge, vocabulary usage, and vocabulary acquisition compared to formal classroom education AH (Collentine, 2004; O'Donnell, 2004). Regarding Collentine's study, AH learners surpassed SA students in terms of many lexical items, such as producing more adjectives and nouns. Furthermore, in Dewey's (2008) study, there was not a huge discrepancy between the SA and AH learners in terms of vocabulary gain.

Development of Grammatical Competence

Grammar, which is too important to be ignored, plays a crucial role in language development as it enables individuals to produce systematic and effective oral or written expressions. As Batstone (1994) declares, "Without grammar, language would be chaotic; countless words without the indispensable guidelines for how they can be ordered and modified" (p. 4). Despite this awareness, how studying abroad affects grammatical competence remains a relatively less studied area and the scant studies that have been presented reveal conflicting results, with many showing only partial support when compared to at-home group students (Juan- Garau & Perez- Vidal, 2007; Collentine, 2004; O'Donnell, 2004; Walsh, 1994; De Keyser, 1991). For instance, Marques-Pascual (2011) investigated verbal morphology, inversion of subject-verb word order, and after examining 42 students, it was found that at-home students were better at verb agreement morphology, while studying abroad only helped intermediate students to improve subject-verb inversions and subject omissions. Furthermore, SA students were not better than AH students in using the accusative and dative cases according to Arnett's (2013) findings.

Contrary to these studies, there are some examinations that ascertain some positive impacts. One of those is the study which resulted in a convincing impact of SA on the reduction of some specific types of errors per clause, even after a short-term mobility experience (Llanes and Munoz, 2009). Again, Llanes (2012) elucidated a development in SA participants' accuracy in L2 through a self-reported survey replied to by 21 Erasmus students. In addition to these studies, Duperron (2006) attained a noteworthy development of tense and aspect in France among students staying abroad in the first five months of a year study program in his pre- and post-program design study. Likewise, Möhle and Raupach (1983) discovered some gains in the grammatical competence of SA students, even if just a smidge, through their cross-linguistic project. According to another analysis concerning French learners in German and German learners in France, although French learners did not progress much, German learners' grammar skills changed in a noticeable way, especially in the reduction of formal errors (as cited in Regan et al., 2009).

Development of Listening Comprehension

The numerous studies that examine whether SA enchances listening comprehension skills show relatively consistent results and indicate significant gains (Cubillos et al., 2008; Kinginger, 2008; Saville-Troike, 2006; Allen & Herron, 2003; Brecht et al.,1995). To achieve more developed aural skills, Davidson (2010) and Allen and Herron (2003) emphasize the effectiveness of longer sojourns abroad. However, there have been studies that advocate that even a short period of residing abroad can have a significant impact on achieving superior listening comprehension (Llanes & Munoz, 2009; Cubillos et al., 2008). Davidson and Shaw (2019) measured the L2 gains of full-year US participants in terms of their speaking, reading, and listening skills. They concluded that advanced students progressed more. Additionally, they achieved a remarkable correlation between pre-listening proficiency level and post-reading and post-speaking skills. The positive impact of SA on the area of listening comprehension, specifically on learners' performance in task-based listening comprehension, was also demonstrated by Kinginger (2008).

Development of Reading Comprehension

Reading comprehension, which occupies an essential position as a receptive skill, is one of the other under-researched areas but creates a general mood of optimism. Although Ilida and Herder (2019) discovered a noteworthy gain in the general reading abilities of twenty-seven English learners, the development was not at the same degree for academic reading abilities. The natural immersion environment, which triggers motivation and confidence, was found to be quite effective in the development of reading comprehension, according to the studies directed by Kraut (2017) and Huebner (1995). In addition to these studies, some researchers emphasized the significance of the time spent on mobility. While even a short period of stay is explored as influential on reading comprehension and fluency (Borras & Llanes, 2020; Khoroshilova et al., 2015), many other studies claim that the longer the sojourns are, the more functional and efficacious they are because of the extra exposure to the host community, its culture, and its language (Issa & Zalbidea, 2018; Fraser, 2002). Savage and Hughes (2014) examined 140 Chinese learners before and after a 20-hour of short-term summer intensive language course covering in China. Numerous natural opportunities and contexts provided by the intensive immersion in a native speaker country definitely improved students' scores, especially in reading and listening skills when pre-and post-test results were compared. However, Fraser (2002) advocated longer sojourns. In his study, he compared a short-term and long-term group of students and concluded that the students who stayed longer improved their reading and writing skills more.

The comprehensive analysis of the data collected by all the researchers mentioned above displays robust, striking, and sometimes puzzling and confusing results for the four measured skills. As a traditional wisdom and general perception, people believe that one cannot acquire a real competence in a foreign or second language without spending time abroad. Mcmanus et al. (2020) carried out a study supporting this belief, in which 56 French and Spanish learners staying abroad for nine months were investigated before, during and after their mobility. The researchers found ongoing development in complexity, accuracy, fluency, and lexis. However, the real mystery here is how to use the target language as frequently as possible. The more engagement in social networks, the more practice in the target language. By means of some designed interventions, such as using a task-based approach, the interaction with the host culture and target language can be maximized, resulting in further appreciation of the experience (Erickson et al., 2020). Undoubtedly, there are some variables that can induce linguistic development of the learners, such as initial proficiency level (Dewey et al., 2014; Mcmanus et al., 2020).

METHOD

As is apparent from the discussions and given data presented so far, this study focuses on the effects of Erasmus+ on the development of participants' foreign language skills, particularly in the areas of reading, listening, grammar, and vocabulary, as well as the relationship between their initial and final proficiency levels in these competences. In order to examine the effectiveness of sojourning, two research questions were formulated:

1. Do the listening, reading, grammar, and vocabulary proficiencies of EFL Erasmus students differ before and after participating in the Erasmus Program?

2. What is the relationship between the students' previous proficiency levels in listening, reading, vocabulary, and grammar and their linguistic competences after their mobility?

To investigate the answers to these questions, 213 Turkish outgoing Erasmus+ students majoring in English as a foreign language were included in this quantitative study. The study investigated the language development after one term of mobility, as part of a four-year degree programme, in a non-anglophone European country. Although Erasmus+ tends to attract more female students, there were more male students (122) than females (91) in this study. The year of attendance and departments of the students varied (See Appendix 1 and Appendix 2).

Data Collection Instrument

Through an online questionnaire, students were asked to provide their OLS pre-and post-assessment results in order to collect data on their development in reading, listening, grammar, and vocabulary competences. These results were also analyzed to understand the relationship between initial and final development of these competences.

OLS provides linguistically supportive online courses in all official EU languages and assesses the development of the target language that students are responsible for during their mobility, with two compulsory exams. Preserving the linguistic diversity of the EU is one of the programme's objectives. The assessments are conducted before students depart and after they return home. Grammar, vocabulary, listening, and reading competences are measured in line with the Common European Framework of Reference (CEFR) (Erasmus+ OLS, 2020). The initial assessment is a prerequisite, and the final assessment measures progress during the sojourning process (Erasmus+ OLS, 2020). In this regard, OLS has both formative and summative roles rather than being only a participant certification programme. Throughout these assessments, students are exposed to 55 questions: 10 questions for listening comprehension, 10 questions for reading comprehension, 20 questions for grammatical competence, and 15 questions for vocabulary knowledge based on multiple-choice and gap-filling activities. Questions do not need to be answered in a single entry and are organized progressively and adaptively to the participants' levels (Erasmus+ OLS, 2020).

FINDINGS

The following table illustrates the normal distribution test conducted on the collected data from OLS listening, reading, grammar, and vocabulary test results, as well as the average points.

Table 1. Tests for Normality

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Grammar Exam	.195	213	.000	.907	213	.000
Vocabulary Exam	.207	213	.000	.900	213	.000
Reading Exam	.203	213	.000	.891	213	.000
Listening Exam	.210	213	.000	.911	213	.000
OLS Exam	.315	213	.000	.849	213	.000

As shown in Table 1, the H_0 hypothesis is rejected for all tests, and the test statistics are significant. Since the data does not follow a normal distribution, Wilcoxon Signed Ranks Test is used to analyze the improvement in each related competence.

Research Question 1 seeks whether participants improve their grammar, vocabulary, reading, and listening skills. Table 2 through 6 demonstrate the progress of each skill, as indicated by numerical data.

Table 2. Results of Wilcoxon Signed-Rank Test for Pre and Post Grammar Exams

Pre-Grammar and Post-Grammar	N	Mean	Mean Rank	Sum of Ranks	Z	Asymp. Sig. (2-tailed)
Negative Ranks	13	3.75	56.65	736.50	-9.193	.000*
Positive Ranks	130	4.60	73.53	9559.50		
Ties	70	-	-	-		

***** Probability value < 0,05

Table 2 shows that there is a statistically significant difference between the pre- and post-grammar tests ($z = 9.193$, $p < 0.05$). This significant difference is evidence of the development in grammatical competence, as the majority of the students had a positive rank. Specifically, 130 students increased their proficiency level in grammar, while 13 students regressed and 70 of them did not make any progress nor experience regression.

Table 3. Results of Wilcoxon Signed-Rank Test for Pre and Post Vocabulary Exams

Pre-Vocabulary and Post-Vocabulary	N	Mean	Mean Rank	Sum of Ranks	Z	Asymp. Sig. (2-tailed)
Negative Ranks	15	3.92	86.43	1296.50	-8.662	.000*
Positive Ranks	138	4.75	75.97	10484.50		
Ties	60	-	-	-		

***** Probability value < 0,05

It can be inferred from the analysis presented in Table 3 that there is a statistically significant difference between the pre- and post-vocabulary tests ($z = -8,662$, $p < 0.05$). This significant difference indicates the development of proficiency levels in vocabulary, as 138 students indicated improvement in their grammar skills

by being in the positive ranks. While proficiency levels of 15 of them worsened, 60 students did not show any change.

Table 4. Results of Wilcoxon Signed-Rank Test for Pre and Post Reading Exams

Pre-Reading and Post-Reading	N	Mean	Mean Rank	Sum of Ranks	Z	Asymp. Sig. (2-tailed)
Negative Ranks	7	3.95	67.00	469.00	-9.602	.000*
Positive Ranks	134	4.88	71.21	9542.00		
Ties	72	-	-	-		

***** Probability value < 0,05

A statistically significant difference between the pre- and post-reading tests (z = -9,602, p < 0.05) is deduced in Table 4. This significant difference indicates the development of reading skills, as the majority of students are in positive ranks. However, the number of students who remained at the same level appears to be relatively high, at 72.

Table 5. Results of Wilcoxon Signed-Rank Test for Pre and Post Listening Exams

Pre-Listening and Post-Listening	N	Mean	Mean Rank	Sum of Ranks	Z	Asymp. Sig. (2-tailed)
Negative Ranks	11	3.87	74.45	819.00	-9.333	.000*
Positive Ranks	139	4.85	75.58	10506.00		
Ties	63	-	-	-		

***** Probability value < 0,05

Table 5 shows a statistically significant difference between the pre and post-listening tests (z = -9,333, p < 0.05), indicating the development of participants' listening comprehension. Out of 213 students, 139 moved to a higher proficiency level, while 11 students obtained lower scores in the post-listening assessment. Based on the pre- and post-test scores, it can be observed that the majority of students achieved positive rank improvements.

Table 6. Results of Wilcoxon Signed-Rank Test for General OLS Evaluation

Pre- OLS and Post-OLS	N	Mean	Mean Rank	Sum of Ranks	Z	Asymp. Sig. (2-tailed)
Negative Ranks	3	3.67	62.50	187.50	-11.875	.000*
Positive Ranks	177	4.84	90.97	16102.50		
Ties	33					

***** Probability value < 0,05

The analysis presented in Table 6 reveals a statistically significant difference between the general pre- and post-test results (z = -11,875, p < 0.05), indicating that a majority of students demonstrated positive improvement in their overall English proficiency. Specifically, out of the 213 students who took the exam, 177 increased their proficiency level in grammar, only 3 experienced a decline in their success, and 33 students maintained their initial level. This data supports the positive impact of the SA program on the development of general English proficiency.

Moving on to Research Question 2, this inquiry focuses on the relationship between students' initial proficiency levels and final proficiency levels with respect to grammar, vocabulary, reading and listening competences. The Figure I below illustrates the progress made by students in each related skill. CEFR levels are used as descriptors to specify progressive mastery of each skill. The six broad levels are: breakthrough (A1), way through (A2), threshold (B1), vantage (B2), effective operational proficiency (C1), and mastery (C2). These levels correspond to the classical division of elementary, intermediate, and advanced levels (Council of Europe, 2001, p. 21). Additionally, A1- level indicates pre-A1 students.

The progress of each student's initial linguistic competence and final levels are illustrated as figures indicating the net numbers of gains and losses for each competence. The numbers represent the students who moved to a different level from their initially recorded levels.

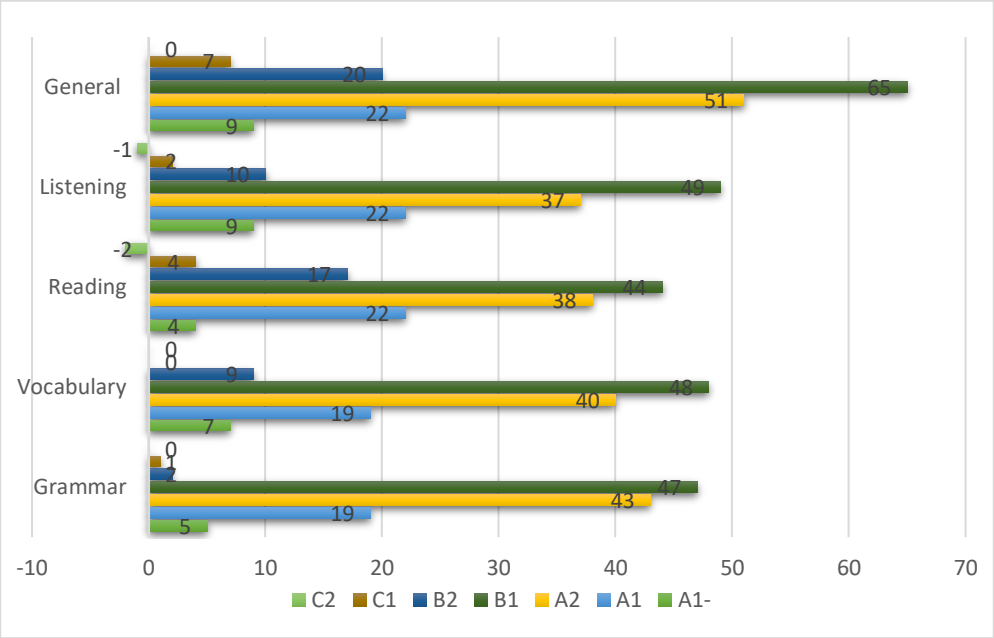

Figure 1. *Net number of gain and losses for proficiency levels*

Upon close examination of Figure 1, it is evident that previously B1 level students demonstrated more improvement in their language skills than other students, represented by the dark green color. According to the analyzed data, 49 students improved their listening proficiency, 48 students improved their vocabulary competence, and 65 students improved their general linguistic skills. Following B1 level students, the most improved group were the previously A2 level students. The group that demonstrated the least amount of improvement consisted of previously B2 and C1 students. All C2 students are represented by 0, as it is the highest proficiency level in CEFR and there is no possibility to progress further. Another progressing group consisted of students previously at A1- and A1 levels, who improved their capacity in all skills mentioned, although not as much as B1 students. Some students moved to a lower proficiency level, such as three students (1 in listening and 2 in reading) who were previously at the C2 level, but were unable to improve their listening and reading comprehension skills and moved to lower proficiency levels.

DISCUSSION

The current study investigated the linguistic development of Turkish Erasmus+ short-term outgoing students in non-English speaking countries regarding their grammatical, vocabulary, reading and listening competences. To date, there have been a limited number of studies that have investigated the development of English as a foreign language after studying in a non-English speaking country.

Research question one aimed to measure the extend to which learners' knowledge of vocabulary and grammar, and proficiency in reading and listening comprehension, increased after a one-term mobility abroad as measured by the Wilcoxon Signed-Rank Test. Results from comparing the pre-and post-tests of OLS established a statistically significant development, valid for each skill separately and overall proficiency. The positive impact of studying abroad on the development of EFL was also supported by Khoroshilova et al. (2015) conducting the research via students' perspectives, and Simonova and Kostolanyova (2020) who indicated the development of English skills after administering two questionnaires before and after mobility to 83 Erasmus+ incoming students at a Czech university. The significance of developing positive attitudes towards foreign language learning, which was also one of the main theories of Gardner (1985), was underlined in their study.

Research question two was designed to understand the relationship between students' initial and final proficiency levels. The majority of the participants who progressed and moved to upper CEFR levels after mobility were initially at B1 and A2 levels. However, the least successful group of students who upgraded their competences was initially at C1, A1, and B2 levels, respectively. This distribution indicates that progressing to higher levels was limited among the lowest and highest group of students, and it is not a coincidence. It is difficult to move further for students who are already advanced or who are at the beginner levels. Therefore, being at B1 or B2 level on CEFR before mobility is a prior condition to attend the Erasmus+ to comprehend the standard input encountered at school and at leisure. Students who are already fluent enough to communicate and understand basic

input during formal education and outside time can practice English more than those who were at A1, which is not a sufficient degree for academic or professional purposes.

CONCLUSION & IMPLICATIONS

Throughout this current study and prior ones examined, it has been found that studying abroad helps students to improve their English skills. Being required to use English both in academic setting and outside the classroom to survive provides opportunities to hear it and use it both orally and in writing. The cultural richness, increased problem-solving abilities, and self-confidence that Erasmus+ enables affect learners' attitudes towards learning a foreign language positively. The more social practice of English, the more progress is made. In this regard, even the effectiveness of short-term mobilities cannot be denied, although longer mobilities are assumed to be more beneficial thanks to breadth and depth of input and output opportunities.

Moreover, it is also obvious that previous levels of language proficiency, which are a multidimensional construct including grammar, vocabulary, semantics, syntax and so on, determine the final proficiency levels. Considering this fact, students need to be triggered to improve their English, and necessary language support should be given to nominees before leaving in order to increase the possibility of progress.

Last but not least, it is important to mention that there is a possibility of reduced skills after mobility. Therefore, mobility students need to be motivated to use their improved English skills after they return their home institutions through activities such as inviting them to Erasmus+ organizations, charging them with responsible for new incoming students, and making them mentors, etc.

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APPENDIX 1

Portrays of the Respondents' Academic Year of Attendance

Academic Year	Frequency	Percent	Valid Percent	Cumulative Percent
2015-16	26	12.2	12.2	12.2
2016-17	38	17.8	17.8	30.0
2017-18	42	19.7	19.7	49.8
2018-19	45	21.1	21.1	70.9
2019-20	62	29.1	29.1	100.0
Total	213	100.0	100.0	

APPENDIX 2

Portrays of the Respondents' Fields of Study

Fields of Study	*f*	*p*	Fields of Study	*f*	*p*
Archaeology	1	0.5	Chemical Engineering	3	1.4
Horticulture	1	0.5	Mechanical Engineering	13	6.1
Computer Engineering	10	4.7	Metallurgical and Materials Engineering	2	0.9
Environmental Engineering	1	0.5	Landscape Architecture	3	1.4
Electrical and Electronic Engineering	2	0.9	Psychology	2	0.9
Industrial Engineering	6	2.8	Radio, TV and Cinema	3	1.4
Agricultural Economics	1	0.5	Advertising	1	0.5
French Language and Literature	3	1.4	Health Care Management	1	0.5
Journalism	6	2.8	Primary School Teaching	2	0.9
Genetics and Bioengineering	3	1.4	Political Sciences	6	2.8
Food Engineering	3	1.4	Social Service	1	0.5
Public Relations and Publicity	3	1.4	Sociology	1	0.5
Geomatic Engineering	1	0.5	Town and Country Planning	1	0.5
Nursing	7	3.3	History	2	0.9
Law	3	1.4	Textile	1	0.5
English Language and Literature	9	4.2	Medicine	5	2.3
Biosystem Engineering	1	0.5	Soil Science and Plant Nutrition	1	0.5
Business	14	6.6	Tourist Guiding	1	0.5
Economics	5	2.3	Tourism	6	2.8
Theology	1	0.5	Turkish Language and Literature	1	0.5
ELT	1	0.5	International Relations	33	15.5
Civil Engineering	8	3.8	International Trade and Logistics	1	0.5
Statistics	1	0.5	Veterinary Medicine	4	1.9
Public Administration	9	4.2	Animal Science	1	0.5
Total	213	100			

Note: f = frequency, *p* = percentage

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An Investigation of Mathematics Teachers' Conceptions of Mathematical Literacy Related to Participation in a Web-Based PISA Course

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Abstract

In today's mathematics education, teachers are expected to have a sufficient understanding of mathematical literacy and to know how to incorporate mathematical literacy understanding into their instructional practices. Therefore, the purpose of this study was to investigate mathematics teachers' conceptions of mathematical literacy related to participation in a web-based learning environment about mathematical literacy and Programme for International Student Assessment (PISA). The case study method was used and the participants consisted of 20 mathematics teachers determined by the criterion sampling method. The data were collected by semi-structured interviews. In the data analysis process, content analysis was used. The results revealed that the participants who participated in the web-based PISA course conceptualized mathematical literacy in relation to the use of mathematical knowledge and skills to deal with real-life problems and associated supporting mathematical literacy with supporting the development of problem-solving skills. However, the others conceptualized mathematical literacy as having mathematical knowledge and skills to solve math problems and considered problem solving as a goal in supporting mathematical literacy.

Keywords: Mathematical literacy, conception of mathematical literacy, web-based PISA course, mathematics teacher

Matematik Öğretmenlerinin Matematik Okuryazarlığını Kavrayışlarının Bir Web Tabanlı PISA Eğitimine Katılımları Açısından İncelenmesi

Öz

Günümüz matematik eğitiminde öğretmenlerden yeterli matematik okuryazarlığı anlayışına sahip olmaları ve matematik okuryazarlığı anlayışını öğretim uygulamalarına nasıl entegre edeceklerini bilmeleri beklenmektedir. Bu bağlamda, bu araştırmada matematik öğretmenlerinin matematik okuryazarlığı kavrayışlarının, araştırmacılar tarafından matematik okuryazarlığı ve Uluslararası Öğrenci Değerlendirme Programı'na (PISA) ilişkin olarak desenlenmiş web tabanlı eğitime katılımları açısından incelenmesi amaçlanmaktadır. Bu amaç doğrultusunda araştırma nitel olarak desenlenmiş ve durum çalışması yöntemi benimsenmiştir. Araştırmanın katılımcıları ölçüt örnekleme yöntemi ile belirlenen 20 matematik öğretmeninden oluşmuştur. Araştırma verileri yarı-yapılandırılmış görüşmeler yoluyla toplanmış, veri analizi sürecinde ise içerik analizi yöntemi benimsenmiştir. Araştırma sonucunda, web-tabanlı öğrenme ortamını kullanan katılımcıların matematik okuryazarlığı kavramını günlük yaşamda karşılaşılan sorunların çözümünde matematiksel bilgi ve becerilerin işe koşulması ile ilişkili olarak ele aldıkları ve matematik okuryazarlığı gelişimini matematiksel düşünme becerisi gelişimi ile ilişkilendirdikleri görülmüştür. Diğer yandan, söz konusu öğrenme ortamını kullanmayan matematik öğretmenlerinin matematik okuryazarlığı kavramını matematiksel problemleri çözebilmek için bilgi ve beceri sahibi olmak şeklinde anlamlandırdıkları ve matematik okuryazarlığı gelişiminde matematiksel problem çözmeyi bir amaç olarak ele aldıkları sonucuna ulaşılmıştır.

Anahtar kelimeler: Matematik okuryazarlığı, matematik okuryazarlığı kavrayışı, web tabanlı PISA eğitimi, matematik öğretmeni

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INTRODUCTION

Today, the development levels of countries are associated with many factors such as economic structure, speed of producing and using knowledge, educational opportunities and the number of qualified individuals. In this context, in order to survive in global competition, countries need literate individuals who have the knowledge and skills required by the century and who can actively employ their knowledge and skills in daily life. Thus, the Organization for Economic Co-operation and Development (OECD) (2018) emphasized that countries need mathematically literate citizens in order to develop or sustain development. In this direction, in today's mathematics education, the ultimate goal is to raise mathematically literate individuals. According to Marciniak (2015), the purpose and expected outcome of mathematics teaching is mathematical literacy. It is thus essential that instruction in schools must be significantly revised so that students can have rich experiences to understand the role that mathematics plays in the world and to make the well-founded judgments and decisions needed by constructive, engaged and reflective 21st century citizens (OECD, 2018).

There are different interpretations or definitions of the concept of mathematical literacy. In this context, while some definitions revolve around basic mathematical skills (e.g., McCrone & Dossey, 2007; Powell & Anderson, 2007), others also incorporate higher order thinking skills (e.g., Hope, 2007; Jablonka, 2003). For instance, Jablonka (2003) argued that mathematical literacy can be considered as "the ability to use basic computational and geometrical skills in everyday contexts, as the knowledge and understanding of fundamental mathematical notions" (p. 76). On the other hand, McCrone and Dossey (2007) defined this concept as the capacity to understand the role of mathematics in daily life and to use mathematics to solve real-life problems. Regarding the different definitions of the concept of mathematical literacy, Madongo (2007) stated that the definitions provided in the literature link the idea of mathematical literacy to how mathematics should be used in real life situations.

It is known that mathematics teachers are one of the most important factors of mathematical literacy development. Martin (2007) stated that mathematics teachers and their educational practices play an important role in students' ability to use their mathematical knowledge to make sense of the world. Similarly, Milton, Rohl and House (2007) draw attention to the expectation from teachers to know how to incorporate mathematical literacy understanding into their instructional practices when and where necessary. As teachers' knowledge and instructional practices significantly influence mathematical literacy development, it is very important for teachers to be able to make sense of the concept of mathematical literacy (Genc & Erbas, 2019). Jamil and Khusna (2020) emphasized that mathematics teachers must have a good conception of mathematical literacy so that they can use right learning strategies.

An overview of the literature on mathematical literacy showed that there is increasing concern about how mathematics teachers conceive or understand mathematical literacy. Among these studies, Genc and Erbas (2019) investigated Turkish secondary mathematics teachers' conceptions of nature of mathematical literacy. They obtained seven different categories regarding participating mathematics teachers' conceptions of mathematical literacy: possession of mathematical knowledge and skills; functional mathematics; problem solving; mathematical thinking, reasoning and argumentation; innate mathematical ability; conceptual understanding; and motivation to learn mathematics. In another study, Boričić, Vulić and Videnović (2020) examined Serbian mathematics teachers' conceptions of mathematical literacy. The researchers examined teachers' description of mathematical literacy and their views of the assessment of mathematical knowledge. The results revealed four conceptions of mathematical literacy: knowledge about basic mathematical concepts (main formulas, operations, geometry objects, etc.); correct use of mathematical symbolism; use of mathematics in everyday situations; and developing a specific way of thinking. Lestari, Juniati and Suwarsono (2017) examined mathematical literacy conception of junior high school mathematics teachers in Indonesia. The results revealed that teachers had the conception that mathematical literacy was associated with problem solving using high-level issues and required higher order thinking skills.

Considering the significance of ensuring opportunities for all students to become mathematically literate, it is an important issue to examine how teachers from primary to high school make sense and perceive mathematical literacy. Besides, investigating teachers' conceptions is important in terms of supporting their professional development for implementing instructional strategies for development of mathematical literacy (Genc & Erbas, 2019). Indeed, Goos, Geiger and Dole (2014) emphasized that understanding teachers' conceptions of mathematical literacy provides insights into why teachers make particular instructional decisions regarding mathematical literacy. However, limited research has focused on middle and secondary school mathematics teachers' conceptions of mathematical literacy and development of mathematical literacy.

Accordingly, a web-based learning environment was designed by the researchers in order to inform mathematics teachers about mathematical literacy, PISA international assessment, and ways to promote students' mathematical literacy. Therefore, the purpose of this study was to investigate the conceptions of mathematical literacy held by mathematics teachers who participated in the web-based PISA course offered as part of the current research and those who did not.

Research Questions

To achieve this overarching goal, we focused on the following research questions:

1.What are mathematics teachers' conceptions of mathematical literacy?

2.What are mathematics teachers' conceptions of development of mathematical literacy?

3.What is the effect of the web-based PISA course on mathematics teachers' conceptions of mathematical literacy?

METHOD

This study aimed to investigate the effect of a web-based PISA course on mathematics teachers' conceptions of mathematical literacy. Accordingly, case study was used. Case study research helps the researcher to analyze and understand a phenomenon related to a specific group of people (Baxter & Jack, 2008; Bogdan & Biklen, 2007).

The Web-Based PISA Course

The web-based PISA course was designed by the researchers to inform mathematics teachers about mathematical literacy, PISA international assessment and how to promote students' mathematical literacy skills. The web-based PISA course consisted of three modules: i) theoretical knowledge module, ii) supporting mathematical literacy module and iii) PISA-like problem-posing module. The content of the web-based PISA course is presented in Figure 1. Registered mathematics teachers were able to access the content of the modules for 24 months.

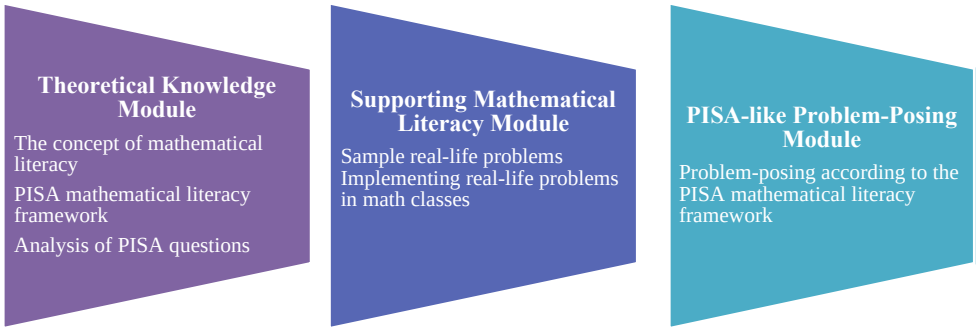

Figure 1. *Content of the Web-based PISA Course*

As seen in Figure 1, the theoretical knowledge module aimed to provide mathematics teachers with basic knowledge about mathematical literacy and PISA. Thus, the content of this module was the concept of mathematical literacy, PISA international assessment and PISA mathematical literacy framework. Besides, some PISA released items were analyzed in terms of mathematical processes and the underlying mathematical capabilities. Here, the reports related to PISA assessment and analytical framework published by the OECD formed the basis for the creation of the content.

In the supporting mathematical literacy module, it was aimed to provide teachers with knowledge about supporting mathematical literacy in mathematics learning environments. In other words, it was aimed to make teachers comprehend the relationship between fundamental mathematical capabilities and supporting them in a learning environment. Thus, sample real-life problems that were developed by the researchers and that can be used in order to support mathematical literacy development were presented. Besides, sample implementations of real-life problems in mathematics classes were also presented. The content of this module was prepared based on the results of the studies carried out by the researchers about designing and implementing real-life problems.

The PISA-like problem-posing module aimed to guide mathematics teachers to pose PISA-like problems gradually by using the components of the PISA mathematical literacy framework. In this module, online support was also provided for teachers.

Study Setting and Participants

The web-based learning environment has been made available with an introductory meeting, which was held in a conference room of the faculty that the researcher (first author) works in. A total of 126 middle and high school mathematics teachers working in Eskisehir central districts attended the meeting. The introductory meeting, which lasted about three hours, was held in the form of a workshop on mathematical literacy. The aim was to inform mathematics teachers about PISA international assessment and PISA mathematical literacy framework. During the meeting, information about the school in which the teachers work, their contact information and their willingness to participate in future studies that will be conducted by the researchers were also collected through a form. The participants of the study were 20 mathematics teachers (As shown in Table 1) who were selected through criterion sampling method. The selection criterion was registering for the web-based learning environment. By this way, 10 mathematics teachers who were registered for the web-based learning environment and 10 mathematics teachers who were not registered participated in the study.

Table 1. Characteristics of the Participants

Name	Gender	Graduation	Type of school	Teaching experience (years)	Registration
P1	Male	Faculty of Education	Middle school	14	Not yet
P2	Male	Faculty of Education	Middle school	17	Not yet
P3	Female	Faculty of Science	Middle school	20	Not yet
P4	Female	Faculty of Education	Middle school	1	Not yet
P5	Male	Faculty of Science	High school	7	Not yet
P6	Female	Faculty of Science	High school	3	Not yet
P7	Male	Faculty of Education	Middle school	10	Not yet
P8	Male	Faculty of Science	High school	4	Not yet
P9	Female	Faculty of Education	Middle school	1	Not yet
P10	Female	Faculty of Education	Middle school	2	Not yet
P11	Female	Faculty of Science	High school	8	Registered
P12	Female	Faculty of Education	Middle school	10	Registered
P13	Female	Faculty of Education	Middle school	16	Registered
P14	Female	Faculty of Science	High school	12	Registered
P15	Female	Faculty of Education	Middle school	12	Registered
P16	Female	Faculty of Science	Middle school	5	Registered
P17	Female	Faculty of Education	Middle school	8	Registered
P18	Female	Faculty of Education	Middle school	14	Registered
P19	Female	Faculty of Education	Middle school	14	Registered
P20	Female	Faculty of Education	Middle school	12	Registered

As shown in Table 1, all the registered participants were female and they had at least five years of teaching experience. On the other hand, teaching experience of the participants who were not registered varied from one to 20 years and most of them were working in a middle school.

Data Collection

In the data collection phase, semi-structured interviews were conducted with the participants. The interviews were conducted nearly four months after the introductory meeting. The mathematics teachers who registered for the web-based learning environment had accessed all module contents within the specified period. A voice recorder was used to record the interviews and each interview lasted nearly 30 minutes. The content of the semi-structured interview form and sample questions are presented in Table 2.

Table 2. Content of the Semi-structured Interview Form and Sample Questions

Section	Content of Section	Sample Questions
1	Questions to examine mathematics teachers' conceptions of the concept of mathematical literacy	-What is mathematical literacy? -What are the skills and/or competencies that a mathematically literate individual should have?
2	Questions to examine mathematics teachers' conceptions of development of mathematical literacy	-What are the roles of mathematics teachers in supporting mathematical literacy? - What are the knowledge, skills and/or competencies that a teacher should have to support mathematical literacy? - Do you think you have received good education to support mathematical literacy? Why/Why not?

A pilot study was also conducted with a voluntary middle school mathematics teacher, who was not involved in the main study. Thus, the clarity and comprehensibility of the semi-structured interview questions were assessed. In line with the teacher's views obtained in this process, the wording and sequence of some questions were updated and the interview form was put into its final form.

Data Analysis

The data of the present study were analyzed by employing content analysis method (Creswell, 2014). In this regard, detailed readings were repeated on the previously transcribed data. In this way, the final codes were identified and re-organized based on the codes created in the first readings of the data. Then, these codes were organized around meaningful categories and themes. Besides, the reliability analysis was carried out with an expert who has a doctoral degree in mathematics education. The expert worked on written transcripts of five participants determined randomly and conducted a study to assign codes and categories. Here, the ratio of the number of agreements to the sum of the number of agreements and disagreements was used as a measure of inter-rater reliability (Miles & Huberman, 1994). The comparison of the two coding outcomes showed 90% agreement, which was strong enough. The raters resolved all disagreements and revised the code definitions until a full agreement was reached for the categories and conferred thoroughness and credibility of the data analysis. Finally, the categories were interpreted in accordance with the purpose of the study.

Research Ethics

The data collection phase of this study was approved ethically in accordance with the decision taken at the meeting of Anadolu University Social and Human Sciences Ethics Committee, dated 19.06.2018 and numbered 64753.

FINDINGS

Regarding the participants' conceptions of mathematical literacy, two main themes and five categories were identified (As shown in Table 3).

Table 3. Teachers' Conception of Mathematical Literacy

Theme	Category	Sub-category	Registered	Not Registered	Total
The concept of mathematical literacy	Functional mathematics	-	10	4	14
	Solving math problems	-	-	6	6
Developing mathematical literacy	Teacher role	Teaching with problem solving	10	2	12
		Teaching for problem solving	-	4	4
		Supporting positive changes in affective characteristics	5	4	9
	Shortcomings in development of mathematical literacy	Lack of knowledge about mathematical literacy	10	10	20
		Negative effect of transition exams between educational levels	6	-	6
		Crowded classrooms and time constraint	2	4	6
	Expectations	Pedagogical support about classroom practices	10	2	12
		Pedagogical support about posing and solving new generation math problems	-	6	6

Findings Related to Participants' Conceptions of the Concept of Mathematical Literacy

Mathematical Literacy as Functional Mathematics

In the semi-structured interviews, the question of "What is the meaning of the term 'mathematical literacy'?" was directed first in order to determine the participants' conceptions regarding what the concept of mathematical literacy means. It was observed that all of the participants who registered for the web-based learning environment were able to provide explanations about using mathematical knowledge to solve problems encountered in daily life. For instance, P11 stated that "Mathematical literacy means to be able to see how mathematical knowledge can be used in daily life or to integrate mathematics with real life" and it reflected that she could associate the concept of mathematical literacy with the use of mathematics functional. Besides, four out of 10 participants who were not registered for the web-based learning environment were also able to provide explanations emphasizing the relationship between mathematics and real life. It was noteworthy that two of these

participants had at least 17 years of teaching experience, while the other two took an undergraduate course on mathematical literacy. For instance, the following expression of P3 reflected that her conception of the concept of mathematical literacy was using mathematics in daily life activities, "Mathematical literacy means associating the problems that we encounter in daily life with mathematical processes...".

Next, the participants' views about the importance of mathematical literacy were explored. All participants who registered for the web-based learning environment emphasized that mathematical literacy allows students to develop their problem-solving skills. For instance, one of these participants explained that "Mathematically literate individuals are the ones with advanced problem-solving skills" (P19). Another participant stated that "A mathematically literate individual can use his/her mathematical knowledge in daily life, think practically, and establish a cause and effect relationship" (P12). In a similar way, it was observed that four participants who were not registered for the web-based learning environment reflected that to be mathematically literate requires skills such as practical and versatile thinking. One of these participants stated that "A mathematically literate individual is the one who can think practically and make quick decisions" (P3). Another participant stated that "Mathematically literate individuals are the ones who have different perspectives and versatile thinking skill" (P9).

When it comes to their views about PISA international assessment, it was seen that all participants who registered for the web-based learning environment were knowledgeable about the purpose, assessment areas and target population of PISA. Inquiries regarding how they acquired knowledge about PISA indicated the informative nature of web-based PISA course modules. For instance, P11 reflected on the knowledge that she acquired from the modules as, "My source of knowledge is PISA training modules. I have learned a lot from the modules".

Mathematical Literacy as Solving Math Problems

The findings from the semi-structured interviews revealed that six out of 10 participants, who were not registered for the web-based learning environment, had the conception that mathematical literacy was associated with solving math problems. These participants thought that the concept of mathematical literacy means being able to understand a math problem and present a mathematical solution. One of these participants stated that it refers to "… a student's ability to understand and solve a math problem correctly" (P6). Similarly, another participant stated that "Mathematical literacy is being able to read a problem, interpret it, and then present a solution" (P5). In line with the aforementioned conception of mathematical literacy, these six participants emphasized that mathematical literacy is very important to improve students' academic success in mathematics. For instance, one of these participants stated that "As mathematical literacy improves, students' mathematics success and our country's PISA success ranking will increase" (P1). Similarly, P10 said, "I think the high school entrance exam, which includes skill-based math questions, has increased the importance of mathematical literacy even more. I believe that mathematical literacy provides the students with success in this exam".

Another remarkable finding is that all the participants, who were not registered for the web-based learning environment, did not have enough knowledge about PISA. Besides, it was seen that two of these participants acquired knowledge from sources such as daily news or social media platforms. For instance, P7 stated that: "I read in newspapers. It is a subject that we do not have much knowledge about. We always think about what we can do for the transition examinations. But a different perspective is needed. Therefore, I can say that I researched about mathematical literacy myself".

Findings Related to Participants' Conceptions of Developing Mathematical Literacy

Teaching with Problem Solving

In order to examine the participants' conceptions of development of mathematical literacy, the question of "What are the roles of mathematics teachers in mathematical literacy development?" was directed. All of the participants who registered for the web-based learning environment thought that mathematical problem solving is a tool for raising mathematically literate individuals. Accordingly, they emphasized the use of real-life situations in mathematics learning process and the adoption of realistic context-based teaching methods. For instance, P14 stated that "...content that reflects students' own lives can be shown and the method of realistic mathematics education can be used". Thus, it clearly highlights the role of teachers as designing real-life problem solving environments. Here, it can be thought that the developing mathematical literacy module and PISA-like problem-posing module play a supporting role in the development of teachers' understanding of the developing mathematical literacy. Similarly, it was observed that two out of four participants who were not registered for the web-based learning environment and whose conception of the concept of mathematical literacy was using mathematics in daily life, had a similar view about the role of teachers. For instance, one of these participants stated that "If students learn mathematics in everyday contexts, their mathematical literacy improves" (P3).

Teaching for Problem Solving

The findings from the semi-structured interviews revealed that four out of six participants who were not registered for the web-based learning environment and whose conception of the concept of mathematical literacy was solving math problems, considered problem solving as a goal for raising mathematically literate individuals. Accordingly, these participants pointed out the importance of supporting reading comprehension and procedural skills. Some sample views are as follows.

P5: It should be ensured that students understand and explain the problem situation and their procedural skills should be supported. Besides, plenty of problems should be solved.

P1: The new generation problems should be introduced to students and they should be able to understand and interpret such questions. At this point, group work should be done and classroom discussions should be created.

Supporting Positive Changes in Affective Characteristics

In addition to the teacher roles described above, nine participants regardless of using the web-based learning environment, pointed out the importance of mathematics interest and mathematics self-concept. They explained the role of teachers as supporting positive changes in students' affective characteristics related to mathematics. For instance, one of these participants (P11) stated that teachers should make students enjoy mathematics. Similarly, another participant (P13) stated that interest in learning mathematics should be encouraged among students.

Shortcomings in Development of Mathematical Literacy

Following their explanations about teacher role in mathematical literacy development, the participants were asked to make a self-assessment of their ability to support their own students' mathematical literacy. In this context, almost all of the participants (19 out of 20) found themselves partially sufficient to support their students. Only one participant stated that he did not find himself sufficient. At this point, almost all of the participants said that they did not receive education emphasizing mathematical literacy in pre-service or in-service periods. For instance, P19 stated, "What should we do, how should we approach, what kind of environment should we provide in order to improve mathematical literacy? I have not received any training on these subjects". Similarly, P11 stated that "There should be different environments, different opportunities, but I think my lacking in this subject is due to the shortcomings of my undergraduate education".

On the other hand, six participants who think that mathematical literacy can be supported in learning environments where realistic context-based teaching methods are adopted, stated that the transition examinations between educational grades (e.g., Transition from Primary Education to Secondary Education Examination) held in Turkey until 2018 were not prepared for the assessment of students' mathematical literacy and that mainly exam-oriented educational activities were carried out. Accordingly, the participants draw attention to the negative effect of this situation on their teaching approaches. One of these participants said that "I think that our lessons are exam-oriented, the lessons are not designed in accordance with constructivist approach or mathematical literacy. Everyone worries about just achieving the learning objectives in the curriculum somehow…". Similarly, P18 said "We are in a system and we are trying to keep up with it. When we talk about mathematics lessons, we say either constructivism, we have problems in designing the lessons accordingly".

In addition to the shortcomings associated with mathematics teachers and the negative effect of the transition examinations, crowded classrooms and time constraints have been identified as another shortcoming in mathematical literacy development. In this context, six participants thought that the crowding in the classroom learning environments negatively affects implementation of teaching strategies emphasizing mathematical literacy development. In other words, these participants stated that real-life problem solving or skill-based problem solving studies require quite a long time. Thus, they emphasized that they all require additional time to provide individualized attention and support to each student. Some sample views are as follows.

P19: … problem solving processes should be used effectively. For this, class sizes should be small. However, our class sizes are big and we do not have enough time.

P15: Developing mathematical literacy is not an easy process, class sizes should be small because every child's level is different.

Expectations

Following the participants' explanations about shortcomings in development of mathematical literacy, all of the participants expressed their expectations of in-service trainings which will be organized by the Ministry of National Education and which is based on practice. In this context, as explained in detail above, 12 participants

who emphasized the importance of learning environments designed for solving real-life problems, emphasized the need for pedagogical support about classroom practices. Some sample views are presented below.

> P18: Mathematical literacy should be addressed through exemplary lessons, in other words, what the teacher is doing, how the students participate in the lesson, we can watch, and it should be a training that allows us to understand.
>
> P15: I expect a training in which we can understand the cognitive processes of students while being alone with real problems.
>
> P19: How can we ensure that students use these processes effectively? I can say that I really need in-service training on this subject.

The expectations of the remaining participants for in-service training to be organized by the Ministry of National Education were related to posing or solving skill-based math problems. For instance, one of these participants expressed that "It would be better if there are skill-based problem posing trainings or skill-based problem solving trainings" (P1). Another participant stated that "There can be a training on how to solve new generation problems" (P8). Finally, all of the participants thought that participating in the above-mentioned in-service trainings for mathematical literacy development and transferring their knowledge to students will have a positive effect on their motivation. However, five participants using the web-based learning environment emphasized the need for similar studies or projects, drawing attention to the fact that the web-based learning environment was highly motivating for them. For instance, P16 stated that “Designing such a learning environment obviously encouraged and motivated me a lot. Such projects should be increased”.

DISCUSSION & CONCLUSION

Considering the importance of mathematical literacy in the 21st-century information societies and the role of mathematics teachers in raising a mathematically literate society, in this study it was aimed to investigate the conceptions of mathematical literacy held by mathematics teachers who participated in the web-based PISA course offered as part of the current research and those who did not. As a result of the study, it was found that participating mathematics teachers' conceptions of mathematical literacy involved two central dimensions, which were functional mathematics and solving mathematics problems. All the teachers who participated in the web-based PISA course conceptualized mathematical literacy as functional mathematics. That is to say, according to these participating teachers, mathematical literacy is the use of mathematical knowledge and skills functionally to deal with real-life problems. Here, mathematics teachers’ conceptions of mathematical literacy were similar to the category of ‘functional/useful mathematics’ which is explained in the study of Genç and Erbaş (2019). However, these researchers emphasized both knowledge of mathematics which is used functionally in societal life and functional use of mathematics in occupational or professional life in this category. On the other hand, these teachers also associated the development of mathematical literacy with the development of real-life problem-solving skills. In other words, these participating mathematics teachers considered mathematical problem solving as a tool in the development of mathematical literacy and pointed out the importance of teaching with a problem-solving approach. This result showed that the web-based PISA course supported mathematics teachers to develop an understanding of mathematical literacy as informal mathematics involving basic mathematical knowledge and skills which enable people to tackle everyday life problems (McCrone & Dossey, 2007; Powell & Anderson, 2007). In addition to this, Jablonka (2003) stated that conceptualization of mathematical literacy as conducting mathematical thinking processes in solving problems encountered in daily life helps to create predisposition towards seeing the world through mathematical eyes. It is also known that development of mathematical literacy is in fact a direct result of the way mathematics teaching/learning is being practiced in schools (Sfard & Cole, 2003). Therefore, these mathematics teachers can be expected to have a tendency to educate their students as individuals with a similar perspective.

Another striking result of the current study was that almost half of the teachers who did not participate in web-based PISA course conceptualized the concept of mathematical literacy as solving mathematical problems. That is to say, according to these participating teachers, mathematical literacy is to generate the most appropriate solutions to math problems and to be successful in mathematics. Accordingly, these participating teachers considered mathematical problem solving as a goal in the development of mathematical literacy and pointed out the importance of teaching for problem solving approach. Here, it is noteworthy that devising strategies for solving problems is one of the fundamental mathematical capabilities that needs to be acquired for the development of mathematical literacy, which refers to selecting or devising a plan or strategy to use mathematics to solve problems arising from a task or context, as well as guiding its implementation (OECD, 2019). The fact remains that, as Zhong and Xu (2019) also emphasize, completion of the problem-solving phases does not necessarily lead to

success in solving real-life problems and it is difficult to achieve this goal by simply engaging students in the problem-solving process. As mentioned in the literature particularly by the OECD, students should be presented problems in real-world contexts that best support the development of real-life problem-solving skills (Stacey, 2015). In this respect, it is an important requirement to ensure that mathematics teachers have detailed knowledge about the process of solving real-life problems and developing real-life problem-solving skills.

Another important result of the present study was that almost all of the participating teachers thought that they did not take an education emphasizing mathematical literacy in pre-service or in-service periods. Accordingly, it was observed that the participating teachers' expectations of in-service training to be organized by the Ministry of National Education differed according to their conceptions of mathematical literacy. In other words, the participating teachers, who drew attention to the importance of solving real-life problems for development of mathematical literacy, expressed their need for pedagogical support about how to develop students' real-life problem-solving skills. On the other hand, the participating teachers who associated mathematical literacy development with solving math problems expressed their need for trainings on how to solve and/or pose new generation/skill-based math problems. As is known, conducting efficient classroom practices that support mathematical literacy is closely related to the subject matter knowledge of mathematics teachers as well as their pedagogical content knowledge about this subject (Botha, Maree & Stols, 2013). In this context, the professional development of mathematics teachers about supporting mathematical literacy, starting in the pre-service period and continuing in the in-service period, is an issue that should be emphasized. At this point, considering the positive effects of the web-based PISA course which was designed by the researchers as a beginning project on mathematics teachers' conceptions of mathematical literacy, it is suggested to conduct teacher trainings to support mathematical literacy and conduct research that will focus on less information sharing and more practice.

Finally, in this study it was investigated mathematics teachers' conceptions of mathematical literacy. In addition to this, this study could also have examined impact of teachers' conceptions of mathematical literacy on their teaching of mathematics. Therefore, it can be considered as a limitation of this study. The number of participants could be considered as another limitation since a limited number of participants might not have represented a wide range of views in order to obtain all different perspectives with respect to teachers' conceptions of mathematical literacy.

Statements of Publication Ethics

The approval of ethics committee for the present study was given by Anadolu University Social and Humanities Ethics Committee with the issue number 64753 and authors declare that the principals of research and publication ethics were followed.

Researchers' Contribution Rate

The contribution rate of each article in the manuscript is equal.

Conflict of Interest

The authors declare that there is no conflict of interest.

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Factors Affecting Interaction in Online EFL Courses: A Multiple Case Study of Instructors' Perspectives

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Abstract

A variety of factors might impact interpersonal interaction between instructors and students in an online course. This study seeks to explore the opinions and attitudes of six EFL instructors working at various universities in Turkey regarding the factors they believe increase interaction in their online courses and to contribute to the pertinent literature. Within the scope of collaborative research, the use of purposeful sampling technique and semi-structured interviews with the participants provided the best opportunity to describe the attitudes and opinions of these instructors who were assigned to teach online in an emergency remote teaching environment due to the coronavirus pandemic, COVID-19. The end result includes a variety of factors and strategies influencing interaction that can be used by novice and experienced online instructors aiming to influence interpersonal interaction in their online courses. While all the participants expressed the need to provide higher quality interactions during the online courses, the obstacles they face in their efforts to reach the desired level of interaction were the main agenda of the interviews. They discussed the role of course structure factors, environment and media effects, feedback and assessment techniques, and discourse facilitators, which constituted the main themes that were categorized into codes emerging from the interview data.

Keywords: Factors and strategies, interpersonal interaction, online courses

Çevrimiçi İngilizce Derslerinde Etkileşimi Etkileyen Faktörler: Öğretim Elemanlarının Görüşlerine İlişkin Çoklu Bir Vaka Çalışması

Öz

Çevrimiçi bir kursta eğitmenler ve öğrenciler arasındaki kişilerarası etkileşimi çeşitli faktörler etkileyebilir. Bu çalışma, Türkiye'de çeşitli üniversitelerde görev yapan altı çevrimiçi yabancı dil olarak İngilizce dersleri veren öğretim elemanının çevrimiçi derslerinde etkileşimi artırdığına inandıkları faktörlere ilişkin görüş ve tutumlarını araştırmayı ve ilgili literatüre katkıda bulunmayı amaçlamaktadır. İşbirlikli araştırma kapsamında, amaçlı örnekleme tekniğinin kullanılması ve katılımcılarla yarı yapılandırılmış görüşmelerin yapılması, koronavirüs pandemisi (COVID-19) nedeniyle bir acil uzaktan öğretim ortamında çevrimiçi eğitim vermek üzere görevlendirilen bu öğretim elemanlarının tutum ve görüşlerinin betimlenmesi için en iyi fırsatı sağlamıştır. Nihai sonuç, çevrimiçi derslerinde kişilerarası etkileşimi etkilemeyi amaçlayan deneyimli ve deneyimsiz çevrimiçi öğretim elemanları tarafından kullanılabilecek etkileşimi etkileyen çeşitli faktörler ve stratejiler içermektedir. Tüm katılımcılar çevrimiçi kurslar sırasında daha kaliteli etkileşim sağlanması gerektiğini ifade ederken, istenen etkileşim düzeyine ulaşma çabalarında karşılaştıkları engeller görüşmelerin ana gündemini oluşturmuştur. Görüşme verilerinden ortaya çıkan kodlar halinde kategorize edilen ana temaları oluşturan ders yapısı faktörlerinin, çevre ve medya etkilerinin, geri bildirim ve değerlendirme tekniklerinin ve söylem kolaylaştırıcılarının rolünü tartışmışlardır.

Anahtar kelimeler: Faktörler ve stratejiler, kişiler arası etkileşim, çevrimiçi kurslar

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INTRODUCTION

Interaction has been defined by Anderson (2003) as a complicated and multifaceted concept in all types of education. Classroom-based dialogue was found to be the main focus of interaction between teachers and students; however, the concept of interaction has been extended to contain intermediated synchronous conversation at a distance (web-enhanced instructions, new communication media, and audio/videoconferencing) and this has brought a new dimension to education by leading to quality enhancement to online education. Interactivity is designated as a crucial learning process by Smith and Diaz (2004) and its quality influences the quality of computer-mediated instruction. Computer-mediated resources contain substantial tools that can be used for applying the curriculum integrated into the course structure (Godwin et al., 2008).

York and Richardson (2012) have described the interaction as a crucial factor that affects the learning and motivation of students to learn in online classes. In their research on the significance of interaction in online courses, results have indicated that online courses where interaction cannot be achieved adequately lead to a feeling of isolation, unproductive learning experiences, and higher rates of dropouts. The results of their study with online instructors have also shown that online instructors think that some particular components enhance the level of interpersonal interaction in online courses. These components are likely to be affected by various factors. So, what are the components that influence interaction in online courses? There are likely to be additional unidentified or unreported factors in literature affecting interaction in online courses.

Studies have revealed that it is extremely difficult to establish the rapport required for effective learning when both teacher and students are unable to use their body language, facial emotions, and voice when speaking. In the research by Huss et al. (2015), the majority of the participants voiced their displeasure about how the online format appears to prevent teacher-student connection. It is fair to say that meeting the diverse needs of learners is a difficult task for teachers in face-to-face education, but it is far more difficult in online education, besides the fact that time constraints, lack of body language, and monitoring difficulties could all be listed as factors affecting interactivity (Zhang, 2020). Inspired by the importance of identifying these problems mentioned in the literature and the factors affecting them, the present study centers on the investigation of the affective, social, technical, and educational factors that might have an impact on interpersonal interaction in online courses by addressing the following research question: "*What are the factors that might impact interpersonal interactions in online EFL courses?".* When the relevant literature is reviewed, learner-centered interactivity was categorized into four forms of interaction in online education: learner-to-content, learner-to-interface, learner-to-learner, and learner-to-instructor.

Purpose of the Study and Research Question

Studies have revealed that it is crucial to recognize and investigate key factors that may promote or obstruct technology integration into education, which is directly impacted by the interaction during online courses, in order to support teachers in successfully adjusting to the state-of-the-art technology in their classrooms (Chen, 2008; Cope & Kalantzis, 2009). The purpose of this study was to explore affective, social, technical, and educational factors that might influence interpersonal interaction in online courses by addressing the following research question: "What are the factors that might impact interpersonal interactions in online EFL courses?". This study will contribute to the pertinent literature by providing a better understanding of the identification of the underlying factors that can promote and hinder interpersonal interaction in online classrooms, which may enable instructors to consider the conditions more critically.

Learner-to-Content Interaction

Interaction of learners with the subject in question to internalize the meaning and associate it with personal understanding is referred to by most researchers as learner-to-content interaction. Learner-to-content interaction was defined as a process of learners' mentally interacting with the course content that leads to changes in their perceptions and perspectives (Moore, 1989, as cited in Abrami et al., 2011). This form of interaction may include reading expository writings to construct meaning, watching videos of instructions, using multimedia sources to interact, practicing through simulations, working on collaborative projects in groups, etc. Learner–to-content interaction is a form of interaction in the online education process that embraces various means and methods to introduce the subject to the learners and could be in the form of any material used for teaching (Yueh et al., 2014).

Malinovski et al. (2012) investigate the strategies for providing meaningful learner interaction with the content in online education. The researchers present the suggestions of participants to support this basic form of

interactivity by reporting that learners improve and construct knowledge with direct exposure to the content material. Based on the findings of the study, the researchers report that thanks to the opportunities provided by technology, the content materials can be easily stored, indexed, and distributed, which changes the direction of learner-to-content interaction in a positive way.

Learner-to-content interaction has been found to be the key indicator of student satisfaction in online courses by Kuo et al. (2014). This finding suggests that the design of course content and proper delivery through technology should be considered by instructors and curriculum designers as the most essential items to be cared about in totally online settings. The organization of online course content should be presented and effortlessly accessed by online learners through various media or technology interfaces (Moore & Kearsley,1996, as cited in Kuo et al., 2014). They claim that the chance of learner satisfaction should be increased by the incorporation of media sources and interactive videos into the course content. They also express the importance of encouraging instructors to frequently use discussion boards and reply to questions of learners regularly to enhance the level of interaction with students.

Learner-to-Interface Interaction

Findings of a study conducted by Ehrlich (2002) show that the success of online courses generally depends on how easy and intuitive the interface is to use and how familiar students are with the use of technology. Over 90 percent of the student participants recommended that online courses should include additional orientation and provide more practical experience for both instructors and students. Taking the findings of this study into consideration, they state that it should not be too troublesome and intimidating for students to use the technology for educational purposes. Students having no experience in studying through technology may have difficulty dealing with technical problems and this can become tiring and dissuasive for them.

The interaction between the instructor and technology is also crucial for the general success of online courses. In their analysis, Danesh et al. (2015) found that the instructors' knowledge and practical use of the technology for the synchronous online sessions make the course more exciting and interesting. Student participants of their study stated that instructors having the skills of using technology with ease had more influential classroom discussions. They also mentioned that instructors should develop skills in involving, engaging, and controlling the students so as to make the students feel an important part of the class. While expressing the importance of the relationship between the instructor and the interface, the researchers of the study particularly underline that the interaction between the student and the interface has an important role in the learning process. The knowledge and skills of the student about the technology interface are the interaction between the student and the technology in which instruction takes place. Brown et al. (2013) focused on the risk of any disconnections between the learners and the interface services provided by the school administration, which will cause inefficacy for many first-time distance learners. He argues that the interaction between student perceptions of distance education and relevant technical support services is the key to improving the engagement, participation, and achievement of first-time online learners. Considering this argument, Mladenova and Kirkova (2014) suggest that the decision on which technology interface to be used for online courses should be given depending on the ease of use of the technology. A user-friendly interface plays a significant role in increasing the chance of personal success of individual learners.

Learner-to-Learner Interaction

Liao (2006) argues that interactivity can become at its highest level if learner-to-learner interaction becomes completely collaborative when learners work and learn together. The study analyzed the impacts of learning in small groups when learners use computer technology to work together. Based on the analysis of the study, it was stated that learners' experience of group work and the instructors' strategies of cooperative learning are significant factors that affect the learning outcomes of students when they work in small groups through the use of technological tools. The results of the study indicate that students need practice in collaborative work in groups and training in how to work and learn together in collaborative activities. The need for collaborative working practice and training is also highlighted in another study conducted by Kanuka (2011) who claims that this practice and training enables learners to acquire skills for effective group work. Both researchers express the responsibility of learners for both their own learning and helping the other group members learn.

Vrasidas and Zembylas (2003) refer to the share of responsibility as a positive interdependence that promotes interaction among learners to process information more successfully by motivating them to achieve mutual goals. That is, the paper contributes to our understanding of collaboration by presenting the possible benefits of promotive interactions that provide an exchange of thoughts, sharing knowledge, distributed thinking,

giving and receiving elaborated explanations, and collaborative discussions which may also support learner-to-content interaction and learner-to-instructor interaction as well.

Learner-to-Instructor Interaction

How instructors and students interact with each other has been found to be influential in the flow of online interactions by the results of a study conducted by Flottemesch (2000). The researchers stated that improved discourse and quality interaction may lead to improved academic achievement among learners. In her doctoral dissertation, (Keeler, 2006) also discussed that the means of interaction and the style of discourse might play a major role in the cognitive learning of students and their self-confidence during online interactions.

Sharp and Huett (2006) reflect the interaction between learners and instructors as critical for both learners and instructors. The researchers suggest that instructors should stimulate attention and motivation, organize the learning process of all types of learners, and encourage each learner to establish a quality interaction with them. In their analysis, Bernard et al. (2009) found that the guidance of instructors through activities and assessments stimulates or at least maintains learners' interest and motivation to learn and develop their skills. This point of view is consistent with the findings of Dennen et al. (2007) who reveal that in online environments learner-to-instructor interaction through synchronous videoconferencing or asynchronous communication provides motivational and psychological support to the learners and the means of interaction are not restricted to lectures, feedbacks or assessments.

METHOD

The research was designed as a qualitative multiple case study involving the online interviews conducted with the study group via video-conferencing held in English with varying duration since its main purpose is to explore the opinions and attitudes of online EFL instructors regarding the factors they believe increase interaction in their online courses along with the reasons for their pedagogical practices and strategies and to contribute to the pertinent literature. The study is exploratory in nature, the purpose of which is to somehow satisfy a curiosity, to explore and enable a comprehensive understanding of the phenomenon that is under review, and to provide a more accurate understanding of it (Babbie, 2013). Considering the exploratory nature of the problem, a multiple case study method was conducted in the study through the social construction of the participants. To understand the participants' shared experiences and opinions of the phenomenon, the study aimed to represent the participants as much as possible rather than considering them as the passive subjects of the researcher (Creswell, 2013).

The Study Group and the Sampling Method

The study group consisted of six EFL instructors working at various universities in Turkey who were selected with a purposive sampling technique which is described by Hibberts et al. (2012) as a technique used when the researcher knows the characteristics of the target population and relies on their own judgment for selecting specific individuals having those characteristics to include in the sample. The small sample size was not irrational since a heterogeneous group of three to fifteen individuals is highly recommended by Creswell (2013) for such cases. All the participants were selected through the researchers' social network among those with a desire to improve and possibly change their personal practices. Some of the participants do not have much experience in online education, as they did not provide long-term online education before the pandemic process. The goal for choosing instructors working at different universities and having varying levels of familiarity with the online education system depending on their years of online teaching experience and number of online teaching hours was a selection of a variety of cases regarding the phenomenon of interest. All the participants met the following criteria: being currently active in the field of online teaching, and/or having some online teaching experience, and working at different institutions. The demographic information of the participants is presented in Table 1.

Table 1. Opinions of School Principals on Emergency Distance Education in the Covid-19 Process

Participants	Gender	Age	Years of Teaching Experience	Teaching Context	Online Teaching Hours	Years of Online Teaching Experience	Kind of Syllabus Followed	Kind of Materials Used	Teaching and Assessment Techniques
P1	Male	33	11	Preparatory school at a state university in a small city	12	6	Skill-based syllabus	Interactive course book and workbook, web-based resources	Online teaching and assessment
P2	Female	29	7	Preparatory school at a state university in a big city	16	3	Content-based syllabus	Interactive course book and workbook, web-based resources	Online teaching and assessment
P3	Female	31	8	Preparatory school at a foundation university in a big city	10	4	Skill-based syllabus	Interactive course book and workbook, web-based resources	Online teaching and assessment
P4	Female	32	8	Preparatory school at a state university in a small city	13	5	Structural syllabus	Interactive course book and workbook, web-based resources	Online teaching and assessment
P5	Female	28	5	Preparatory school at a foundation university in a big city	13	3	Skill-based syllabus	Interactive course book and workbook, web-based resources	Online teaching and assessment
P6	Male	36	14	Preparatory school at a state university in a big city	15	7	Skill-based syllabus	Interactive course book and workbook, web-based resources	Online teaching and assessment

Data Collection Instrument

Background questionnaires and semi-structured online interviews conducted via video-conferencing held in English with varying duration were used as data collection instruments to examine instructors' opinions, attitudes, and pedagogical strategies. Semi-structured interviews were assumed to be quite reasonable for this study as Flick (2002) stated that semi-structured interviews allow the researchers to examine the views, opinions, attitudes, and perceptions of participants in detail and give the instructors some flexibility in clarifying the significant issues. The background questionnaire was a quite simple form asking participants about their age, educational background, teaching experience, and familiarity with the online education system depending on their years of online teaching experience and number of online teaching hours.

During the interviews, the following questions were asked to the study group:

1. What methods do you follow in your online courses to promote instructor-learner and learner-learner interaction?

2. What is the biggest challenge you generally encounter while trying to promote interaction in your online courses?

3. What recommendations would you give to an online instructor who intends to enhance interpersonal interaction?

4. What are the factors that you believe raise the level of interpersonal interaction in online courses?

The validity of the data collection instruments was verified by presenting the questions of the interviews and background questionnaire to the opinion of three field experts working at the English Language Teaching Department at a state university. Appropriateness and clarity of the questions were confirmed by the field experts.

Consequently, it was assumed that data saturation was reached to meet the general objective of the study. The procedure of gathering data was launched when the required modifications and adjustments were performed.

Data Collection Procedure

The study group was informed via phone calls and e-mails that they should participate voluntarily with an entire understanding of the purpose and nature of the study and that their right to privacy would be respected throughout the whole study process. They were also informed that the role of the qualitative researchers was to attempt to access the opinions, feelings, and perceptions of the participants. While sharing the interview questions with the participants days before the interviews to allow for their preparation, the researchers asked for their permission to record the video conferences as well.

Data Analysis

The background questionnaires were analyzed to explore the demographic features of instructors concerning their age, educational background, teaching experience, and familiarity with the online education system depending on their years of online teaching experience and the number of online teaching hours. The records of videoconferences held in English with varying duration were examined and then transcribed by the researchers for inductive content analysis. The steps for inductive content analysis were then followed as explained by Elo and Kyngäs (2008). The interview transcriptions were coded within the texts and categorized based on significant statements, terms, repetitions, and keywords in context. The data to be used for each code regarding the factors that influence interpersonal interaction in online courses were presented in a scheme under the titles of relevant themes. The open coding schematized assisted the researchers and the reader in understanding and revealing the findings to describe all aspects of the content. The schematization and interpretation of the codes and themes were completely done by the researchers. The lack of an independent inter-rater during the data's coding procedure may have an impact on the reliability of the drawn codes and themes.

Every phase of the study was conducted in accordance with ethical standards. The interviewees were required to sign an informed consent form before the interviews could begin. The identities of the participants were also kept confidential throughout this research article. Every source used in this study was properly cited in accordance with APA guidelines.

FINDINGS

The analysis of the background questionnaires inquiring the instructors about their age, gender, teaching experience, online teaching experience, educational background, and semi-structured interviews addressing the research questions enabled the researchers to reach several important findings about the instructors' opinions and attitudes to the factors that influence interaction in online education along with the reasons for their pedagogical practices and strategies. Findings acquired in the present study indicate that EFL instructors expressed an overall belief in the role of strategies to be used for increasing interaction in online courses although some of them stated they find it much more difficult to keep the interactivity in online courses than in face-to-face courses. Such a discrepancy was owing to the troubles that learners and instructors experience in adapting to online education, and the gap between course structure and the focus of exams.

The data were analyzed with special attention to privacy issues as derived from the interviews and indicated that more variables contribute to interpersonal interaction in online courses than in face-to-face courses. Factors that influence interaction seem to be more complicated than persistent studies indicated in the literature. Significant statements extracted from the interview transcripts were categorized into codes and themes and presented under the titles of the relevant theme. Four themes emerged from the interview findings concerning the factors influencing interpersonal interaction in online courses: course structure factors, environment and media effects, feedback and assessment techniques, and discourse facilitators. These themes captured the main principles of interpersonal interaction in online courses as discerned and practiced by the six instructors interviewed. Multiple factors participants believed impact online interaction together with the interpretations of the researchers are embedded within these four themes. The interview findings presented under the title of each theme are then discussed in respect of the factors within the context of the literature. The themes and codes in which the findings were categorized are summarized in Table 2.

Table 2. Themes and Codes

Theme	Code
T1: Course structure factors	C1: Collaborative activities
	C2: The use of a variety of activities
	C3: Discussions
T2: Environment and Media Effects	C1: Psychological attitudes towards technology and issues of privacy
	C2: Internet connection
	C3: Computer communication literacy
T3: Feedback and Assessment Techniques	C1: Instructor/peer feedback
	C2: Online assessment techniques
T4: Discourse Facilitators	C1: Social communication strategies
	C2: Immediacy behaviors

Course Structure Factors

Factors related to course design and structure that could impact interaction emerging from the instructors' responses to the interview questions are categorized into the following codes inferred from the significant statements and terms: collaborative activities, the use of a variety of activities, and discussions.

Collaborative Activities

Practices and recommendations of participants regarding collaborative activities included both obligatory and voluntary participation. For instance, one of the participants requires her students to participate in collaborative activities and pair them with different students to increase their chances of interaction based on their needs. By doing this, she expects her students to learn from each other and get different perspectives by breaking the walls:

> *"During collaborative activities, I try to pair them with different students almost every time considering their needs so that they can interact with each other, learn from different people, and hear from different brains. I tell them that participation is obligatory… It can raise interaction through collaboration because you are somehow breaking the walls…"* (P-4, female, 32 years old, with 8 years of teaching experience).

On the contrary, another participant believes the participation should be voluntary and the collaborative activities can be in the form of debates, role-playing, competitions, project works, finding mistakes, or reflecting on students' writings as a whole class activity:

> *"We can prepare conversations to help them collaborate. One student is asked to write a question and the other one is going to answer the question… Debates, role-playing, competitions, project works, or maybe finding mistakes... I do not force them to participate. I can reflect a student's writing on my screen and as a whole class we can find the mistakes."* (P-3, female, 31 years old, with 8 years of teaching experience).

Having eleven years of teaching and six years of online teaching experience at a state university, one of the instructors commented on some difficulties he encountered that hinders him from using more collaborative activities in his online language-teaching context. The difficulties encountered were 'the unwillingness of students to do collaborative assignments at first' and 'time restriction'. He also suggests that collaborative writing, virtual mediated interaction, role-play activities, and text chat can be useful for student engagement. His evaluation of the course and the interpersonal interactions in his courses made the researchers believe that the instructors needed to support collaborative learning by teaching students how to communicate online:

> *"At first they complained about collaborative activities and they didn't want to do video recording assignments. But when I had interviews with them, they said that they are so helpful for them and they can practice... I can't tell that I generally have time in my online courses for collaborative activities but I can definitely say collaborative writing is possible if we teach our students how to communicate online… virtual mediated interaction can also be useful. Role-play activities may also be possible and text chat can also be useful…"* (P-1, male, 33 years old, with 11 years of teaching experience).

He also discussed the role of personal engagement in improving interactivity in the online learning process, accomplished through different formats of collaborative activities that require division of responsibility among group members. He expressed his fondness for students working together and sharing their perspectives:

> *"… I believe in the role of personal contribution to improving interactivity in collaborative activities. Everybody can add some things from their perspectives. That's why I intentionally give assignments that require collaboration because that's the key to student engagement."* (P-1, male, 33 years old, with 11 years of teaching experience).

As conveyed in the excerpt below from one of the instructors' comments, she expresses that she is aware of the role of group-works in learners' accomplishment although she talks about the difficulties she encounters while doing group-work activities due to the microphone problems students have:

> *"...group works can be done, but in my case, I cannot do them very well because of the microphone problem they have. However, if the teacher has a chance to do some exercises based on group works, there are some platforms that students can use simultaneously like Google Docs…"* (P-5, female, 28 years old, with 5 years of teaching experience).

From these responses of participants, it can be concluded that scaffolding communication with collaborative activities such as debates, collaborative writing, virtual mediated interaction, role-play activities, competition, project work, and text chat as a constituent of interaction facilitation, is another factor that might impact interaction in online education.

The Use of a Variety of Activities

The statements of the interviewees generally indicated their beliefs on the importance of enabling distributed participation by providing a variety of activities. One of the participants considers the use of various kinds of activities as the key to attracting the attention of all types of learners:

> *"As teachers, we can do something to promote interaction and to foster it. For example, we can provide a variety of activities that attract students' interest. If we can get the interest of all types of learners, we can easily have distributed participation among learners."* (P-3, female, 31 years old, with 8 years of teaching experience).

As her sensitivity to the issue can be perceived from her expressions, the attitude of a participant to the use of various activities in online courses seems to be a consequence of her own experience as a language learner. She prefers encouraging her students to interact with each other in a comfortable atmosphere without hesitation during different activities. Her experience as a foreign language learner must have made her believe that she should just let students jump in and say, whatever they want to say:

> ***"****…I mean when students have their chance to answer when it requires one speaker at a time, I prefer to involve everybody one by one so that nobody will be left out. But sometimes when we have a whole-class discussion, I let it go as the conversation unfolds. I mean, imagine that we have a whole-class discussion, students can easily jump in and say whatever comes to their mind. At that point, I kind of step back and leave them to say whatever comes to their minds freely. This is how I try to enable distributed participation in these varieties of activities."* (P-4, female, 32 years old, with 8 years of teaching experience).

Discussions

Having different expectations for discussion participation, instructors shared some of their personal practices and recommendations to start a controversial topic for discussion and to keep it going on. One participant commented on the unnecessary use of discussion boards: *"Students will not appreciate it if you just do discussion board for the sake of keeping the discussions going."* He also emphasized the need for a better organization: *"I do my best to put everything together so that students can easily link to different topics to keep the conversation."*. He conveyed how he looks for alternative options to the traditional discussions: *"I love the idea of assigning someone as a kind of moderator for their group every week and the moderator then starts a whole-class discussion and manages the whole class as a representative."* (P-6, male, 36 years old, with 14 years of teaching experience).

Another participant interviewed underlines that when students actively participate in the group discussions and talk about themselves and their personal ideas on the discussion topic, the psychological distance among them that is caused by distance education is more likely to be reduced and:

> *"I have a lot of students who participate orally in lessons. I start some discussion topics and I try to make my teaching topics personalized. I ask them to give personal examples from their own lives. The psychological distance among them is*

> *reduced when they start to talk about themselves and their ideas on a controversial topic for discussion."* (P-3, female, 31 years old, with 8 years of teaching experience).

Considering the comments, it is possible to say that students actively participating in the discussion during online courses develop a better sense of social presence with their immediacy behaviors by decreasing the social and psychological distance among them. From the perceptions of the interviewees we can conclude that course structure, whether well-organized beforehand or applied along the way, is a crucial factor that might influence interpersonal interaction during online education.

Environment and Media Effects

Three codes emerged from the data around the main theme: psychological attitudes towards technology and issues of privacy, internet connection, and computer communication literacy.

Psychological Attitudes Towards Technology and Issues of Privacy

An important code emerging from the data concerning environment and media effects is the psychological attitudes of learners toward learning through technology and their unwillingness to participate due to privacy issues as illustrated in the following excerpt:

> **"***The biggest challenge is their unwillingness to participate. Because as far as I understood, they don't see me as a real teacher. They don't want to participate in and say something. Maybe this situation is related to the recording issue. Therefore, they may hesitate to say something wrong. They consider it as a chat, not as a real class environment. They see these kinds of things as a threat. In this case, instructors should use a casual communication style to encourage unwilling students…"* (P-5, female, 28 years old, with 5 years of teaching experience).

The role of creating a sense of community and belonging among students in learner engagement and interaction during online education is also emphasized by some instructors:

> *"Therefore, sometimes, I am not sure whether they are in front of the computer or not… Physically they don't feel like they belong to the class because of the online system. Therefore, they may not want to join in the sessions or communicative activities."* (P-5, female, 28 years old, with 5 years of teaching experience).

> *"We ask them to use their microphones always so that we can regularly check what they think about a particular issue that has been covered. Because you know it doesn't feel like interaction if you don't see a person much, right?"* (P-4, female, 32 years old, with 8 years of teaching experience).

It can be concluded from the statements of interviewees that since online interaction does not feel like real interaction and students may not have a sense of belonging, they may not consider the online conversations as an actual part of the class despite being assessed on their participation.

Feeling the hesitation in the eyes of learners while communicating through technology, another participant states that she tries to facilitate their interaction and motivate the students expressing that they don't get the same taste in online courses as in face-to-face courses:

> **"***… I feel the hesitation in their face. Of course, there are many reasons behind it. But as a teacher, I'm trying to facilitate that process by making some jokes… Students say 'We are not getting the same taste while learning English in the classroom in our online courses, so we gave up. That's why ensuring interactivity in our speaking lessons is one of the biggest challenges that I encounter in my speaking classes."* (P-2, female, 29 years old, with 7 years of teaching experience).

Considering the perceptions of participants, it is clearly seen that they mainly focus on how the students feel during online education and how instructors can change their feelings towards this new medium of education. They recommend instructors use a more casual communication style to let them feel that they are 'at the same level'. Issues of privacy play a crucial role in their interactivity in the computer-mediated communication atmosphere. Under these conditions, they need more time to become familiar with and develop trusting relationships with each other.

Internet Connection

Four of the six participants describe the internet connection problem as one of the biggest challenges they encounter while trying to promote interaction in their online courses since it interferes the communication:

> *"Internet connection is also one of the main problems. You know, for example, you are focusing on a communicative task that they are supposed to talk a lot, but in the middle of the activity the internet connection went… The interaction is interfered… Distraction can be another problem because they login in and log out throughout the session."* (P-5, female, 28 years old, with 5 years of teaching experience).

> *"Some of our students do not have a stable internet connection. Sometimes the students say that they run out of internet quotas… So, the sound and the video may not be synchronized… The voice quality is also a problem because sometimes it may lead to misunderstanding... Sometimes we have the buzzing sound and nobody understands what is…"* (P-4, female, 32 years old, with 8 years of teaching experience).

> *"Even if you try to encourage them to shoot some videos, assign each speaker, or address them in person, still they have limited time to interact. They find some excuses like they don't have an internet connection. They say they can't hear me because of the unstable internet connection."* (P-2, female, 29 years old, with 7 years of teaching experience).

> *"The biggest challenge is an internet connection. I do not have such a problem, but most of my students have a problem like that. It's really distracting. So, to solve this problem, the students should try to join the session again, and then you have to create the same atmosphere to sustain the activity."* (P-1, male, 33 years old, with 11 years of teaching experience).

The reason why these participants mention the instability of the internet connection as one of the biggest challenges is that it causes distraction among learners, disturbing sounds, and misunderstanding due to synchronization problems.

Computer Communication Literacy

Analyzing the instructors' comments on the role of computer communication literacy and prior experience with computer-mediated communication, the researchers interpreted that EFL instructors believe in the feasibility of computer networks to provide interpersonal interaction. They stressed the importance of prior experience with computers and proficiency in using the synchronous conference system for both instructors and learners. The data obtained from the interviews support this interpretation:

> *"The main point I think is having an idea of how to integrate the affordances of technology into the course. So, you have to know how to use the system to communicate. So, the interaction can be based on the content of the lesson, and also it can be related to digital literacy. They may not have enough information related to how to use technology. The lack of keyboarding skills can also be troublesome in synchronous sessions."* (P-5, female, 28 years old, with 5 years of teaching experience).

> **"***Online courses are new to them. First of all, to promote interaction, we thought that it is best to teach our students how to behave in such an environment in such an atmosphere. Because this is their first time, they need to understand the conventions of this particular medium. So, we started to work on teaching them how to use this platform effectively. We need to be an expert on what we are doing at the same time."* (P-4, female, 32 years old, with 8 years of teaching experience).

> **"***I think in general as instructors we need to have much more insight about digital environments and online teaching. Because it's so new for us and we have such a long way to come over. So, I think we need to read and search for some different tools to communicate online."* (P-1, male, 33 years old, with 11 years of teaching experience).

> *"Students having limited prior experience with computer-mediated communication feel intimidated when other students use emoticons and paralanguage to interact with each other. Participating in synchronous conferences is quite more challenging for them. Teachers can provide remedial extra studies for those students to teach them how to use the conferencing software. Another solution could be pairing them with more experienced users to make sure that they can get help from their partners when they need it."* (P-6, male, 36 years old, with 14 years of teaching experience).

As conveyed in the excerpts from four of the instructors' explanations, the use of emoticons and paralanguage by the experienced users seems to cause non-experienced learners or instructors to feel ignorant or overwhelmed for not knowing their meanings or how to use them properly to be able to keep up with the interaction going on. Some students and instructors are not 'natives' in the area of technology and using educational technology is a new struggling departure for them from the traditional teaching environment which they are familiar with. The lack of body language or voice intonation to show sarcasm or humor is possibly the reason why the experienced ones feel like they need to compensate for that with the use of these facilities. They search for expressive ways to convey their feelings despite the lack of social contexts in interaction online. Keyboarding skills also seem to impact learners' efficiency in synchronous interaction since immediate responses are expected. Solutions for these troubles suggested by some participants include: teaching students how to use the platform efficiently, reading and searching for some different tools to communicate online, providing remedial extra studies for non-experienced students, and pairing them with more experienced ones to ensure that they can get assistance when necessary.

Feedback And Assessment Techniques

Another theme emerging from the data obtained is feedback and assessment techniques as a factor that influences interaction in the online education process. The theme is categorized into two codes depending on the content and focus of statements: instructor/peer feedback and online assessment techniques.

Instructor/Peer Feedback

Sharing about the troubles they encounter while giving feedback to learners or creating an atmosphere to let them give feedback to each other, some instructors stated that they make use of technology and web-based educational sources as they don't think the synchronous online classroom atmosphere is enough for providing timely feedback, whereas one of them stated that there is no need for peer-feedback to enhance interaction among learners:

> **"***Actually, in online courses, if you talk about synchronous Zoom meetings, it is a bit difficult to give feedback…The only feedback I can give in online classes is to try to identify vocabulary errors or grammar errors while they are speaking. Because we have limited time, you know… They can see their progress through feedback and they feel more motivated to interact."* (P-3, female, 31 years old, with 8 years of teaching experience).

The participant admitted that she cannot provide enough feedback in synchronous online meetings because of time constraints. She believes that timely feedback should be provided to students' contributions to the course to motivate them and let them see their progress through feedback.

> *"To foster interaction among learners, we can create an environment for the students to give feedback to each other. In the past when I was a university student, we had a system. It was called so common at that time 'Moodle'. We wrote some comments about our classmates' writings."* (P-1, male, 33 years old, with 11 years of teaching experience).

> *"Whenever they want, they can give feedback to each other. But they are not supposed to do it. I mean they are not required to do that. Because you know imagine that they have 20 hours every week for each lesson…So it is a kind of burden on them. So, I can't expect them to give feedback to each other as well to increase interaction between them."* (P-4, female, 32 years old, with 8 years of teaching experience).

From the explanations of interviewees, providing immediate instructor/peer feedback or integrating a variety of feedback delivery systems into the course context does not seem to be possible in online settings due to time restrictions.

Online Assessment Techniques

Assessment is such a critical constituent of interactivity that including assessment in the context of online courses is reported by one of the instructors as the most efficient way to keep them involved during the online courses:

> **"***…include assessment. So, they participate more and they know that they have to interact more. Because at the end of the term they will pass or they will fail. If they obtain good results in tests, they can believe in the efficiency of online classes and they will be willing to interact..."* (P-3, female, 31 years old, with 8 years of teaching experience).

> *"Maybe they attend but the issue, while they attend, is just grades. They need to take good scores, so they attend but they are not willing. The only way to promote interaction is to threaten them with online exam scores."* (P-1, male, 33 years old, with 11 years of teaching experience).

Both instructors admitted that they consider the online assessment as the only way to threaten their students so that they feel like they have to participate and interact more. The pedagogical correspondence of this attitude of instructors becomes highly questionable although they expressed their desperation to enable students to participate in the class and interact with each other.

Discourse Facilitators

Discourse facilitation allows the conversation to move along without taking sides by asking questions about controversial topics, asking for clarification, and guiding the participants by encouraging them to ensure the accuracy of their understanding. Considering its purpose of questioning and encouraging participation, it becomes evident that it can be a factor that impacts interpersonal interaction. Factors regarding the theme 'discourse facilitators' emerging from the interview data are categorized into two codes: social communication strategies and immediacy behaviors.

Social Communication Strategies

Although not explained in detail during the interviews, most of the participants generally touched upon the role of interpersonal skills of instructors or students in establishing good relationships with each other and increasing interpersonal interaction as conveyed in the following extracts:

> *"…interpersonal skills are really important in interaction, too. As a teacher, you must be open to changes and you must prepare something new for the students. But if you still follow traditional ways in online teaching, actually it doesn't work. You should add a variety to your classes."* (P-3, female, 31 years old, with 8 years of teaching experience).

> *"…in face-to-face classes, I did not face any problem like that because generally when I encourage them like giving feedback, a smiling face, or being in a good mood, they were joining the classes. However, in online interaction, although I have tried again and again the same things like establishing a good relationship with them, and trying to be closer with my mood and statements, I haven't got enough attention yet."* (P-5, female, 28 years old, with 5 years of teaching experience).

> *"First of all, I greet each student at the beginning of each lesson like hello, good morning, welcome, like that. Because it really affects their psychology, I mean, you're smiling, you look energetic… it is not interaction. It indirectly affects it. And also after greeting them, I address them in person. So, I can easily see their names and it also helps me not to miss out on the chances to involve each student in the class."* (P-4, female, 32 years old, with 8 years of teaching experience).

From the comments, it can be inferred that how a participant talks, greets, addresses their names, gives feedback, etc. influences the interaction and participation of learners during the online courses. These kinds of behaviors are defined by York and Richardson (2012) as affective verbal immediacy behaviors that affect the overall flow of conversation. When combined with self-disclosure and anecdotes, these behaviors may bring along a more conversational style of discourse and entails an enhanced level of interpersonal interaction during online education.

Immediacy Behaviors

Immediacy behaviors in an online setting are non-verbal actions that include reducing the physical distance that is caused by distance education, displaying relaxed postures and movements by using mimics and gestures, the intonation of voice, and keeping eye contact during interactions. These actions influence the flow of online interactions as expressed by two participants:

> *"As a teacher, as for me, I don't see their faces. I don't hear their voices. So, it also affects me while interacting with them. Because sometimes I'm just talking, just talking to whom? This is the biggest challenge for me. I cannot make eye contact. I just make eye contact with my image on the camera."* (P-3, female, 31 years old, with 8 years of teaching experience).

> *"…now I see your eyes and it feels like we are together, right? Eye contact is very important. When the cameras are on, we speak and behave as if we are face-to-*

> *face, right? So, it gives us this feeling… To raise the level of interpersonal interaction, first of all as an instructor you need to stay focused. You need to dress as you do in face-to-face courses. You need to give your students the chance to talk and participate as much as possible, open the webcam, and look them in the eye. Even if they do not open their webcams, they look at the screen and get the feeling that you are looking… So, even if they can't see you physically in the class, you can still use your body language, facial expressions, and mimics as effectively as possible to increase the quality of interaction."* (P-4, female, 32 years old, with 8 years of teaching experience)

The immediacy behaviors mentioned seem to be used by the participants as ways of projecting physical presence into online education through non-verbal constructions.

DISCUSSION & CONCLUSION

Speaking of the pursuit of a higher quality interaction in distance education, the instructors acknowledged that they try to fill a communication gap during the whole education process. Likewise, they are quite disappointed that they made extensive efforts to meet the need to build quality interactions throughout their web-based courses, but often they get frustrated because of the obstacles they face in achieving the quality of human relations they achieve in face-to-face education. Most of the obstacles mentioned during the interviews were presented in the section of findings regarding the third theme related to the problems with the learning environment and media effects.

Consistency exists between the data obtained from the interviews and the literature that course design and structure is a factor that affects interaction in online courses. As the details of the data discussed in the findings section, the social and psychological distance between the students is decreased and they develop a better sense of social presence in the online course atmosphere when the course structure includes discussions to let them give personal examples from their own lives. In a study on learner-to-content interaction, Malinovski et al. (2012) found that learners improve and construct knowledge when they are directly exposed to the content material. When the course content includes activities promoting many learners to participate by talking about their opinions and feelings, the learners feel satisfied and part of the lesson. Another study conducted by Kuo et al. (2014) indicated that learner-to-content interaction is the key indicator of student satisfaction in online courses. Thus, one can regard learner-to-content interaction as a factor that influences learner satisfaction and interactivity in online courses.

Another factor that is discussed in the interviews is computer communication literacy, which is affected by prior experience with computers and proficiency in using the synchronous conference system. Some students and instructors struggle with adapting themselves to the new technology learning environment since they are not 'natives' in the area of technology. These non-experienced ones feel ignorant or overwhelmed when they see that others have the skills to keep up with the interaction going on. Discussing the findings of his study, Ehrlich (2002) suggests that the efficiency of online courses largely depends on how easy and intuitive the interface is to use and the student's familiarity with the use of technology. It was stated that the interface should not be too challenging and intimidating for students to use the technology for educational purposes. This perspective is consistent with the findings of Danesh et al. (2015), who revealed that interaction with technology is key to the success of online education and that knowledge and the use of technology make the lessons more interesting and exciting for learners.

Discourse facilitators such as social communication strategies and immediacy behaviors that include using gestures, mimics and eye contact have been found to be one of the factors that influence interpersonal communication in an online setting. Interpersonal skills and immediacy behaviors may influence the flow of online interactions and reduce the social and physical distance that is created by distance education. The role of discourse facilitator factors in online interaction is another finding of this study that is consistent with the literature which reveals that how instructors and students communicate can impact the interaction between them. Reviewed in the literature, the results of a study conducted by Flottemesch (2000) have shown that improved discourse and quality interaction in distance learning environments may bring about improved academic achievement. In her doctoral dissertation, (Keeler, 2006) also argued that the mode of interaction and the use of discourse play a major role in the cognitive learning of students and their self-confidence during online interactions.

Some factors mentioned during the interviews appeared in the literature. However, many factors were not elaborately discussed in the literature. For example, online assessment techniques were explained by two participants as the most influential way to keep learners involved since assessment is a crucial factor that impacts

interaction in an online setting. Both participants confessed that they use the online assessment scores to threaten their students so that they feel like they have to interact and participate in the lesson. As discussed in the findings section, this attitude of instructors is pedagogically questionable despite their explanations about their despair to enable students to participate in the lesson and interact with each other. In addition; using a variety of activities to ensure distributed participation by attracting the attention of all types of learners, internet connection problems that interfere with interactions and cause distraction, the obstacles instructors face while doing collaborative activities online, psychological attitudes towards technology, and issues of privacy, creating a sense of community and belonging to engage learners, providing immediate instructor/peer feedback or integrating a variety of feedback delivery systems into the course context were also the factors discussed during the interviews but not in the literature.

Indeed, most of the participants were sincere in disclosing that they need to improve their computer communication literacy and achieve more proficiency in using synchronous conferencing systems more interactively. They revealed the need to provide extra remedial work for non-experienced students to help them keep up with the interactions going on. Two participants candidly confessed that they threaten their students with online testing scores but also mentioned that it is almost impossible to keep them motivated in an online teaching environment. They are aware that this attitude is traditional and pedagogically questionable; however, they expressed that the problems of interaction and motivation in online education forced them to do so.

When the findings of the present study (Table 2) aiming to address the research question that investigates the factors that might impact interpersonal interactions in online EFL courses are examined, it becomes clear that both novice and experienced online instructors can employ a range of factors and interaction-influencing strategies when attempting to affect interpersonal interaction in their online courses. While all of the participants acknowledged the need for greater quality interactions throughout the online courses, the main focus of the interviews was on the challenges they experience in trying to achieve the appropriate degree of involvement. The key topics that emerged as codes from the interview data included the role of course structure factors, environment and media effects, feedback and assessment techniques, and discourse facilitators. In accordance with these findings, the research by Ehrlich (2002) found that the success of online courses often depends on how simple and user-friendly the interface is and how tech-savvy students are, which can be seen as a component of course structure factors and media effects. Over 90 percent of the students who took part in the research advocated for the inclusion of more orientation and practical training for both instructors and students in online courses. When the results of this study and the present study are taken into account, it can be concluded that using technology for educational purposes shouldn't be too troublesome and intimidating for students and instructors.

Implications for Practice

The recommendations given by the participants to the online instructors aiming to increase the level of interaction in their courses, and interpretations of the researchers are neither prescriptions nor instructions for practice. The interview data obtained in this study do not attempt to give prescriptions for how online courses should be structured, nor do they attempt to give details of all the factors that might affect interaction in online education. They are only recommendations based on the observations and experiences of six participants, most of whom believe that they need more training and experience in distance education. Researchers and practitioners must decide on the relevance of the findings and whether they are applicable to their cases.

From the literature review and this research study, it is possible to draw several educational implications about what language teachers should do to promote interactivity in online courses. First and foremost, educators should focus on teaching strategies and new technologies that integrate various forms of engagement into online learning environments. The learner's online education experience will be enhanced as a result, and this will enhance learning outcomes. Secondly, language instructors should be aware of the fact that multiple, varied, and consistent communication and interaction with the learner are critical components of any online education course. In the context of online education, both the learner and the instructor are responsible for the learner's motivation and excitement. Finally, the instructors' use of social communication strategies is critical because the findings from interviews suggested that the use of various social communication strategies by the instructors such as initiation of conversation, greeting, praising, using appealing tones, and so on, improves interactive communications. Initiation of communication demonstrated to the recipient that the correspondent was eager to form a connection and discuss issues. People felt kinder, more approachable, and warmer as a result of this.

Limitations and Further Research

As discussed in the literature review part of the study, there are various theoretical perspectives that reply to the research questions. The present study focused solely on determining the factors that might influence interpersonal interaction in online courses. It has only scratched the surface of the general construct of interpersonal interaction as perceived by the active users of the online education system. It would have been ideal to interview more participants within various contexts to provide the study with a richer degree of data. Further discourse analysis of the interview transcripts could elucidate how the concepts of power and control function in online courses and traditional face-to-face classroom environments. Further detailed research to explore the factors within multiple contexts, find out what discourse says about power and control, and investigate how interaction shapes power and control in an online education atmosphere could be useful for researchers to reconsider the concepts we take for granted and gain a deeper understanding of interaction in online environments.

Statements of Publication Ethics

The authors of this article declare that the research has no unethical problems and observe research and publication ethics.

Researchers' Contribution Rate

The first author managed the entire flow of the article and study design, organized the data collection tool, and collected and analyzed the data. The second and third authors contributed to the interpretation of the findings. All authors read and approved the final manuscript.

Conflict of Interest

The authors of this article declare that there is no conflict of interest.

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Examining the Effects of Presented Activities for a Strong Supported Geometry Instruction

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Abstract

In this study, based on the expectation of high achievement and the need for strong support from all students in mathematics education, the effect of geometry instruction enriched with various activities on students' Van Hiele Geometric Thinking Levels and spatial abilities was examined. The participants of the present study, in which the weak experimental design was adopted, consisted of 22 students, who passed from the 6th grade to the 7th grade, living in disadvantaged areas in a medium-sized province of Turkey and studying at public schools in those regions. In the research, Van Hiele Geometry Test and Spatial Ability Test were used as pre-test and post-test. In the training given between the pre-test and the post-test, creative drama, digital story writing, origami, geometric construction, GeoGebra, GeoCadabra, SketchUp, educational games, and Small Basic activities were included. While no significant difference was found between the pre-test and post-test in the scores obtained from the Van Hiele Geometric Thinking Test, i. It was determined that there was a significant difference in favour of the post-test in the scores obtained from the Spatial Ability Test. In this test, the effect size value was 0.591, and it was seen that the effect was large. The study emphasizes the positive effects of presenting different types of activities in order to provide strong support in geometry instruction.

Keywords: Geometry, van hiele geometric thinking level, spatial ability, strong support

Kuvvetli Desteğe Dayanan Bir Geometri Öğretimi İçin Sunulan Etkinliklerin Etkilerinin İncelenmesi

Öz

Matematik eğitiminde tüm öğrencilerden yüksek başarının beklenmesi ve kuvvetli desteğin verilmesini temel alan bu çalışmada, çeşitli etkinliklerle zenginleştirilmiş bir geometri öğretiminin öğrencilerin Van Hiele Geometrik Düşünme Düzeyleri ve uzamsal yeteneklerine etkisi incelenmiştir. Zayıf deneysel desenin benimsendiği mevcut çalışmanın katılımcıları, Türkiye'nin orta ölçekli bir ilinde dezavantajlı bölgelerde yaşayan ve o bölgelerdeki devlet okulların öğrenim gören, 6. sınıftan 7. sınıfa geçen 22 öğrenciden oluşturmaktadır. Araştırmada Van Hiele Geometri Testi ve Uzamsal Yetenek Testi ön test ve son test olarak kullanılmıştır. Ön test ile son test arasında verilen eğitimde, geometrik deneyimler sunan yaratıcı drama, dijital hikâye yazımı, origami, geometrik inşa, GeoGebra, GeoCadabra, SketchUp, eğitsel oyun ve Small Basic etkinliklerine yer verilmiştir. Van Hiele Geometrik Düşünme Testinden alınan puanlarda ön test ile son test arasında anlamlı bir fark saptanmazken; Uzamsal Yetenek Testinden alınan puanlarda son test lehine anlamlı bir fark olduğu belirlenmiştir. Bu testte etki büyüklüğü değeri 0.591 olup, etkinin büyük oranlı olduğu görülmüştür. Çalışma, geometri öğretiminde kuvvetli bir destek sağlamak için farklı türde etkinliklerin sunulmasının olumlu etkilerini vurgulamaktadır.

Anahtar kelimeler: Geometri, van hiele geometrik düşünme düzeyi, uzamsal yetenek, kuvvetli destek

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INTRODUCTION

According to NCTM (2000), the principles that characterize high-quality mathematics education are equality, curriculum, teaching, learning, assessment, and technology. Of these principles, the equality principle states that high expectations and strong support are required for all students in mathematics education (NCTM, 2000). In other words, students at all levels of education should have equal opportunities to learn mathematics and be able to reach mathematical competence as a result (MoNE, 2018). Many countries have learning standards indicative of this mathematical competence, and learners are expected to reach these standards (NCTM, 2000; MoNE, 2018). However, various obstacles can prevent learners from reaching the standards required. Allexsaht-Snider and Hart (2001) define the requirements of equality in mathematics education as

- equal distribution of resources to schools, students, and teachers,
- equal education quality
- and obtaining fair results for students,

and stated that equality for learners can be achieved if these requirements are met. Allexsaht-Snider and Hart (2001) indicate that one of the important elements in meeting these requirements is classroom activities. According to researchers, these activities that the teacher will offer not only increase the learner's belonging to the class, but also offer them equal learning opportunities (Allexsaht-Snider & Hart, 2001, Gutstein, 2002). Therefore, considering the interests and needs of students, interventions with different activities that will strengthen them mathematically should be designed and implemented (Gutstein, 2002; 2003; Martin 2003). This situation leads us to the concept of "strong support", which NCTM also states. "Strong support" refers to a well-designed curriculum that will provoke learning, providing the necessary resources for learning and environments containing information and communication technologies, and employing different teaching methods in order to ensure equality in mathematics education (Croom,1997; Furner, Yahya, & Duffy, 2005; Hart & Allexsaht-Snider,1996; NCTM,2000).

On the other hand, especially considering geometry, which is one of the sub-learning areas in the mathematics curriculum, Paksu (2009) states that many students cannot learn geometry as much as they need or expect to learn. In addition, Duatepe (2004) states that in standard mathematics classrooms, students are expected to perform paper-pencil and calculation tasks related to geometry. However, geometry learning, by its very nature, requires geometric experiences (Battista & Clements, 1988; Jones & Mooney, 2003). Battista and Clements (1988) state that learning geometry begins with physical shapes and working on these shapes, and in this way, learners gain intuition and knowledge about their spatial environment. These experiences become formal by analysing them in the context of geometric concepts and relations over time (Battista, 2007). It has been determined that the learners get geometric experiences through the use of methods such as concrete material, information and communication technologies, argumentation, cooperative learning, and creative drama, and because of these experiences, it was determined that an increase in the geometry achievement and attitudes of the learners towards geometry (Battista, 2007; Chrysanthou, 2008; Chua, Tengah, Shahrill, Tan, & Leong, 2017; Clements, 2003; Duatepe-Paksu, & Ubuz, 2009; Heid, 2005; Hohenwarter & Jones, 2007; Kariadinata, Yaniawati, Susilawati, & Banoraswatii, 2017; Klemer & Rapoport, 2020; Manizade & Mason, 2010; Olkun, 2003; Paksu, 2009; Prigge, 1978; Tutkun & Ozturk, 2013). With the studies in the literature, it is thought that a strong support can be created for learners by transferring the activities in which these methods are used to formal learning environments.

In this context, it is thought that two elements that shape geometry learning are important in the design and presentation of learning experiences that will provide learners with strong support: Van Hiele Geometric Thinking Levels and spatial ability. While Van Hiele Geometric Thinking Levels is an indicator of the learners' forming a systematic structure in their minds about geometry and the establishment of relationships between shapes and shape classes (Van Hiele, 1986), spatial ability reveals how learners perform geometric actions (such as rotation, manipulation, orientation) in geometry learning and their level of ability to do so (Carroll, 1993). In this regard, these two elements are important in mathematics teaching, especially in the planning of teaching geometry, in the creation of the teaching content, and in the measurement of the proficiency levels of the learners. Van Hiele Geometric Thinking Levels present the structure and criteria for the order, boundaries, and measurement of the content that learners will learn in geometry teaching, while spatial ability provides indicators with the fulfilment of the actions as well as defining the actions taken in this structure (Van de Walle, Karp, & Bay-Williams, 2010). According to many researchers, these two elements cannot be separated from geometry teaching and their effect on geometry achievement is obvious (Clements & Battista, 1992; Saad & Davis, 1997). In order to provide strong support to learners with a holistic perspective, the measurement and development of Van Hiele Geometric

Thinking Levels and spatial abilities, which affect every stage of teaching, are necessary for effective mathematics teaching and effective geometry learning (Clements & Battista, 1992; 1996; Gutierrez, 1992; Usiskin, 1982).

Considering all these, Van Hiele Geometric Thinking Levels and spatial ability should be taken into account in the design, presentation, and evaluation of learning activities that will provide strong support in mathematics teaching for students. In this study, the effect of geometry instruction enriched with various activities that will strong support in learning mathematics and contribute to the learners' learning of geometry, on the Van Hiele Geometric Thinking Levels and spatial abilities of the students was examined.

Research Question

In the present study, the research questions sought to be answered in the context of this aim are as follows:

1.Does strong supported geometry instruction enriched with various activities affect students' Van Hiele Geometric Thinking Levels?

2.Does strong supported geometry instruction enriched with various activities affect students' spatial abilities?

Van Hiele Geometric Thinking Levels and Spatial Ability

Van Hiele Geometric Thinking Levels is a geometric thinking model and explains how learners perceive geometry and divide these perceptions of learners into various levels (Van Hiele, 1986). According to Van Hiele (1986), the levels in the model have a sequential and hierarchical structure, therefore, to be at one level, one must be successful at the previous level. Progress between levels depends on teaching and geometry experience, not on age and gender. If the level of teaching does not include language and examples suitable for the learner's level, learning does not take place and progress between levels does not occur (Duatepe-Paksu, 2016). According to Van Hiele (1986), the levels in the model and the requirements of these levels are as follows:

Level 1 - The Visual Level: Students initially perceive the shapes as a whole. They cannot perceive the elements and properties of shapes. By approaching shapes holistically, students focus on whether they resemble shapes they have seen before, not their features. In their minds, shapes are in discrete classes, and this classification is based on similarity to their prototype.

Level 2 - The Descriptive Level: The student realizes that shapes are composed of elements and that these elements have properties. The classifications made are based on the properties of the shapes but students cannot link these classifications. Similarly, the relationship between the properties of shapes cannot be established. Therefore, students at this level cannot make a definition that includes necessary and sufficient conditions. The definitions made are in the form of listing the features of the shape.

Level 3 - The Theoretical Level/ The Informal Deduction Level: At this level, the student establishes the relationship between shape classes and understands the hierarchy between these classes. In addition, they can establish the relationship between the properties of shapes, and as a result, they can make a definition that includes necessary and sufficient conditions. The student can make logical inferences based on features such as “If shape A has … properties, it is shape B.”.

Level 4 - Formal Logic Level: Students can reason, make inferences and proofs within a mathematical system. Inferences made at this level are more formal than those made at Level 3. At this level, the system of formal inferences is reached through axioms, theorems, and proofs.

Level 5 - Systematic Thinking Level / The Nature of Logical Laws: At this stage, students notice various axiomatic systems, reflect on these systems, and understand the similarities and differences between different axiomatic systems. In this period, he can work on non-Euclidean systems and interpret any shape, definition, or feature according to these systems.

In Table 1 below, Van de Walle et al. (2010) expressed what is expected from primary and secondary school students in the geometry dimension in the context of the Van Hiele Geometric Thinking Model. Elementary and secondary school geometry teaching content was examined in 4 dimensions as shapes and properties, transformation, location, and visualization. In each of these dimensions, what is expected from the students is classified in the visual level, the descriptive level, and the informal deduction level from the Van Hiele Geometric Thinking Levels.

Table 1. According to Van de Walle et al. (2010), Van Hiele Geometric Thinking Levels and What is Expected from Primary and Secondary School Students in Various Dimensions of the Geometry Field

	Level 1 The Visual Level	Level 2 The Descriptive Level	Level 3 The Informal Deduction Level
Shapes and Properties	- Separating and classifying using simulation - Combining shapes and breaking them into parts - Recognizing patterns and creating a whole with shapes	- Identifying special categories of 2D shapes (based on a specified property) - Identifying special categories of 3D shapes (based on a specified property) - Property-based making separation and classification - Property-based creating and/or drawing shapes	- Making assumptions and examining informal inferential arguments when relating to specific categories of figures - Making definitions with necessary and sufficient properties for shapes
Transformation	- Determining the effects of scrolling, flipping, and rotating actions on simple shapes - Defining images of shapes and objects under straight and rotational symmetry	- Running resultant transformations on shapes and objects - Determining similarity and proportional relationships between shapes - Making decorations using regular shapes or complex structures	- Doing complex activities using transformation and symmetry
Location	- Using the expressions above, below, near, far, between, left and right - Using simple coordinate systems	- Analyzing the results of transformations in the coordinate system as analytical	- Determining the results of actions performed on the coordinate system by binding them to a rule - Determine the slope of a line
Visualization	- Determining all shapes that can be created from a certain number of simple tiles - Examining solid objects with the help of their faces and edges - Opening 3D objects - Matching the faces of 3D shapes	- Identifying and drawing two-dimensional views of 3D shapes - Creating 3D structure from 2D view - Identifying surfaces formed when a solid body is cut into two parts	- Explaining the results of actions taken at Level 2 with justifications and making inferences - Creating and describing Platonic objects

As seen in Table 1, Van de Walle et al. (2010) present the content of geometry teaching by associating it with Van Hiele Levels of Geometric Thinking, this presentation reveals a theoretical and intended structure. However, the fulfilment of these expectations by the learners in all dimensions of geometry teaching and the progress of their geometric thinking levels depend on geometric experiences (Clements & Battista, 1992; Van Hiele, 1986). These experiences, on the other hand, are related to spatial ability because of the actions they involve. Spatial ability is defined as imagining, perceiving, manipulating, rearranging, and re-acquiring visual images of objects or forms (Carroll, 1993). In addition, Tartre (1990) stated that spatial ability includes understanding and using the relationships between objects in addition to the specified operations. When the literature is examined, it is seen that spatial ability is a mental process and requires being able to perform various activities on 2 or 3-dimensional objects determined in space (Zeybek, 2016).

In literature, researchers have examined spatial ability under various components. For instance, McGee (1979), Lohman (1979), Clements (2004), and Tartre (1990) discuss the components of spatial ability under two headings as spatial visualization and spatial orientation. While Linn and Petersen (1985) and Okagaki and Frensch (1994) make a distinction between spatial visualization, spatial perception, and mental rotation. In addition to that, Olkun and Altun (2003) and Contero, Naya, Company, Saorín, and Conesa (2005) emphasize the spatial relations component in addition to spatial visualization and spatial orientation. Moreover, Maier (1996) argues that these components are examined in a general framework within five components: spatial perception, visualization, mental rotation, spatial relations, and spatial orientation. As it is seen, although there are no agreed spatial ability components in the literature, almost all researchers have emphasized the spatial visualization and spatial orientation components of spatial ability.

Spatial visualization can be expressed as the creation of an image in the mind and its manipulation (Karaman, 2000; Linn & Petersen, 1985; Okagaki & Frensch, 1994). Although the expression manipulation in this definition has a meaning as intervening and performing a series of actions, it needs to define the actions it will involve. In this context, when the spatial visualization definitions in the literature are examined, McGee (1979) emphasizes the rotation and opening-closing operations on the object in his definition, while Lohman (1979) emphasizes the paper folding and unfolding operations and the unfolding of 3D objects. Tartre (1990) and Maier (1996) consider spatial visualization through moving the object and stated that this movement could be in the form of moving the whole or a part of the object. As a result, spatial visualization can be expressed as imagining an object in the mind, performing a series of operations such as rotating, opening-closing, folding-unfolding mentioned above on these objects or parts of objects, and the whole process of imagining the result of these operations. Spatial orientation, on the other hand, is defined as the individual's ability to determine the order, patterns, and appearances of objects according to their position (McGee, 1979). While Lohman (1979) defines spatial orientation as determining how the given objects will appear from different angles, Maier (1996) defines the position of the object's parts relative to each other and the object relative to other objects, establishing relationships and being able to determine them according to one's position.

Considering the studies revealing that spatial ability is an important factor in geometry teaching (e.g., Clements & Battista, 1996; Maier, 1996; Olkun & Altun, 2003, Tartre, 1990), it is of great importance how this ability is reflected in the curriculum and what the contents are in which students should use these abilities. Considering the NCTM (2000) standards, it is seen that spatial relations, transformations, visualization, and spatial reasoning are emphasized in the field of geometry learning. In this context, concerning spatial ability, learners are expected to operate on 2 and 3-Dimensional shapes, determine their parts and relations with other shapes, draw 3-Dimensional shapes from different directions in 2 dimensions, create a 2-Dimensional representation in 3-dimensional, and make transformations on shapes. In the Mathematics Curriculum in Turkey (MoNE, 2018), the relationship between spatial ability and geometry was revealed under the title of spatial relations in the primary school curriculum (1-4 grades), through the examination of place, direction, and position relations and geometric shapes. In the middle school program (5-8 grades), a relationship between spatial ability and geometry has been established through acquisitions that include activities such as determining, creating, and expanding the basic elements of 3D shapes, drawing views of structures from different sides, rotating, and shifting given 2 and/or 3-dimensional shapes.

It is seen that while spatial ability expresses the actions of individuals on shapes and objects, Van Hiele Geometric Thinking Levels focuses on how individuals perceive geometry, which includes shapes and objects, in the context of levels. It is thought that it is essential for an individual who is at any of the Van Hiele Geometric Thinking Levels to use their spatial abilities, due to the nature of geometry. In other words, to fulfil the tasks required by the levels, the individual must employ her/his spatial ability. For this reason, carrying out activities to address, evaluate and develop these two interrelated issues will contribute to the development of learners' geometry learning (Gutierrez, 1992; Naraine, 1989; Uzun, 2019).

METHOD

Within the scope of the research, pre-test and post-test were performed and a training process was conducted between the two test applications. However, the participants involved in the process were chosen for a purpose, not by chance. Therefore, in this study, a weak experimental design with single group and pre-test and post-test models was adopted (Fraenkel, & Wallen, 2006). Before the training process, all data collection tools were used as pre-test within the scope of the study. Then the training process was carried out and after the completion of the training process, the same tests were given as post-test.

Population and Sample

Due to the purpose of the study, the population was determined as the students who will start seventh grade in schools located in the disadvantaged regions of a mid-sized province in the Central Anatolia region and have high academic achievement. According to Fraenkel and Wallen (2006), the purposive sampling method is used if the researchers are going to determine the participants to be included in the sample. For the purpose of this study, a purposeful sampling method was adopted as the participants with high academic achievement were selected from the students who will start seventh grade in schools located in the disadvantaged regions of a mid-sized province in the Central Anatolia region.

The reason why the seventh-grade students were determined as the population of the study was that the most comprehensive content of geometry learning area in the mathematics curriculum of MoNE (2018) is in the

seventh grade. For this reason, the study was planned to be carried out with students who were not acquainted with the geometry learning area in detail yet, but who was studying at a grade level with some prior knowledge. When the objectives in the mathematics learning program were taken into consideration, it was decided that the best grade level that could meet this expectation was the level that finished sixth grade and started seventh grade. In addition, another preference reason is that the students at the end of the sixth grade have not received any prior instruction on some of the geometry contents that they will encounter for the first time in the seventh grade and are therefore less likely to have a prejudice, anxiety, or attitude towards geometry. Finally, the reason why the participants were selected among the students with high academic achievement in schools in disadvantaged regions is that despite their disadvantages and inadequacies, they could change this situation positively and keep their academic achievement high. The reason why the population is limited to a province is that the training process to be carried out is implemented within the boundaries of that province.

In this context, lists of schools in disadvantaged regions were obtained from the Provincial Directorate of National Education to determine the sample. There are five schools on the list. The purpose of the study was explained by interviewing the mathematics teachers at the schools one by one and for this purpose, three to five t students were identified in each school, proportional to the size of the school. In this context, a total of 24 students, 13 females and 11 males from five schools were selected to be included in the sample. Approval forms were obtained from the parents of the students for their participation in the study. Then, two male students who did not participate in the training process were excluded from the sample and the study was completed with 22 students, 13 females and 9 males.

Training Process

Within the scope of the training offered to the participants, activities related to the geometry learning area were carried out. After obtaining the necessary permissions and completing the official correspondence, the training process, involving nine activities related to the seventh-grade geometry learning area in the mathematics curriculum of the MoNE (2018), continued for five days. Each activity was prepared and carried out by experts in the field and presented with approximately 150 minutes of practice.

Since the participants from different schools were involved in the process, firstly an introductory activity that used creative drama and geometry concepts was conducted. Then, with the second activity accommodating geometry and the digital world, students were enabled to use technology effectively. In the third activity, a process in which origami was employed was realized for students to form some geometric shapes. In the fourth activity, a study on how geometric shapes were constructed with the help of a ruler and a compass was carried out. The following fifth and sixth activities were planned to combine geometry and technology again. In the fifth activity, each student made a polygon drawing with the GeoGebra software under the guidance of the instructor, and in the sixth activity, the geometric structures were examined with the GeoCadabra® and SketchUp® software to activate the spatial thinking process. In the seventh activity, students played games about geometry and designed a box game. After the eighth activity, which was taught coding for geometric shapes with the help of Small Basic software, the training process was completed with the final stage of the activity that brings geometry and the digital world together.

Data Collection Tools

Two data collection tools, Van Hiele Geometry Test and Spatial Ability Test were used. The Van Hiele Geometry Test was developed by Usiskin (1982) and adapted into Turkish by Duatepe (2000). It consists of 25 multiple-choice items and a total of five levels, five items per level. The first level (visual) included items 1.-5. of the test, was related to the visual properties and the definition of geometric shapes. The second level (analysis) included items 6.-10. of the test and rather than visual features, this level was related to the properties of geometric shapes such as square, rectangle, rhombus, isosceles triangle, and the radius and tangent of a circle. In the third level (informal deduction), items 11.-15. of the test were included and in addition to sorting and comparing the properties of geometric shapes, this level evaluated the hierarchy between these shapes, simple inferences. 16.-20. Items of the test which were in the fourth level (formal deduction) contained axioms, postulates, and theorems related to geometric shapes, and in the fifth level (rigor) included the last five items of the test, contain high-level geometric thinking process.

Usiskin (1982), who developed the data collection tool, calculated the reliability values for each level of the test as .39, .55, .56, .30, and 0.26, respectively. The reliability values of Duatepe (2000), who adapted the data collection tool into Turkish, determined those values as .82, .51, .70, .72, and .59 respectively. On the other hand, Şener-Akbay (2012) found that the related values as .45, .40, .50, .36, and .24; and .72 for the whole test. Within

the scope of this study, the KR-20 reliability coefficient calculated for the overall test was calculated as .53 for the whole test, but it was observed that the reliability values obtained for the levels were lower. The low reliability value of the levels was since there were five items in each level and five items were insufficient to obtain high-reliability coefficients (Şener-Akbay, 2012). In addition, Kehoe (1995) stated that the KR-20 value should be around .50 in multiple-choice tests with a number of items of 10-15 and that value should be around .80 in multiple-choice tests with a number of items greater than 50. As there are 25 multiple-choice items in the data collection tool, the reliability values obtained in this study were considered to be sufficient.

The other data collection tool, Spatial Ability Test, was developed by Ekstrom (1976) and adapted to Turkish by Delialioğlu and Aşkar (1999). The test consists of four sub-tests, paper folding (20 items), surface development (60 items), cube comparison (42 items), and card rotation (160 items), and a total of 282 items. The paper folding sub-test was aimed to make the participants think of the paper after folding a paper and punching it from several points. Items in the surface development sub-test included matching the numbers and letters given to the sides of a geometric shape, in open and closed forms. Finally, the items in the cube comparison sub-test were required to decide whether the cubes with different letters on the surfaces were the same, while the items in the card rotation sub-test aimed to make participants find the differences and similarities between the geometric shapes.

Delialioğlu and Aşkar (1999) calculated the reliability of the paper folding sub-test as .84; surface development sub-test as .82 at the surface formation size; cube comparison sub-test as .84 and .80 for the card rotation sub-test, in their study with high school students. On the other hand, Bayrak (2008) conducted with secondary school students, and calculated the reliability value for paper folding sub-test as .79; .74 for surface development sub-test; and .80 for the card rotation sub-test and .80 for the cube comparison sub-test. In this study, the calculated reliability values were .59 for paper folding size; .86 for surface development sub-test; .31 for the cube comparison sub-test; .96 for card rotation sub-test, and .95 for the whole test. The obtained values were high enough for the sub-tests other than the cube comparison, and it was estimated that the reliability of the cube comparison sub-test was low because the participants cannot answer all the items in the given time.

Data Analysis

The data collection tools were applied to a single group as pre-test and post-test. The Van Hiele Geometry Test, one of the data collection tools, with five multiple-choice items at each level and a total of 25 multiple-choice items in five levels. For this reason, 1 point was given for the correct answer that the participants answered in the test and 0 points were given for each wrong and empty answer. In this context, the highest score could be obtained from the test was 25 and the lowest score was 0. To determine the data analysis method, the distribution of the scores related to the pre-test and post-test applications was examined. In these distributions, skewness and kurtosis values were between 2 and -2 for both pre-test and post-test, and Shapiro-Wilk values for normality tests were not statistically significant ($p_{pre\text{-}test} = 0.21 > 0.05$; $p_{post\text{-}test} = 0.80 > 0.05$). In other words, since the sample showed similar characteristics with the population, the paired samples t-test of parametric methods was used to determine whether there was a significant difference between the pre-test and post-test mean scores.

Another data total tool, Spatial Ability Test, consists of four sub-tests and a total of 282 items. Some of the items were multiple choice and some of them are short answers. In the surface development subtest, which requires short answers, the participants who wrote the correct letter were given 1 point for this part and 0 points for the students who gave the wrong answer and left blank. The lowest score that can be obtained from the whole test was 0 and the highest score was 282. To analyse the data obtained within the scope of the research, firstly the distribution of points related to the applications was examined again. As a result, it was observed that the skewness and kurtosis values for pre-test and post-test applications were in the range of 2 and -2, and Shapiro-Wilk values related to normality tests were not statistically significant ($p_{pre\text{-}test} = 0.09 > 0.05$; $p_{post\text{-}test} = 0.52 > 0.05$). That's why the paired samples t-test of parametric methods was used to determine whether there was a significant difference between the pre-test and post-test mean scores.

Research Ethics

Since the present study is an experimental study, various precautions had to be taken to protect the participants. Within the scope of the study, the necessary permissions were obtained in three stages. In the first stage, the author, who worked at the university in the province where the study was conducted, received approval for the study from the human research ethics committee of the relevant university. With the approval from the university, the researchers obtained the necessary permissions from the provincial directorate of national education in the province where the study would be conducted. Finally, necessary permissions were obtained from the

parents' of students who participated in the study with the parent consent form. Dates and numbers of ethics committee permissions are given at the end of the article.

FINDINGS

The pre-test and post-test scores obtained in the study, which examined the effect of geometry instruction enriched with various activities on the Van Hiele Geometric Thinking Levels and spatial abilities of the students, were examined. With the parametric tests applied, it was determined whether there was a significant difference between the mean scores of the Van Hiele Geometry Test and Spatial Ability Test pre-test and post-test scores. To determine this difference, paired samples t-test was applied between pre-test and post-test. Results were shown in Table 2.

Table 2. Paired-Samples T-Test Results of Van Hiele Geometry Test

Test		n	$\bar{X}$	sd	t	p
Van Hiele Geometric Thinking Test	Pre-test	22	8.14	2.731	-.407	.688
	Post-test	22	8.36	2.381		

As seen in Table 2, according to the results of the analysis, it was determined that there was no significant difference between the pre-test and post-test mean scores in the scores obtained from the Van Hiele Geometry Test. (pre-test = 8.14; post-test =8.36; p=0.68>0.05). However, when the number of students who answered the test items correctly is examined, it is seen that the number of students who answered correctly to 9 items decreased, the number of students who answered correctly to 10 items increased, and the number of students who answered correctly to 6 items did not change. While the highest decrease in the number of students responding to the items was 4, it was observed that the maximum increase was 6.

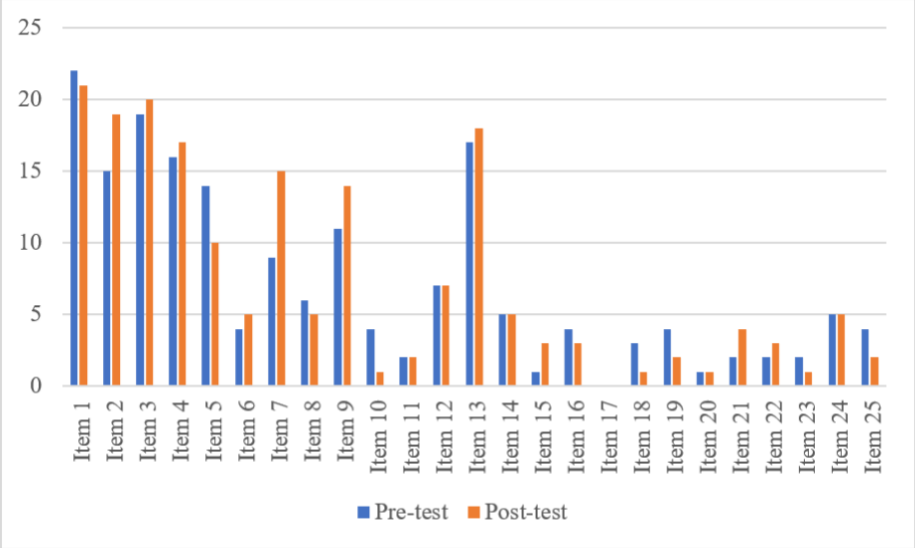
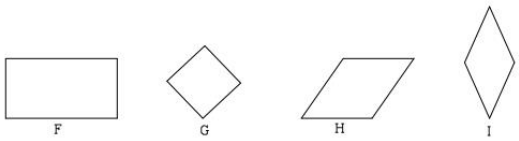


Figure 1. *The items in the Van Hiele Geometry Test and the number of students who answered these items correctly*

When Figure 1 is examined, the number of students who answered correctly to item 4 (Figure 2) decreased by 4, while the number of students who answered correctly to item 10 decreased by 3 students. The number of students who answered correctly to items 1,8,16,18,23 and 25 decreased by 1 or 2 students. It was determined that the majority of the items in which the number of students who answered correctly in the test decreased or did not differ, were in the last 15 items of the test. It is seen that these items are items for measuring the Informal Deduction Level (items 11-15), the Formal Logic Level (items 16-20), and the Systematic Thinking Level (items 21-25) from the Van Hiele Geometric Thinking Levels in the test. Item 4, which is the item with the highest decrease in the number of students who answered correctly, is presented in Figure 2.

4. Which of these are squares?



(A) None of these are squares.
(B) G only
(C) F and G only
(D) G and I only
(E) All are squares

Figure 2. *Van Hiele Geometry Test Item 4 - The item with the highest decline in the number of students who answered correctly*

If Figure 1 is examined again, the number of students who answered item 7 correctly increased by 6, while there was an increase of 4 students in item 2, and 3 students in item 9. The number of students who answered items 3, 4, 6, 13, 15, 21, and 22 correctly increased by 1 or 2 students. It was determined that the number of students who answered correctly in the test increased mainly in items 2,3,4,6,7, and 9. When the structure of the Van Hiele Geometry Test was examined, it was seen that these items were aimed at measuring the Visualization Level and the Descriptive Level from the Van Hiele Geometric Thinking Levels. Item 7, in which the highest increase in the number of students who gave correct answers was observed, is given in Figure 3.

7. In the rectangle GHJK, GJ and HK are the diagonals.

Which of the (A) – (D) is not true in every rectangle?

(A) There are four right angles.
(B) There are four sides
(C) The diagonals have the same length.
(D) The opposite sides have the same length.
(E) All of (A) – (D) are true in every rectangle.

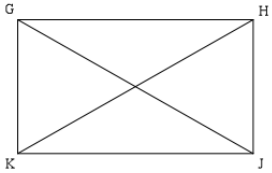


Figure 3. *Van Hiele Geometry Test Item 7 - The item with the highest increase in the number of students who answered correctly*

When the scores obtained from the Spatial Ability Test, which is another measurement tool in the study, were examined, it was determined that there was a significant difference between the pre-test and the post-test (pre-test = 119.41; post-test = 156.68; t =-5.511; p=0.00<0.05). Results were shown in Table 3. The mean of the scores obtained from the Spatial Ability Test increased by 37.27 points from the pre-test to the post-test. The eta squared value is 0.591, and it is seen that the effect is large.

Table 3. Paired-Samples T-Test Results of Spatial Ability Test

Test		n	$\bar{X}$	sd	t	p
Spatial Ability Test	Pre-test	22	119.41	25.367	-5.511	.000
	Post-test	22	156.68	31.087		

However, when the Spatial Ability Test is examined, it is seen that this test contains four separate subtests that include different tasks related to spatial ability. These subtests are the Paper Folding Test, the Surface Development Test, the Cube Comparison Test, and the Card Rotation Test, and the results of the scores obtained from the tests are given in the Table 4 below.

Table 4. Paired-Samples T-Test Results of Sub-Test of Spatial Ability Test

Test		n	$\bar{X}$	sd	t	p
the Paper Folding Test	Pre-test	22	5.91	1.998	-6.340	.000
	Post-test	22	8.73	2.815		
the Surface Development Test	Pre-test	22	17.45	5.974	-2.622	.016
	Post-test	22	21.64	8.894		
the Cube Comparison Test	Pre-test	22	18.09	4.105	-.128	.899
	Post-test	22	18.27	3.453		
the Card Rotation Test	Pre-test	22	77.95	22.967	-5.175	.000
	Post-test	22	108.05	25.417		

According to Table 4, it was determined that there were significant differences in favor of the post-test scores between the pre-test and post-test scores of the Paper Folding Test ($\overline{X}_{pre\text{-}test}$ = 5.91; $\overline{X}_{post\text{-}test}$ = 8.73; t=-6.340; p=0.00<0.05), the Surface Development Test ($\overline{X}_{pre\text{-}test}$ = 17.45; $\overline{X}_{post\text{-}test}$ = 21.64; t=-2.622; p=0.016<0.05), and the Card Rotation test ($\overline{X}_{pre\text{-}test}$ = 77.95; $\overline{X}_{post\text{-}test}$ = 108.05; t=-5.175; p=0.00<0.05). The eta square values of the differences obtained in the aforementioned subtests were .656, .246 and .560, respectively, and it was determined that the effect was large. However, when the scores obtained from the Cube Comparison Test were examined, it was determined that there was no significant difference between the pre-test and post-test scores ($\overline{X}_{pre\text{-}test}$= 18.09; $\overline{X}_{post\text{-}test}$ = 18.27; t =-.128, p=.899>0.05).

In all the items in the Paper Folding Test, which has a significant increase in the scores of the students, it is requested that a square-shaped paper be folded and punched from one point and then the position of the holes formed on the paper when opened. According to the findings, when the correct answers to the items in this subtest were examined, it was observed that there was an increase in favor of the post-test for each item. It was determined that item 10 had the highest increase with 10 students who answered correctly (Figure 4).

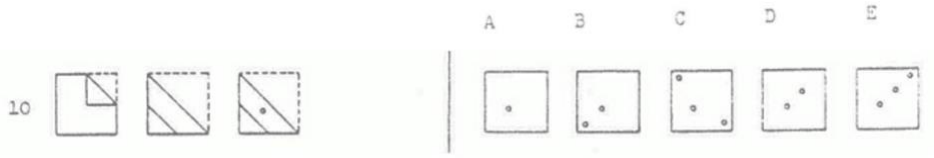


Figure 4. *Paper folding test item 10*

The items in the Surface Development Test, which significantly increased the scores of the students, include the open and closed view of an object. It is expected that the numbers given to the sides in the open view of the object and the letters given in the closed view are correctly matched. In this test, 12 objects were given, and it was asked to match the specified edges on the open and closed views of the 5 edges determined in each of these objects. When the items in this test were examined, it was determined that the highest increase in the number of students who gave correct answers was item 6. This item is given below.

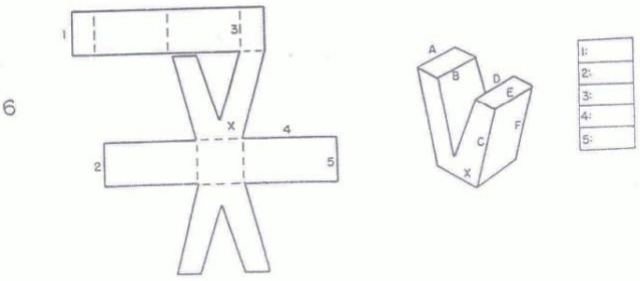


Figure 5. *Surface development test item 6*

Finally, there was a significant increase in the scores obtained from the Card Rotation Test. In this subtest, a figure is given, and it is expected to compare the eight figures to the left of this figure and to determine the figures that are the same as the given figure. While the rotated form of the figure is considered the same, its symmetrical form is not considered the same. In this test, 20 shapes were given, and they were asked to be compared with 8 shapes next to each of these 20 shapes. The answers given by the students were examined and it was determined that the highest increase in the number of students who gave correct answers was in item 17. The item with the increase is given below.

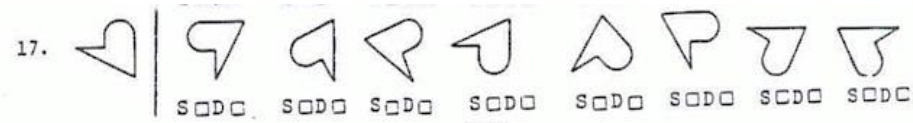


Figure 6. *Card Rotation Test Item 17*

The only subtest in which there was no significant increase in students' scores is the Cube Comparison Test. In this subtest, it is expected to determine whether a pair of cubes with letters, numbers or figures can be the same as each other. In the test, 42 pairs of cubes with three visible sides are given and it is necessary to determine whether each of these pairs is the same. Although there is no statistically significant difference between the pre-

test and post-test, when the answers of the students are examined, it was observed that the highest increase in the number of students who gave correct answers was experienced in item 18 and the highest decrease in item 5. These items can be seen below.

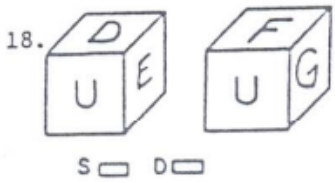


Figure 7. *Cube Comparison Test Item 18*

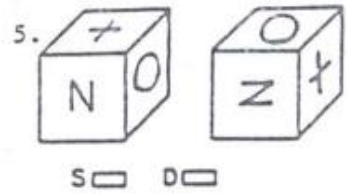


Figure 8. *Cube Comparison Test Item 5*

DISCUSSION & CONCLUSION

In this study, we investigated how geometry instruction, enriched with various activities that provide strong support had an impact on students' Van Hiele Geometric Thinking Levels and spatial abilities. According to the findings of the study, there was no statistically significant difference between the pre-test and post-test results of students' Van Hiele Geometric Thinking Levels. On the other hand, there is a positive and statistically significant difference in favor of the post-test results of students' spatial abilities. In line with these results, it can be said that geometry instruction, which includes various activities given to the students between the pre-test and the post-test, contributes to the spatial abilities of the students.

Although there was no statistically significant increase in the scores of the students in the Van Hiele Geometry Test, it is seen that the increase in the correct answers of the students in the test was mostly in the first 10 items. In the test, the first five items (items 1-5) are related to the visual level and the next five items (items 6-10) are related to the descriptive level, which is the second level. Van de Walle (2013) stated that students at the visual level should have experiences with shapes in order to change and develop their perceptions, and therefore, students should play with objects in geometric shapes and make observations. It is thought that simulating geometric shapes with directions such as "What geometric shape does this shape we have created resembles that we know?", "Which geometric shapes do you think this product contains?" on the products created in the origami activity during the application process and making comments on the products may have contributed to the students' correct answers to the questions about the visual level in the test.

At the descriptive level, it is stated that activities such as working on elements such as edges, angles, and diagonals, distorting shapes and creating shapes from pieces should be presented so that students can realize the properties of shapes (Duatepe-Paksu, 2016). It is thought that the discussion on polygons and the properties of polygons with GeoGebra and geometric construction activities, and the discussion of the edge and angle elements in the drawing of a geometric figure in the coding activity done with Small Basic software may have contributed to the students' level of noticing the properties of shapes and contributed to giving correct answers to the questions on the descriptive level. Duatepe-Paksu (2016) states that learners may appear at a certain level of geometric thinking with memorized expressions but may not have this thought. In this sense, besides the increase in correct answers to the questions about measuring the visual level and the descriptive level, it is thought that learners can actually provide the features required by that level with the experiences gained as a result of differentiated activities. Moreover, since the levels are sequential, the learner will belong to the level of geometric thinking s/he is said to be in and will be able to fulfill her requirements and then have the necessary infrastructure to move on to the next level.

On the other hand, it can be said that the reason for the lack of a significant increase in the Van Hiele Geometric Thinking Levels of the students is that the activity process is as short as five days. Van Hiele (1986) states that progress between levels depends on teaching and geometric experience. Although the geometric experiences presented in the study vary, giving each activity in a limited time of 150 minutes may not be enough

to increase the Van Hiele Geometric Thinking Levels of the students. Considering that most of the participants of the study were at the descriptive level at the beginning and end of the study, students need to gain experience to progress at their current level and reach the next level, which is the informal deduction level. The amount of experience gained in this limited time can be characterized as not allowing the establishment of the relationship and hierarchy between the shape classes, which are the requirements of the informal deduction level.

When the effect of the activities within the scope of the study on the spatial ability of the students was examined, a statistically significant difference emerged in favor of the post-test both in the general Spatial Ability Test and in the subtests of the Paper Folding Test, Surface Development Test, and Card Rotation Test. The Paper Folding Test measures spatial visualization, which is one of the sub-components of spatial ability. The increase in the scores of the students in this subtest in the post-test can be associated with the activities carried out during the implementation phase of the study. It is thought that the content of the origami activity in the study contributes to the students by providing experiences in folding and unfolding paper, in terms of including tasks such as unfolding, following the steps, and observing the results. Considering McGee's (1979) definition of visualization as manipulating, rotating, folding, and unfolding a visually given object in the mind, it can be said that the activity provides the experience of the unfolding process and the development of spatial ability by presenting visual pictures that can be stored in the mind. In addition, it is thought that performing step-by-step operations and seeing the results with the coding activity in which the Small Basic software used in the study helps the students to follow the steps in the Paper Folding Test, imagine the result of each step and continue the next step. This has contributed to the development of spatial ability with the same effect as origami activity.

If we look at the Surface Development Test, which is a significant difference in favor of the post-test in the scores the students received, it is necessary to determine the edges of the 3-dimensional shape that is given open and closed appearance in the test. In order to fulfill this requirement, students should use their spatial orientation skills, which include thinking about the position of their parts relative to each other and the order they create. With the “GeoCadabra®” and “SketchUp®” activities, the students experienced the appearance and construction of geometric structures from different aspects, examined the structure and properties of the shapes, and interpreted the reflections of the changes on the shapes. The students experienced focusing on the key features of the shapes through their experiences in these activities (Gluck & Fitting, 2003; Hsi, Linn & Bell, 1997; Kayhan, 2012; Schultz, 1991; Zeybek, 2016). Geometric experiences and strategies obtained by the students through the activities mentioned may have contributed to the spatial orientation abilities of the students, resulting in higher scores in the post-test.

There was also a significant increase in the scores obtained from the Card Rotation Test, which is among the subtests. This test aims to measure the spatial visualization sub-component of spatial ability and requires visualization of the object as a result of rotational movement (Eme & Marquer, 1999). One of the objectives of the study in the implementation process was for the students to experience the results of the rotation operations performed on 2D shapes in the GeoGebra activity. In the coding activity, in which Small Basic software was used, the students were provided to examine concepts such as rotation, rotation reference, rotation angle, and the image formed as a result of rotation. In these activities, the students had the opportunity to see the result of the rotation process and to examine the effects of the actions on the shape. Moreover, through these activities, they have gained the experience of rotating the whole and a certain part of the shape. When the literature is examined, rotating the whole and rotating the part are two of the spatial strategies that help to perform actions that require spatial ability (Eme & Marquer, 1999; Gluck & Fitting, 2003; Zeybek, 2016). It can be said that the activities carried out both provide visual pictures/experiences related to rotation and provide these strategies to the students, thus contributing to the development of their spatial abilities.

Considering all the results of the study, it can be concluded that both geometric thinking and spatial ability contribute to the geometric experiences presented to the students through activities. It is thought that the geometrical experiences of individuals are of great importance, especially in the development of spatial ability. It has been determined by the studies in the literature that the geometric experiences gained through both concrete materials and information and communication technologies contribute to the spatial abilities of the people (Battista, 2007; Boakes, 2009 Clements, 2003; Clements & Battista, 1992; Kösa, 2011; Lioa, Yu, & Wu, 2015; Turğut, 2010). In this context, the results of this research are parallel to the literature.

Implications

The current study, which focuses on strong support, examined the presentation of differentiated geometry activities to students located in a disadvantaged region through the students' Van Hiele Geometric Thinking Levels and spatial abilities. A partial but potential effect on Van Hiele Geometric Thinking Levels and a strong positive

effect on spatial ability were obtained. For this reason, it can be said that presenting differentiated geometry activities to each student in every learning environment is necessary for geometry learning. As the literature indicates, activities should be shaped around today's needs and student interest, which include technology and materials. For this reason, it is recommended that teachers use information and communication technology tools that support visualization such as GeoGebra, Cabri3D, GeoCadabra, and SketchUp during geometry instruction, include creative drama, story writing, and educational game techniques that will increase learners' motivation and participation in their activities, and associate algorithm and coding with geometry. However, if it is considered that not all teachers have a sufficient level of knowledge in the integration of these tools and techniques into instruction, training/seminars/courses on these subjects should be offered to in-service teachers.

For pre-service teachers, the necessary information and teaching activities should be presented about Van Hiele Geometric Thinking Levels and spatial ability in the "Geometry and Measurement Teaching" course in the undergraduate curriculum called "Primary Education Mathematics Teaching Undergraduate Program" of the Council of Higher Education. In addition to the compulsory "Algorithm and Programming" and "Instructional Technologies" courses in the undergraduate curriculum, it should be ensured that the necessary knowledge and skills are acquired for the design of different activities with elective courses such as “Drama in Education”, “Computer Assisted Mathematics Education”, “Activity Development in Teaching Mathematics”, “Material Design in Teaching Mathematics”, and “Teaching Mathematics with Games”. Finally, it is recommended that middle school students be offered geometry experiences in lessons such as "Mathematics Applications" and "Mental Games" lessons, as well as differentiated geometry activities in mathematics lessons.

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Statements of publication ethics

The ethics committee permission information obtained for the conduct of this study is as follows:

Relevant university ethics committee decision information: 2018/153-195, 26.09.2018

Relevant national education directorate ethics committee decision information: 76490249-604.01.01-E.18160140.

Researchers’ contribution rate

While the first of the researchers contributes to the formation of the theoretical structure, data collection, interpretation and discussion of the findings, the second researcher contributes to the collection, analysis and interpretation of the data.

Conflict of interest

The authors declare that there is no conflict of interest.

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"The Nail That Sticks out Gets Hammered down": The Influence of EFL Context on the Teacher Beliefs of a Native English-Speaking Teacher

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Abstract

The 1970s witnessed a paradigm shift in research into language learning and teaching with focus moving away from the process-product approach to the study of teachers and their cognitions. This shift in research led teaching to be viewed as a cognitive process not merely in terms of behavior, and teachers as decision makers in the classroom not as merely implementers of external theories. In the same decade, teacher cognition emerged as a separate domain of research that investigates what teachers know, think and believe. Teaching context is one of the factors that influence the formation of teacher beliefs and the enactment of these beliefs. The present study is an attempt at understanding the influence of EFL setting on teacher beliefs of a native English-speaking teacher. To this end, a single native speaker English teacher was selected and data were collected through a number of tools. The data were analyzed using grounded theory data analysis steps. The current study found that context has a certain influence on teachers' beliefs and teachers' pedagogical practices. It also found that the changes that occurred in the participant teacher's beliefs were behavioral rather than cognitive and that the context's influence on which beliefs teachers enact in practice is relatively more marked.

Keywords: Cognition, EFL context, native speaker, teacher beliefs

"Sivrilen Çivi Dövülür": Yabancı Dil Olarak İngilizce Bağlamının Ana Dili İngilizce Olan Bir Öğretmenin Öğretmen İnanışları Üzerindeki Etkisi

Öz

1970'ler dil öğrenimi ve öğretimi alanındaki araştırmada odağın süreç-sonuç yaklaşımından uzaklaşıp öğretmenlerin ve onların bilişlerinin çalışmasına kaydığı bir paradigma değişimine tanık oldu. Bu değişim öğretimin yalnızca davranışsal olarak değil aynı zamanda bir bilişsel süreç ve öğretmenlerin de dış reçetelerin mekanik uygulayıcıları değil de sınıftaki karar vericiler olarak görülmesine sebep oldu. Öğretmen bilişi öğretmenlerin ne bildiği, ne düşündüğü ve neye inandığını araştıran ayrı bir araştırma alanı olarak ortaya çıktı. Öğretim ortamı öğretmen inançları ve bu inançların uygulanmasını etkileyen faktörlerden biridir. Bu çalışma yabancı dil olarak İngilizce bağlamının anadili İngilizce olan bir öğretmenin öğretmen inançları üzerindeki etkisini anlamaya çalışmaktadır. Bu amaçla, Türkiye'de çalışan anadili İngilizce olan bir öğretmen seçildi ve veriler birkaç farklı araçla toplandı. Veriler gömülü teori analiz basamakları kullanılarak incelendi. Mevcut çalışmada bağlamın öğretmenlerin inançları ve onların pedagojik uygulamaları üzerinde belli bir etkiye sahip olduğu bulundu. Çalışmada aynı zamanda katılımcı öğretmenin inançlarında meydana gelen değişimin bilişsel olmaktan çok davranışsal olduğu ve bağlamın etkisinin öğretmenlerin hangi inançları uygulamaya koyduğu konusunda daha belirgin olduğu sonucuna varıldı.

Anahtar kelimeler: Biliş, yabancı dil olarak İngilizce bağlamı, anadil konuşuru, öğretmen inançları

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INTRODUCTION

The past four decades or so have seen the emergence of the study of teacher beliefs as a major area of research in the field of both teaching and teacher education. With a paradigm shift in the early 1970s, the focus in research on teaching moved from the process-product approach to the study of teachers' cognitive processes. The study of thought processes by which teachers make sense of their teaching started to be seen as key to understanding teachers (Calderhead, 1987; Richardson, 1996). This shift in research led teaching to be viewed not only in terms of behavior but also as a cognitive process, and teachers as decision makers in the classroom rather than as "mechanical implementers of external prescriptions" (Borg, 2006, p. 7). Investigation into teacher cognition, or "the unobservable or hidden side of language teaching," (K. Johnson, 2018, p. 259) has helped us to gain invaluable insight into individual lives of language teachers, their knowledge and beliefs, as well as the way they learn to teach and adapt their teaching to different contexts. The result is the domain of research that has come to be known as teacher cognition which is the study of what teachers know, think and believe.

Research on teachers' thought processes over the last three decades confirmed that the development of teachers' beliefs is heavily shaped by teachers' past learning and teaching experiences (Holt-Reynolds, 1992), and that teachers' instructional practices are influenced by the interplay between teachers' beliefs and the educational context (Borg, 2003, 2006, 2011; Clark & Peterson, 1986; Pajares, 1992). According to van Oers (1998), context constructs meaning and it is embodied in sociocultural activities. Studies conducted on beliefs within sociocultural tradition define beliefs as subjective interpretations of culturally-embedded social relationships, and highlight connections between teachers' beliefs and context. The interaction of context and teachers' beliefs leads to the formation of meaning. Considering the substantial influence of the educational context on teachers' beliefs and practice, it is important to investigate the relationship between teacher beliefs and practice in a specific setting.

A quick review of the literature will reveal that almost all the participants of teacher beliefs studies conducted in EFL contexts are non-native English speaker teachers (NNES) (Cabaroglu & Roberts, 2000; Cobanoglu, 2015; Fang, 1996; Farrell & Kun, 2007; Kalaja et al., 2015; Karaca & Uysal, 2021; Lorenz et al., 2021; Nishino, 2012; Song, 2015; Yuan, 2017; Zheng, 2009). Assuming native English speaker teachers (NES) have similar experiences to NNES teachers and generalizing the findings of studies with one group to both groups may be misleading. Borg (2019, p. 47) argues that there is a need for "more fine-grained, highly contextualized and interpretive understandings of language teachers' beliefs" and that this is possible through qualitative studies. He recommends utilizing classroom observations, reflective writing by teachers, visual artefacts, interviews and analysis of documents to gain a deeper understanding of teacher beliefs. Considering the growing number of native speaker teachers being employed to teach in countries where English has the status of a foreign language, there is a need for more studies documenting these teachers' experiences, problems, beliefs, and contributions. This study gains its significance from documenting teaching beliefs of a minority population, native speaker teachers in EFL settings. The current study has used qualitative inquiry in order to explore a language teacher's beliefs and the influence of context on his beliefs. The purpose of this ethnographic case study is to investigate the impact contextual factors have on the teacher's beliefs and his instructional practices. Since there seems to be a reciprocal influence between teacher beliefs and context, examining the impact of contextual factors on native speaker teachers' beliefs may reveal findings that could inform employment policies for native speaker teachers, the nature of in-service teacher education programs directed at these teachers, and better use of these teachers in EFL settings.

Definition and Nature of Beliefs

About five decades ago, Rokeach (1968) defined the concept of belief as "any simple proposition, conscious or unconscious, inferred from what a person says or does, capable of being preceded by the phrase 'I believe that…'" (p. 113). Abelson (1979) defines beliefs as the person's representation of reality that guides his thoughts and actions, while Pajares (1992) defines belief as "an individual's judgment of the truth or falsity of a proposition" (p. 316). Borg (2003) uses the term teacher cognition to refer to "what teachers think, know, and believe and the relationships of these mental constructs to what teachers do in the language teaching classroom" (p. 81). Teacher beliefs can be defined as a form of personal knowledge representing teachers' assumptions related to teaching, learning, students, classrooms, and subject matter (Kagan, 1992). Clandinin (1985) prefers the term personal practical knowledge to refer to teachers' practical and theoretical knowledge that is colored by their background, both professional and personal. The fact that teachers are "emotionally invested" in their beliefs makes defining and measuring beliefs challenging (Whyte et al., 2022, p. 2).

Some beliefs are more structured than others; in other words, some are primary while others are derivatives (Borg, 2015). Another distinction that is made between beliefs is between central and peripheral beliefs. Central

beliefs are held more strongly than peripheral beliefs and they are more connected with other beliefs (Borg, 2015). The degree of connectedness makes a belief more central and less vulnerable to change (Pajares, 1992; Rokeach, 1968). Central beliefs, also called core beliefs, have been found to have a greater impact on teachers' practices than peripheral ones (Gao & Cui, 2022).

Teachers' Beliefs and Practice

A considerable amount of research spanning the past three decades has confirmed that teachers' classroom practices are substantially affected by what they think, do, believe, and teacher beliefs are shaped by their past learning and teaching experiences (Borg, 2003; Clark & Peterson, 1984; Golombek, 1998; Kagan, 1992; Pajares, 1992; Whyte et al., 2022). Everything teachers do in a classroom is influenced by their beliefs and teachers practice in line with their beliefs (Williams & Burden, 1997). Borg (2003) built on research in mainstream and language education on teacher beliefs and found that teachers are active decision-makers, and they make educational choices by using "complex, practically-oriented, personalized, and context-sensitive networks of knowledge, thoughts and beliefs" (p. 81). The details of Borg's framework are provided in Figure 1 (Borg, 2006, p. 283).

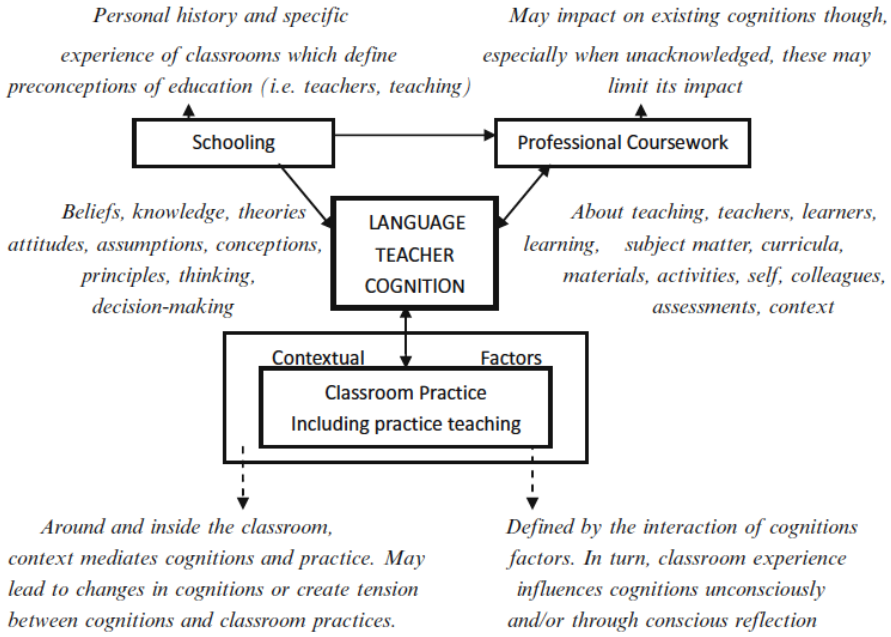

Figure 1. *Elements and processes in language teacher cognition*

Teachers construct images of past events such as images of good teachers and these images filter new information they are subjected to like in teacher education and guide them as they embark on actual teaching (Calderhead & Robson, 1991; Cole & Knowles, 1993; Johnston, 1992). Teachers' experiences as teachers, students, and persons outside the classroom, personal and interpersonal factors, and professional knowledge mediate how teachers understand and respond to their classrooms (Almarza, 1996; Golombek, 1998). However, some studies have found an incongruence between what teachers think and believe and what they actually do in the classroom. In other words, practice does not always match stated beliefs (Mercer, 2018; Whyte et al., 2022). The methods used to elicit teachers' beliefs might be responsible for the inconsistency between stated beliefs and enacted beliefs (Fives & Buehl, 2012). Phipps and Borg (2009) found that student preferences and expectations, and concerns about classroom management were the main factors that caused teachers to teach in ways incongruent with stated beliefs. Moodie and Feryok (2015) counted organizational obstacles among the reasons for the gap between teachers' beliefs and practices, Farrell and Guz (2019) pointed to program expectations and student abilities as probable reasons, while Bai and Yuan (2019) listed a number of personal and contextual hurdles to explain the gap.

Change in Teachers' Beliefs

Studies guided by cognitive and sociocultural approaches emphasize the relevance and significance of experience and background. These studies argue that students of teaching start their teacher preparation programs with experience-based powerful personal theories regarding good practice (Holt-Reynolds, 1992). Personal theories or lay theories are constructed in years by students through observation of and participation in classrooms for thousands of hours (Lortie, 1975), and learning taking place at homes and in the larger community in addition to in schools. Preservice teachers come to teacher education with a substantial amount of knowledge, prior beliefs

(Farrell & Guz, 2019; Joram & Gabriele, 1998), narrative and images (Kagan, 1992) and these "act as a gatekeeper to belief change throughout the teacher education program" (Joram & Gabriele, 1998, p. 177).

A number of studies have investigated the influence of teacher preparation programs and practicum or field experience on teachers' thoughts and beliefs and have found change that can be attributed to such programs (Almarza, 1996; Cabaroglu & Robert, 2000; Mattheoudakis, 2007; Nettle, 1998; Sendan & Roberts, 1998). Barnard and Burns (2012) argue both preservice and in-service teacher education lead to changes in teachers' beliefs. Reynolds et al. (2022) found teacher education courses led teacher beliefs to become more specific and concrete, and led teachers to consider learner- and context-related factors in their classroom practices while Ha and Murray (2021) reported that specifically-designed teacher training courses, workshops etc. could make teachers to reconsider their beliefs. Borg (2003) maintains that each trainee is influenced by teacher education programs in different ways. Other studies investigating the impact of teacher training on teachers' beliefs have found weak or no relationships between the two (Richardson, 1996; Kagan, 1992; Peacock, 2001; Calderhead & Robson, 1991). Experience, in interaction with context, has also been shown to bring about change in teachers' beliefs (Beijaard, Meijer, & Verloop, 2004; Levin, 2015). Buehl and Beck (2015) argue teacher's beliefs have some degree of plasticity and they change with time and experience.

Context and Teachers' Beliefs

Context constructs meaning and it is embodied in sociocultural activities, van Oers (1998) suggests, pointing to the significant role context plays in meaningful concept formation. "Context [italics in original] can be defined as the interconnected collection of factors that codetermine the structure and meaning of human actions" (p. 137). Studies conducted on beliefs within Vygotskian tradition define beliefs as subjective interpretations of culturally-embedded social relationships, and highlight connections between teachers' beliefs and context. Context both mediates and shapes teachers' beliefs (Borg, 2003; Gao & Cui, 2022; Sakui & Gaies, 2003). "The teachers' belief system is thus an ecological one which shapes and is shaped by contextual factors" (Zheng, 2015, p. 5).

The situated theoretical perspective (Skott, 2009) posits that the immediate physical and social setting contribute meaningfully to knowing and beliefs. This view approaches beliefs as situated, meaning they exist in the immediate context, and theorizes that the classroom community provides a basis for the development and enactment of beliefs. Therefore, the interpretation of teachers' beliefs needs to be done in locally relevant ways in order to understand these beliefs (Kumaravadivelu, 2003).

This study investigated an experienced native English-speaking teacher's teacher beliefs about teaching and learning English in an English as a foreign language context. The main focus was whether contextual factors had any influence on the participant teacher's beliefs, the nature of the influence, and if any change occurred in the teacher's beliefs. The following question informed this research study:

Research Question

1. How does context influence a native English-speaking teacher's teaching beliefs in an EFL setting?

METHOD

Research Context and Participants

The present study uses an ethnographic case study approach to investigate teacher beliefs of a native English-speaking teacher and to this end it starts with no predetermined hypotheses. The ethnographic case study has been chosen as it allows for exploration of experiences and interactions of participants in their natural setting over a prolonged period. It enables researchers to look at phenomena from the viewpoint of members of the group (Richards, 2003). It also provides profound and thick data as well as allowing for formulating hypothesis after interpreting the data instead of at the start of the study. Duff (2012) suggests case study approach allows for flexibility in design and enables looking at behaviors, performance, knowledge, or perspectives of a single or several research participants holistically and in close detail. Among the reasons for choosing ethnographic case research were the purpose to explore the participant's experience in depth and in more than one setting, to observe him while teaching as well as while interacting with the people at school and in the wider community, to gather rich data through various data collection instruments and corroborate data collected through one instrument with data gathered through the others, and to spend an extended period of time on the same site with the participant in order to familiarize myself with the context.

This study was conducted at the school of foreign languages (henceforth the SFL) of a public university in southern Turkey. The school is located in a multi-ethnic, multi-faith, and multilingual small city with a centralized population. These features of the city were among the main reasons that brought the participant to the SFL in the

first place. The majority of city residents use, in their daily lives, at least two languages, Kurdish and Arabic as native languages plus Turkish as the official language. The curriculum of the SFL covers teaching for skills up to intermediate or B1 level with a focus on comprehension skills. The majority of the instructors are NNES with only one or two NES teachers. Due to the ethnographic nature and focus of the study, it only includes a single participant selected through purposeful sampling. The participant, a middle-aged male, (with the pseudonym Paul) has been chosen because he holds a degree in a language-related major and has teaching experience in more than one English as a foreign language context, namely Japan and Turkey. Paul is American and has been teaching speaking and writing classes in the SFL for four years.

Although English is by far the most widely studied foreign language in Turkey, its use is limited to educational and business contexts. It is taught as a foreign language in primary, secondary and tertiary level educational institutions but it is not used in daily life. For the majority of learners language classes are the only venue where they can use English.

Data Collection

Data were collected over a period of six months through direct observations, in-depth interviews, narrative accounts, and journal keeping. The interviews, which were audiotaped, consisted of semi-structured broad questions about the participant's current teaching experience in Turkey and his previous experiences in Japan to guide him during interviews. Classroom observations, also audiotaped, were conducted once every two weeks on average and were limited to two class sessions each, which was about 90 minutes. Observations outside the classroom were less formal and took place in the participant's office, at various facilities on campus, at his home, as well as at various social occasions. Observations were followed by short discussions with the participant to clarify any confusion on my part and to avoid misunderstandings. I kept a personal research journal to note down my thoughts and reflections after observations and interviews as well as during discussion sessions in order to avoid projecting my own experiences onto those of the participant or interpreting data based on my own personal experiences.

Since I aimed to discover changes in my participant's teacher beliefs, I needed to look at his experiences diachronically but my only access to his previous experiences was through narrative accounts. It was in this aspect that narrative accounts served particularly well to my research purpose as they offer insight into people's private worlds, a window into people's beliefs and experiences (Bell, 2002), which is quite difficult to do via experimental methodologies. A significant advantage of narratives is that "They are transformative as they shift the power relationship between researchers and participants, and between teachers and learners, making the object of the inquiry into the subject and granting the subject both agency and voice" (Pavlenko, 2007, p. 180). The participant provided two long, detailed narrative accounts. I asked the participant to write journal entries at the end of every week to reflect and comment on the week and hand these to the researcher (me) afterwards.

Data Analysis

Data analysis was conducted in a recursive and reflexive manner and incorporated insights and feedback from both the participant and the researcher. Observations, interviews and discussions were audiotaped, transcribed and coded for recurrent, relevant themes that were related to the participant's teacher beliefs and experiences. Data were analyzed in an ongoing way during the data collection period and afterwards. Three steps were followed in data analysis: open coding, axial coding, and selective coding. In the open coding stage, I read the interview and classroom observation transcripts, narratives, and journal entries several times to become familiar with the data. As I was coding each paragraph, I specifically looked for instances in the data that pointed to the influence of context on the formation or modification of the participant's teacher beliefs and his classroom practices.

In axial coding, the data was combined in new ways using the coding paradigm to find out similarities, cause-effect relationships and the like. The subcategories created in the open coding stage were analyzed for their properties and dimensions and thereby creating main categories in the axial coding process (Strauss & Corbin, 1998). In the final stage, selective coding involved defining the base category and establishing its relationship with the other categories in a systematic manner by considering shared characteristics, consequences, relationships and so forth of main categories reached in axial coding phase. This inductive and bottom-up data analysis process (Creswell, 2007) produced four main themes: adaptability, critical teaching, contextually-shaped teaching, and strategy building.

Research Ethics

At the time of data collection, I had almost five years of experience teaching at the site where the participant worked, and so I was already familiar with the institutional culture and how the system works. I had many informal discussions with the participant regarding language teaching and learning as well as our classroom practices over the years prior to the start of this study. I can say that I had already earned the participant's trust and this led him to disclose information to me comfortably in interviews and act naturally during observations. I used different methods of data collection in order to compensate weaknesses in one instrument with strengths of another. The use of different data collection methods also enabled me to obtain a variety of data and have a more holistic view of the findings. The trustworthiness of data was enhanced by cross-checking data collected from various instruments. The participant was asked to review and comment on analyses in order to clarify any misinterpretation, a process called member checking (Creswell, 2007). By providing rich descriptions of the context, the participants, and the data collection and analysis procedures, I tried to add to the credibility of the study. Thick descriptions enable readers to check whether findings of the study could be transferred to other settings. The steps followed in data analysis were also explained in detail.

As the researcher in this qualitative study, I have been working in the same institution where the participant works for the past six years, five years with the participant. As a non-native English-speaking language teacher, I have considered the presence of a native speaker English teacher in the institution as an asset. I quickly became friends with the participant right after he started working. I frequently had discussions and chats with him regarding all aspects of English language teaching and learning. I consulted with him about grammatical structures, lexical items, pronunciation matters, and many other issues. As we became good friends as well as colleagues, our discussion topics diversified to include sociocultural and socio-political issues. My familiarity with American culture and politics, mostly through media, and his interest in middle eastern cultures and languages brought us closer. This is noteworthy as I believe it was this close friendship and collegial cooperation that made the participant act naturally during the observations and disclose his real beliefs and thoughts in the interviews and narratives. Working in the same institution and teaching similar and sometimes the same classes mean the participant and I have similar though not the same experiences. This is something that I as the investigator need to be conscious of while interpreting the findings of the study.

FINDINGS

The analysis of the interviews, written narratives, journal entries and observation transcriptions revealed "survival in EFL context" as the main category. It was found to be a consequence of the four categories "adaptability," "critical teaching," "contextually-shaped teaching" and "strategy building." Each category also subsumed several subcategories. The subcategories that constituted the category *adaptability* (See Figure 2) were found to be *non-imposing native speaker attitude*, *adjustment* and *cooperation with colleagues*.

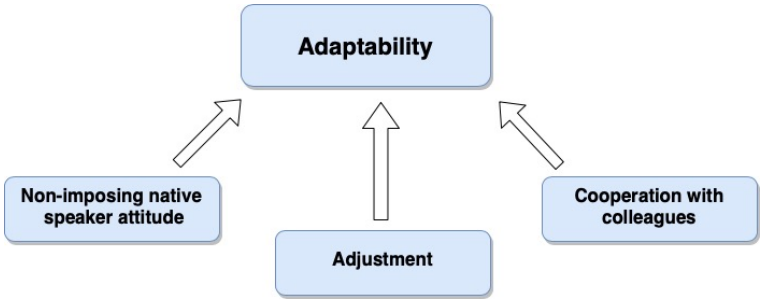

Figure 2. *Adaptability category and its subcategories*

Being an NES among a predominantly non-native English-speaking faculty put pressure on Paul as a slight assertion of his native speaker identity could jeopardize his relationship with non-native colleagues. In the interviews and narratives, he explained how he threaded carefully not to impose his native identity in talks and discussions with the other teachers:

I think but maybe you [researcher] don't have this impression that I impose myself as a native speaker unless asked. Unless you ask me what I think of a sentence, if it is definitely wrong I'd say it, you know, that doesn't work, but I am not going to comment on anything unless I am asked. (Interview II)

When Paul started teaching in Japan and then in Turkey, he had his ideas of role models of good teachers from preschool to university, what constituted effective teaching and how teacher-student relationship should be like. When he faced the contextual realities, he first tried to implement what he believed in. However, this did not

always work, and so he was forced to make adjustments to his practices and when adjustment was not possible, he avoided the practice altogether.

They [Japanese students] were in small groups because that's how they always functioned in Japan and they form these naturally. They are functional groups unlike the groups I encounter here in Turkey, which are dysfunctional groups. Here in Turkey pair work is impossible. I don't know what to do. I have given up. (Interview II)

The statement "I have tried to call on every student so they feel I want to talk to all of them unless they completely turn me off" (Interview II) shows Paul exerted effort to be inclusive in his class just like his kindergarten teacher. However, contextual factors, whether they were about social hierarchies or classroom dynamics, did not always enable Paul to practice by what he believed in and had to modify his teaching in some ways.

Eventually when the students are detaching I just gather the students who are listening closer to me, not physically but within the classroom, which doesn't help the situation and sometimes I just let the students detach and I think I really shouldn't put any more effort there because it is not going to be rewarded. (Interview II)

In addition to sharing problems, Paul also talked to his colleagues about the teaching practices that worked well. Carol is a language teacher by training, while Paul is a linguist and thanks to one-on-one discussions they frequently had, Paul greatly benefitted from Carol's experiences as exemplified by the statements below:

Carol was a very experienced teacher who had been working in Turkey for some years and I quickly realized that I could learn a lot from her about how to teach students in Turkey and about how to survive in general. (Narrative II)

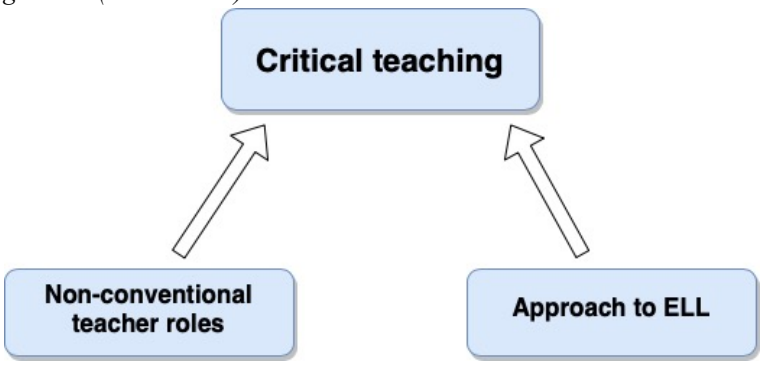

Figure 3. *Critical teaching category and its subcategories*

The category *critical teaching* has two subcategories, *non-conventional teacher roles* and *approach to ELL* (See Figure 3).

Paul recounted in the interviews and written narratives the teachers that had a significant impact on him and how they influenced his beliefs and teaching practices. One of those first teachers who influenced Paul was his German teacher, who is the reason why Paul believes in the value of grammar in language learning and teaching as the German teacher taught grammar as grammar. "My middle school German teacher, who loved grammar and loved paradigms and was always making us paradigms completely and I discovered I really enjoyed that" (Interview III). One of the teachers who contributed to Paul's beliefs about the value of speaking in language learning and teaching is his Spanish teacher in high-school. He said, "My Spanish teacher in high school was very much about speaking" (Interview III).

Still, the most influential teacher in Paul's life in terms of the formation of his teaching identity was Francois. He was a lecturer at the French department of Macalester College and a native speaker of French who lived at the French house where Paul stayed during his undergraduate years. Paul summarizes his influence as "basically his pedagogy is my pedagogy" (Interview III). What made Francois's teaching effective, in Paul words, was his performance skills. He supported his teaching with clownish performance, laughter, jokes, pantomime, etc. The last teacher that Paul mentioned as an influence on him and his teaching beliefs was his professor of historical linguistics, Calvert Watkins. Paul describes the first time he met Watkins: "I went and I met Calvert and it was like intellectual love at first sight. I was thunderstruck. Calvert was like a second father to me" (Interview I).

Paul observed that both in Japan and in Turkey, the curriculums were geared toward drilling and were generally exam-oriented. For Japan, he said, "The Japanese education system involves a lot of fill-in-the-blanks type of studying. It was very exam-oriented" (Interview II) and for Turkey, "The most deeply frustrating thing

about the classroom culture as I have seen it in the EPP [English preparatory program] is the mentality of 'fill in the blank'" (Narrative II).

To motivate his students in Turkey, Paul decided to first explain to them the reason why they need to learn English and make English study seem meaningful to them. Paul summarized his strategy as:

So much they encountered in the Turkish education system did not seem relevant to them. Every year they get the same thing in English and they never see the motivation for learning that. The problem is greater than English. It's pointing out motivation to them. Why are they learning this? (Interview II)

The region where Paul works is economically underdeveloped and politically problematic with violent events occurring now and then. Paul is aware of the problems local people experience and their impact on students' personal and academic lives. It is challenging for any teacher to motivate students who are mentally preoccupied with the economic conditions of their families or the political conflict raging in their region. Paul seems to have struck a chord with the students by pointing out the role English can play in their lives:

When they seem unmotivated especially two years ago, when there were a lot of violent developments, one student told me he cannot study because he has other things to think about. I said to the whole class… 'I know you are experiencing terrible things… But if you want to tell the world and you tell them in Turkish nobody will listen because nobody in the world knows Turkish. If you tell the world your story in English people will listen because all around the world the media and the general readership speaks English. So, your voice will be heard if you speak in English. They were all flabbergasted. Oh! He is right.' (Interview II)

Erasmus exchange program is one of the few opportunities available to Turkish students and Paul is well aware of this, so he urges the students to apply for the program and offers his assistance to them throughout the application process.

I always try to give them tools to talk about themselves understandably in English just to make things easier. So, if they do Erasmus, they can talk about these things. (Interview III)

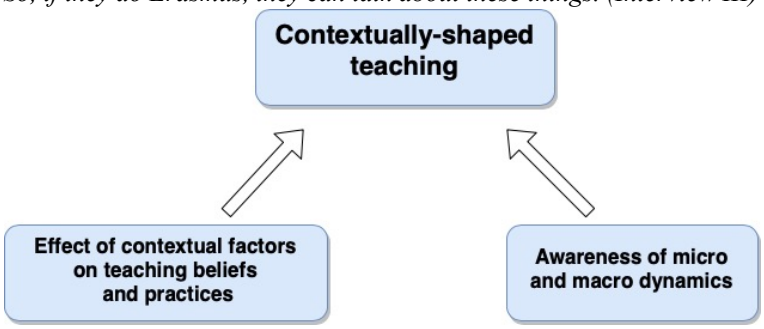

Figure 4. *Contextually-shaped teaching category and its subcategories*

The subcategories of *contextually-shaped teaching* are *effect of contextual factors on teaching beliefs and practices*, and *awareness of micro and macro dynamics* (See Figure 4).

Paul took a holistic approach to teaching and viewed students as social agents with strong ties to the community they are situated in. Paul is a stark contrast to the cliché foreign teacher who is only interested in conducting his classes and is detached from sociocultural, political and religious identities of students. In his discussion of one of the classrooms he was teaching, he said, "There are two separate groups of girls. They don't like each other. There are many cliques. That's one thing that's difficult" (Interview II).

Another reflection of the context on Paul's teaching was discussion of certain issues. In the Turkish context, for instance, he was careful about speaking about political problems facing Turkey such as the conflict in the east and southeast of the country. Turkey is a predominantly Muslim country and religious activities of non-Muslims usually arouse suspicion. Religion, culture, politics and sexuality are some of the issues Paul avoids discussing openly for fear of being reported to authorities. "I hope I don't get deported for missionary work. I thought maybe there is a spy who would go to tell the rector or something" (Interview II).

On teacher-student relationship Paul recounted "I always try to present myself as a friend and someone who is generally interested in what the students have to say" (Narrative I). Paul's beliefs faced a serious challenge in the Turkish context. He was aware that if he treated the students the way he treated them in the US or in Japan, he might experience serious problems, but he also did not have an alternative approach to teacher-student relationship, especially when it comes to his relationship with female students: "In fact, I never know where I am with the female students" (Interview II).

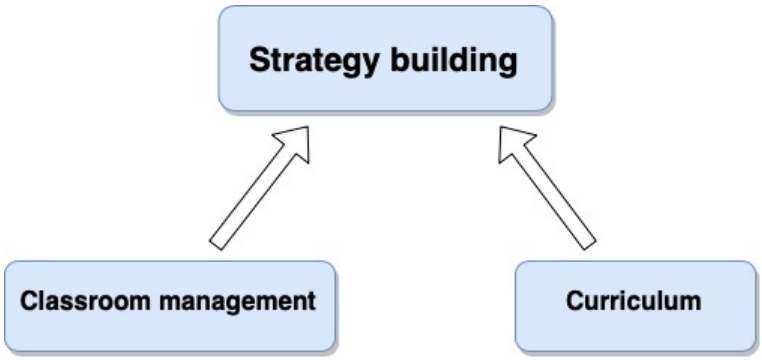

Figure 5. *Strategy building category and its subcategories*

The last category *strategy building* has *classroom management* and *curriculum* as subcategories (See Figure 5).

Paul faced a dilemma when he started teaching in Turkey, but instead of becoming a controlling teacher since he knew this would threaten his survival as a foreign teacher, he chose to remain as a non-authoritarian teacher and cope with contextual challenges of classroom management through different strategies. Paul describes this strategy by comparing and contrasting the Turkish and Japanese contexts:

One problem I have in the classroom in Turkey is that I often develop a good relation with the strongest personalities and more charismatic members of the classroom, and use them as my allies in controlling the classroom. This can come off as playing favorites, but I try to counteract this effect. Perhaps this is a habit inherited from Japan. (Narrative I)

Paul believes the curriculum of any language institution should be developed with the goals and needs of students in mind, and then the skills required to achieve these goals should be determined. To my question about how the curriculum of his institution should be like, Paul responded:

If I had complete control over the curriculum of the EPP [SFL], I would of course start by assessing what the goals of the curriculum were—that is, what skill do the students need to acquire the most? And where and when will they use these skills after acquiring them. (Narrative II)

DISCUSSION

Theme One: Adaptability

This study found that prior schooling experience of teachers has influence on the formation of teachers' beliefs about good language learning and teaching practices as well as images of good teacher models. Lortie's concept of "apprenticeship of observation" might explain Paul's belief in group work. Lortie basically argues that teachers' experiences as learners are critical in shaping their beliefs and identities as educators as they spend about 13000 hours at school observing their teachers. Paul talked about the benefits of group work in second language learning, saying his class did a lot of group work while they were studying a second language. I think it is clear from the data no change occurred in Paul's beliefs regarding group work and the value of participating as members of a group but social dynamics made him change his instructional practice in a way that did not clash with deep-rooted traditional learning. External factors at societal level acted as hindrance (Buehl & Beck, 2015) or constraint (Clark & Peterson, 1984) to Paul in implementing his espoused beliefs. Traditionally, group or pair work has rarely occupied any place in the Turkish education system. Lecturing or making students work on their own has been popular methods of teaching.

Teachers construct images of past events such as images of good teachers and these images filter new information they are subjected to as in teacher education and guide them as they embark on actual teaching (Cole & Knowles, 1993). The images of favorite teachers and teaching styles impact on shaping teachers' beliefs and subsequent educational practices; in other words, teachers use these images as models of action (Calderhead & Robson, 1991). The findings of this study confirm the significance of images of effective teacher models that students start to form during their school years that inform their teacher beliefs in their teaching careers. Paul was highly influenced by his kindergarten teacher as she valued every student in her class and believed each and every student had a role to play in the classroom regardless of their personality.

A teacher might hold certain beliefs regarding a specific aspect of teaching but may not be able to implement their beliefs due to external factors such as curriculum. Some studies have referred to this as incongruence between teachers' espoused beliefs and enacted beliefs (Almarza, 1996; Phipps & Borg, 2006, 2009;

Smith, 1996). This study found that Paul believed that teachers should have some control over lesson planning but this was made impossible by curriculum constraints. For instance, although Paul opposed and did not have faith in the value of highly structured grammar drills such as fill-in-the-gap kind exercises, he was forced to do such drills frequently. This behavioral change in Paul's instructional practice is not backed by any cognitive change in his teacher beliefs.

It is reported in the literature that there are different sources where teachers get their ideas and teaching experience and informal talks with colleagues have been found to be among the top influences (Barnard & Burns, 2012; Crookes & Arakaki, 1999; Farrell, 2003). The current study found that Paul's discussions and consultations with his colleagues, both foreign and local, had a significant impact on the enactment of his beliefs and his pedagogical practice in general. This finding is supported by the literature as exemplified by van den Broek et al. (2019), "teachers will gain a better insight into their beliefs" (p. 345) through collaboration with their colleagues.

This study looked at the interaction of native speaker identity of the participant with his relationship with other teachers and students in the Turkish EFL context and found that the participant as a native speaker felt he had to be conscious of his native speaker identity. He believed if he asserted the fact that he was a native speaker, it could jeopardize his relationship with his non-native speaker colleagues. His efforts not to dominate his colleagues with his native speaker teacher identity could be seen as part of his struggle to adapt to the context. As an observant individual, he read classroom and social dynamics quite well, and threaded carefully in his interactions with students and the community. It seems the Japanese proverb that "the nail that sticks out gets hammered down" guided Paul's relations with the Japanese and the Turkish community.

Theme Two: Critical Thinking

It has been argued that teachers may make certain changes to their pedagogical practices depending on contextual variables such as the socioeconomic level of the school (Rubie-Davies et al., 2011), students' needs and expectations (Johnson, 1990) or the gap between theory and practice (Barcelos, 2015; Johnson, 1994; Kagan, 1992). The data revealed that not all the roles Paul assumed could be categorized as conventional teacher roles and actually some are not directly related to language teaching. Certain students particularly influenced Paul in his (re)interpretation of teacher roles. He threaded the line between a teacher and an activist in his understanding of teacher roles, which could be associated with critical pedagogy that promotes social justice and transformation of the society through raising consciousness. Paul's beliefs about teacher roles seem to have been heavily influenced by the contextual realities of Turkey.

Paul observed that both in Turkey and in Japan, the curriculums were geared toward grammar drilling and were generally exam-oriented. He realized students needed to be motivated to study English and their past language learning had not been meaningful. These findings are related to hindrances that Buehl and Beck (2015) label external factors in the model they developed. Bai and Yuan (2019) reported similar findings in their study with English teachers in Hong Kong. Working in the Turkish EFL context made Paul believe in the value of meaningful interaction for the students by introducing them to Erasmus and Couchsurfing.

The findings of the current study confirm the significant role "apprenticeship of observation" (Lortie, 1975) plays in the development of teachers' beliefs regarding effective teacher images and teacher roles. These findings are also supported by Cancino et al. study (2020). The EFL contexts where Paul worked enabled him to enact his beliefs in contextually meaningful ways and through contextually relevant practices. Paul's having student roommates in Turkey while teaching could be seen as a reflection of his beliefs about teacher roles, which seem to have shaped partially during his stay at the French house in his undergraduate years. The EFL context confirmed Paul's beliefs in this regard though the enactment of his beliefs occurred differently in the two contexts. The way Paul tried to make English learning meaningful for EFL students also illustrates the effect context has on the realization of espoused beliefs. His efforts to encourage EFL students to do Erasmus exchange, Couchsurfing or tell their stories of suffering through English are an indication of Paul's tweaking his teacher beliefs to make his pedagogical practice meaningful in the EFL setting. Cancino et al. (2019, p. 309) call this tweaking of beliefs to fit the teaching context "blended apprenticeship of observation."

Theme Three: Contextually-Shaped Teaching

Zheng's (2015) framework of "EFL teachers' complex belief system" (p. 36) suggests a complex and dynamic relationship between teachers' beliefs and practice. He characterizes teachers' beliefs as complex, dynamic and contextualized open systems, and refers to interrelationship and interaction between teacher beliefs, practice and context. This study also found the significant role context played in the interaction of Paul's teacher

beliefs and his instructional practices. He is interested in all aspects of his students and shapes his teaching and classroom management practices with classroom and social dynamics and other contextual factors in mind.

Social, cultural, and historical contexts teachers occupy have an impact on their beliefs (Levin, 2015). In the face of unfavorable societal circumstances, teachers may be forced to make changes to their pedagogical practices that contradict their beliefs. Their free will to put into effect what they believe in may be restricted by external factors in the environment (Cave, 2015). The data for this study revealed that Paul was extremely conscious of the socio-political situation of the region where he worked in particular and of Turkey in general. He always kept this in mind when choosing supplementary materials or discussion topics for speaking or writing assignments. As a Christian American teacher, he was concerned about receiving negative reactions from students, the university management or the wider community. This influenced his classroom actions in such ways as avoiding discussion of certain issues, and relationship with students and the community.

Theme Four: Strategy Building

On the one hand, Paul defines himself as an anti-authoritarian teacher. On the other hand, he believes certain situations may make strictness necessary. To better understand these apparently contradictory belief statements, we need to consider Zheng's (2015) argument that there is an interconnected and co-adaptive relationship between teachers' beliefs and contexts. After several years of experience of teaching young adults in Turkey, Paul has noticed significant differences between the Turkish education context and the Japanese and American contexts. This realization may have led to a change in Paul's beliefs about how to best manage a classroom or just caused certain instructional alterations in his practice without any cognitive change. In either case, the influence of the context in teachers' beliefs and practices is warranted as argued by Borg (2006).

The current study found that the participant teacher's beliefs about classroom management and teacher-student relationship were strongly influenced by a number of teacher figures in his student life and the images of effective teacher models guided him during his teaching career. The findings of the present study, similar to findings reported by Calderhead and Robson (1991), Johnston (1992), Kagan (1992) Cole and Knowles (1993), and Johnson (1994), clearly confirm the strong influence teacher images have in shaping Paul's beliefs as a teacher and guiding his pedagogical practice.

CONCLUSION

The first conclusion of the current study is that teachers' beliefs take shape throughout their schooling experience with effective teacher models having a substantial impact on the formation of these beliefs. The majority of teachers' beliefs that are already firmly established by the time they enter education programs or actually start teaching are resistant to change and show limited variance across contexts. This study also found that the changes that occurred in the participant teacher's beliefs were behavioral rather than cognitive. Specific aspects of EFL context such as classroom and societal dynamics, socioeconomic status of the students, and curriculum constraints impeded the teacher in putting his beliefs into practice. The participant either avoided the practice altogether or chose to adjust it to contextual conditions. Figure 6 summarizes the findings that this study revealed.

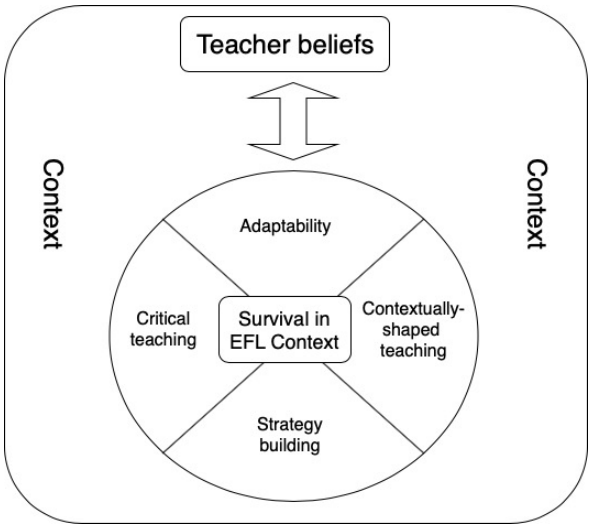

Figure 6. *Theoretical model for survival in EFL context*

Another conclusion this study arrived at is that although EFL context influences teacher beliefs and practice to some extent, the influence is not congruent across contexts. Different EFL contexts seem to influence teacher beliefs in different ways as evidenced by the comparison of the participant's teaching experiences in Japan and in Turkey. Each context has its unique characteristics and the interplay between these characteristics and teachers' beliefs influence instructional practices in different aspects and to varying degrees. This is in accordance with conclusions reported in the literature, by Sato and Oyanedel (2019) for instance.

As a final point, this study concludes that contextual factors have an influence on teachers' beliefs and their instructional practices though this influence seems to lead to limited cognitive change in teachers' beliefs. The context's influence on which beliefs teachers enact in practice is relatively more marked. The context, it may be argued, either impedes or enhance the individual's efforts to shape their lives, and thereby impacting on their "freedom quotient," the scale that aims to capture "the ability to generate options for oneself, to choose, and then to pursue one or more of those options" (Cave, 2015).

The findings of this study offer an insight into the challenging teaching experience of NES teachers in EFL settings who struggle to achieve a balance between their teacher beliefs and identity, and sociocultural dynamics of the community they are situated in. Their experience is marked by a constant struggle for adaptation and survival in a foreign setting. Studies like this one can enable policy makers to better understand NES teachers and to make their teaching experience less challenging. Such attempts to better understand the psychology of language teachers will also contribute to their wellbeing professionally and enhance the quality of their teaching and their students' learning as they are interconnected (Mercer, 2018).

This study sought to examine the case from many aspects in order to draw a holistic picture through thick descriptions and multiple data collection tools to corroborate each other. The in-depth nature of this study with one participant might inspire further studies into the impact of different contexts on professional experience of language teachers and implications for teacher education programs.

Statements of publication ethics

Cag University Ethics Committee issued an approval certificate for the data collection instruments used in this study with the decision number SOBE-2058 on 24 December 2018.

Researchers' contribution rate

The study was conducted and reported by the corresponding author.

Conflict of interest

The author of this article declares there is no conflict of interest.

Acknowledgment

This article is based on the corresponding researcher's PhD study.

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Pre-service English Language Teachers' State of Preparedness to Teach and its Sources in Field Experience

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Abstract

This study examined senior pre-service English language teachers' (PSTs) state of preparedness to teach and its sources during their field experience. In a longitudinal descriptive design, including school experience and teaching practicum phases, one-on-one, semi-structured interviews were conducted with 30 PSTs. Cross-sectional and retrospective data were collected and analyzed through constant comparison method. At the beginning of the entire process, the PSTs were observed to be either prepared or not prepared to teach. However, as the field experience continued, those who felt somehow prepared to teach emerged. Besides, despite obvious decrease in their number over the field experience, those who felt prepared to teach were more compared to those who were not or somehow prepared to teach. The PSTs attached their preparedness to teach to higher teaching efficacy perceptions and their unpreparedness to teach to untested teaching competencies before experiencing field experience. Having been through the process, they were observed to put strong emphasis on their professional and developmental needs fulfilled by their school-based mentors. Despite variations and fluctuations in the sources that the PSTs attached to their preparedness to teach, the findings revealed the pivotal role school-based mentoring played upon the development of PSTs' preparedness to teach.

Keywords: English language pre-service teachers, field experience, preparedness to teach, pre-service teacher education, school-based mentors.

Öğretmenlik Uygulamasında İngilizce Öğretmeni Adaylarının Öğretmeye Hazırbulunuşluk Durumları ve Onun Kaynakları

Öz

Bu çalışma İngilizce öğretmeni adaylarının uygulama okullarındaki öğretmenlik uygulaması sürecinde öğretmeye hazırbulunuşluk durumlarını ve onun kaynaklarını incelemiştir. Okul deneyimi ve öğretmenlik uygulaması fazlarını kapsayan boylamsal betimsel araştırma tasarımı içerisinde, 30 İngilizce öğretmeni adayı ile bire-bir, yarı-yapılandırılmış görüşmeler yapılmıştır. Kesitsel ve retrospektif veri toplanmış ve sürekli kıyaslama yöntemi ile analiz edilmiştir. Tüm sürecin en başında, öğretmen adaylarının ya öğretmeye hazır ya da öğretmeye hazır olmadıkları gözlenmiştir. Ancak öğretmenlik uygulaması süreci devam ettikçe, öğretmeye kısmen hazır olanlar da ortaya çıkmıştır. Ayrıca, süreç içerisinde sayılarında bariz bir düşüş olsa da öğretmeye hazır olanlar, öğretmeye hazır olmayanlar ve öğretmeye kısmen hazır olanlara göre sayıca daha fazladır. Öğretmen adayları, öğretmenlik uygulaması süreci öncesinde öğretmeye hazırbulunuşluklarını yüksek öğretmenlik yeterliği algılarına, öğretmeye hazır olmayışlarını test edilmemiş öğretmenlik yeterliklerine bağlamış olsalar da tüm süreci deneyimledikten sonra okul-tabanlı mentörleri tarafından karşılanan mesleki ve gelişimsel ihtiyaçlarına kuvvetli şekilde vurgu yaptıkları görülmüştür. Öğretmen adaylarının öğretmeye hazırbulunuşluklarını atfettikleri kaynaklardaki çeşitliliğe ve dalgalanmaya rağmen, bulgular okul-tabanlı mentörlüğün öğretmen adaylarının öğretmeye hazırbulunuşlukları üzerindeki esas ve önemli rolünü göstermiştir.

Anahtar kelimeler: İngilizce öğretmen adayı, öğretmen adayı eğitimi, öğretmenlik uygulaması, öğretmeye hazırbulunuşluk, uygulama okulu öğretmenleri

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INTRODUCTION

Field experience (hereafter FE) has been systematically integrated into teacher education programs as a key component over the last three decades (Biermann et al., 2015). Briefly, it aims "to support the development of teaching skills in prospective teachers" (Biermann et al., 2015, p. 79), and "offers [PSTs] a variety of experiences and opportunities for attaining professional growth through observation, practice, reflection, meetings, and interactions" (Mukeredzi & Manwa, 2019, p.32). Conversely, FE is also reported as the time when PSTs have difficulty in connecting theory with practice (Yin, 2019). Thus, as a complex transitional phase between faculty education and teaching career, FE has a critical significance in educating well-prepared teachers.

Many studies have revealed that there is a positive correlation between FE, the quality of mentoring pre-service teachers receive, and their sense of preparedness to teach (A. L. Brown et al., 2015; M. Öztürk & Yıldırım, 2014; Siwatu, 2011; Zientek, 2007). The two significant actors, faculty and school-based mentors, work together to help PSTs bridge faculty education with teaching in real classrooms. While the former ones work as liaisons between faculty program and school-based practices (Clark, 2009; Malderez, 2009; Pignatosi & Magill, 2012; Selvi, 2012), school-based mentors guide and train PSTs as they get to know their profession, future workplace, colleagues, and students. In this process, school-based mentors not only share their knowledge and experience with PSTs, but also support and empower them as they practice and build their teaching competencies and skills. In this sense, it is not the length of FE, but the quality of school-based and faculty-based mentors and their services having impact on the development of PSTs' professional knowledge and skills (Ronfeldt & Reininger, 2012).

Apart from FE and faculty and school-based mentors, several other factors have been found to be associated with PSTs' preparedness to teach. Teaching self-efficacy (Çelik, 2017; A. L. Brown et al., 2015, 2021; Darling-Hammond et al., 2002a), career motivation, commitment to teach (Çelik, 2017; Coladarci, 1992), teaching confidence (Meeks et al., 2016), instructional skills (İnceçay & Keşli Dollar, 2012), personality (Çelik, 2017) are some of them. It is important to note that almost all these factors are found to overlap and significantly be affected by the FE process (Alsaleh & Anthony, 2019; Karakaş & Erten, 2021) and effective mentoring (Ronfeldt et al., 2018, 2020) emphasizing the significant place of FE in PSTs' professional learning and development.

In theTurkish teacher education system, FE takes place in the senior year in two consecutive phases known as school experience (SE) and teaching practicum (TP). Despite limited number of studies on the positive correlation between FE and preparedness to teach in different teacher education programs such as pre- and primary school (Girgin & Akcanca, 2021; Stites et al., 2018), mathematics (Alsaleh & Anthony, 2019), science (Ramirez, 2020), to the researchers' best knowledge there is no study yet on senior pre-service English language teachers' sense of preparedness to teach and how it interacts with FE in the Turkish context. To address this research gap, this study set out to find answers to the following research questions:

1. How do pre-service English language teachers evaluate their preparedness to teach in relation to different phases of the field experience process?
2. What are the sources for pre-service English language teachers' perceived state of preparedness to teach?

Preparedness to Teach and its Sources

Dating back to the 1990s, preparedness to teach, also referred as readiness to teach, is a growing area of interest in pre-service teacher education. Given its positive correlation with perceptions of teaching ability, capacity, and high performance of teaching tasks (Faez, 2012; Housego, 1990), attaining preparedness to teach is a desired condition for PSTs.

As a multi-dimensional construct, preparedness to teach is hard to define. Rather than looking for a clear-cut definition for it, preparedness to teach is mostly explained in relation to other related constructs. For instance, Meeks et al. (2016) report that preparedness to teach is mainly determined by the degree of confidence that PSTs hold towards their ability to teach or not to teach. According to Abraham et al. (2021), it is the indicator of "… degree of readiness to engage with the profession and … greater sense of teaching self-efficacy" (p. 6-7). Along the same lines, several other studies report it as a predictor of teaching commitment (Coladarci, 1992), and teaching efficacy as its strongest indicator (Çelik, 2017; Darling-Hammond et al., 2002a). Another comprehensive study shows that it is related to PSTs' teaching competencies, teaching efficacy, teaching commitment, and conscientiousness as a personality trait (Çelik, 2017).

Traditionally, research relates preparedness to teach to teacher education programs (Stites et al., 2018). It is reported that PSTs feel more and better prepared depending on the quality of their faculty education. In this

regard, the faculty curriculum and teaching practice are among the basic factors of pre-service teachers' preparedness to teach (Tasdemir et al., 2020). Experienced faculty providing teacher educators with professional development is also regarded as another key for effective teacher education (Muzaffar et al., 2011). Competency-based teacher education, strong relevance between theory and practice, and teacher educators who are competent to provide PSTs with high-quality supervision during FE as in the case of Finland are among other factors to sustain and maintain high-quality teacher education at teacher education faculties (Darling-Hammond, 2017).

More recent research, on the other hand, links preparedness to teach to FE (Alsaleh & Anthony, 2019) and affirms it as the most influential factor (Rao & Wu, 2021) on condition that it is supervised by experienced and effective school-based mentors (Ronfeldt et al., 2018). For instance, Alsaleh and Anthony (2019) and Ronfeldt et al. (2020) indicate the importance of quality mentor feedback for PSTs' professional development. Rao and Wu (2021) also reveal that FE makes greater contribution to PST's preparedness to teach than courses in teacher education curriculum. However, they underline the role of mentoring as a crucial factor to determine the quality of FE and the extent that PSTs feel prepared to teach. Similarly, several other studies show that explicit evaluation received from mentors makes PSTs feel more confident about their competencies which in turn increases their self-efficacy, motivation, and teaching commitment (Castañeda-Trujillo & Aguirre-Hernández, 2018; Pandee et al., 2020; Rots et al., 2007). Moreover, school-based mentoring has also been found to impact PSTs' career motivations and plans (Karakaş & Erten, 2021; Rao & Wu, 2021; Ronfeldt & Reininger, 2012).

Teaching efficacy another construct which is known to be closely connected to PSTs' preparedness to teach (Darling-Hammond et al., 2002a) is developed as PSTs develop a sense of success based on the feedback and suggestions provided by mentors (Knoblauch & Hoy, 2008). In their study, Karakaş and Erten (2021) found a positive link between receiving feedback from school-based mentors before and after teaching practices and PSTs' perceived teaching efficacy, commitment, and overall performance in their FE. Similarly, faculty-based mentors' expertise, guidance, and experiences are reported to be a source for PSTs' professional learning (Castañeda-Trujillo & Aguirre-Hernández, 2018). In this vein, the success of FE is also regarded to depend on multiple roles i.e., advising, supervising, facilitating played by faculty-based mentors to "help … [PSTs] to reflect on their own practice, to know what they know, and to identify what they need to learn" (Freidus, 2002, p. 75).

As this brief literature review indicates, FE, as a complex learning environment with its significant actors, is a huge determiner for PSTs' preparation to the profession (Becker et al., 2019) and needs to be investigated in depth to reveal the underlying factors that interact with PSTs' professional competencies, perceptions, and emotions. Against this backdrop, this study sets out to explore and uncover these variables.

METHOD

Research design

As this study aims to explore PSTs' preparedness to teach and the potential changes in their perceptions in relation to the *SE* and *TP* phases of FE, a longitudinal qualitative descriptive research design was adopted. One-on-one, semi-structured interview method, as rich source of data (Trumbull, 2005), was selected to capture and examine the whole process from the lens of PSTs. To this end, two sets of interviews were conducted: one after the SE and one after the TP phases. In both interviews, the PSTs were firstly asked to reflect on their current state of preparedness to teach and the factors shaping their perceptions as they finished these phases. Secondly, they were asked to look back and report how prepared they felt at the beginning of the phases and what underlying factors were there to make them feel that way (see Figure 1 for the research design). Thus, both cross-sectional and retrospective data were collected.

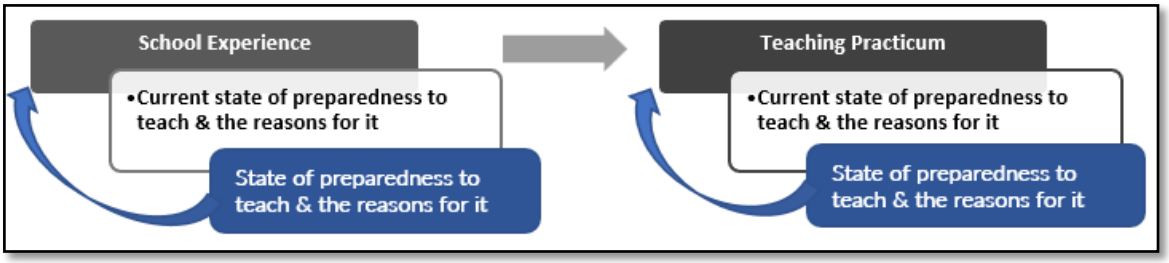

Figure 1. *Research design*

Setting and Participants

The study was conducted at the Education Faculty of a public state university in a northwest province in Turkey. When the current study, which is a part of a larger study, was conducted, the PSTs were performing their FE in two courses, *SE and TP*, running consecutively in the last year of their faculty education. As the initial phase of the FE, the SE aims to familiarize the PSTs with the school context, students, and the professional community which they will become a part of soon besides giving them room for teaching practice. The TP aims to continuously engage the PSTS with both teaching-related tasks to improve and deepen their teaching competencies and the professional school community to assure and strengthen their preparation for the profession.

The PSTs were part of a larger study which is out of the scope of the current study (Çelik, 2017). Of the 145 PSTs participating in the initial survey, 18 PSTs (eight males and 10 females) volunteered for the first round of interviews that took place towards the end of the SE and 12 other PSTs (eight males and four females) for the second ones that took place towards the end of the TP. They were assigned to 10 different practicum schools for their FE. All were Turkish citizens. Their ages ranged between 21 and 33 with an average of 24. Most reported to have previous teaching experience mainly through voluntary teaching or one-on-one private tutorials.

Instrumentation

The data were gathered through two interview protocols designed for the two interviews. To ensure their content validity, the researchers conducted literature review, devised the initial drafts of the interview protocols for both phases, and discussed their content in relation to the research purposes (Zohrabi, 2013). Having several rounds of negotiations and online debriefing sessions (Shenton, 2004), they revised and refined the questions for both effectiveness and validity. As a result, the final versions of the interview protocols were created (Appendix).

Research ethics

Ethical guidelines were carefully considered before the data collection. First, research permission was elicited from the faculty. Then, an informed consent form was prepared to inform the PSTs about the research design, its purpose, and data collection procedures. Lastly, the e-mail addresses of the volunteering ones were requested for further contact.

Data collection and analysis procedures

The volunteered participants (N=18) were e-mailed to make appointments towards the end of the fall term as they were about to complete the SE phase, and the first round of interviews was done accordingly. The PSTs continued with the TP in the spring term and were fully involved in the FE and its teaching tasks and gaining more experience. Both interviews were guided by the interview protocols and followed the same set of questions in the same order. They were conducted in Turkish to prevent data loss and make the participants feel more comfortable. The responses were audio-recorded and supported by field notes. Open-ended discussions were encouraged letting the interviewees say more rather than accepting their first answers as the final and complete responses to avoid the likely threats to validity such as halo-effect (Mackey & Gass, 2005). The SE interviews generated almost a 7-hour data set, and the TP ones a 6-hour data set.

The initial step for data analysis was to organize the data resulting in voluminous notes. Then, each interview was transcribed. Considering the suggestion of Creswell (2009), the transcriptions were read several times to get a complete sense of them and then analyzed through the constant comparison method in which concepts are called as basic units of analysis, while categories, which are generated through the same analytic process of making comparisons to highlight similarities and differences, are explained as “higher in level and more abstract than the concepts they represent” (Corbin & Strauss, 1990, p.7). Inductive, open coding were used for data analysis and the steps by Corbin and Strauss (1990) were followed;

- Identification of concepts in the raw data
- Open coding to develop concepts from the first round of data reduction
- Searching for evidence or disevidence for further recoding within the interview itself and the interviews in the group
- Grouping concepts pertaining to the same phenomenon to form categories
- Identification of categories to allow possible core categories to emerge
- Integrating categories (if necessary)

Thus, through comparing both within a single interview and between other interviews, the data were refined and analyzed. Making comparisons assisted the researchers to guard against bias and achieve greater precision and consistency as the concepts were challenged with fresh data. All the data likely to identify the participants were removed from the transcriptions and codes such as PST1, PST2 were used to preserve their anonymity while reporting the findings.

FINDINGS

Research Question1: Pre-Service English Language Teachers' Preparedness to Teach in Relation to Different Phases of the Field Experience Process

In both interviews, the participants were asked to report their current perceived state of preparedness to teach and how they felt at the beginning of that particular phase. The distribution of the PSTs according to their state of preparedness to teach is given in Figure 2.

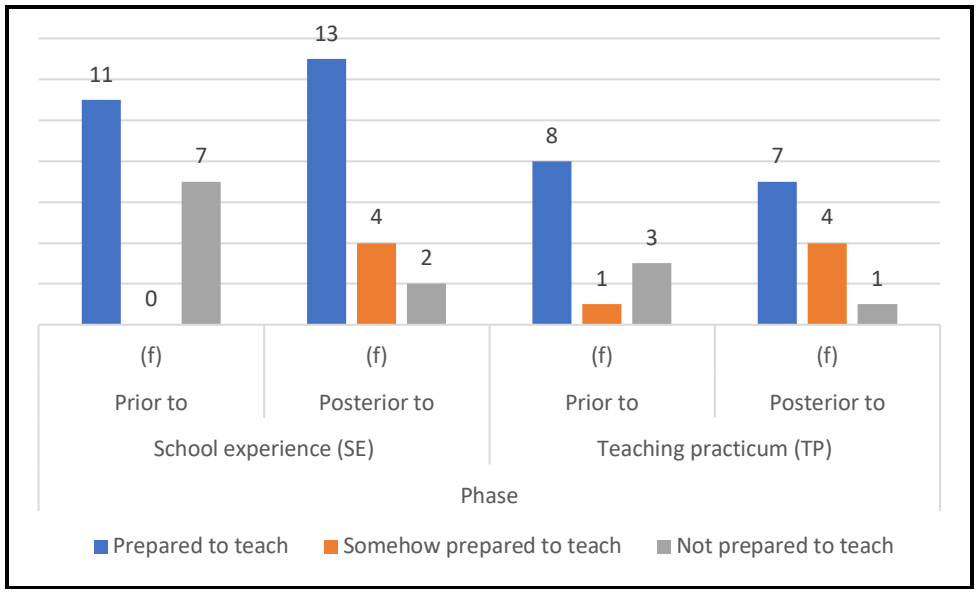

Figure 2. *PSTs' state of preparedness to teach throughout the FE process*

At the beginning of the SE, the PSTs reported to be either prepared or not prepared to teach and those who felt prepared were more than who did not (n=11, n= 7 respectively). At the end, more PSTs reported to feel prepared, and the number of the PSTs who stated to feel unprepared to teach decreased. Some PSTs were observed to feel somehow prepared (n=4). As for the TP, while most PSTs (n=8) stated to feel prepared to teach at the beginning, a slight decrease is observed at the end of the process (n=7). The number of the PSTs who reported to feel somehow unprepared to teach increased (n=4).

Research Question 2: Sources for Pre-Service English Teachers' Perceived State of Preparedness to Teach

As the PSTs' preparedness to teach was examined in a longitudinal fashion, the findings related to their explanations about the sources for their perceived state of preparedness to teach before and after the SE and TP phases of the FE process are presented separately below.

Initially, the PSTs were asked to look back at the beginning of the SE, consider how they felt there in regard to their preparedness to teach, and explain the reasons for their state of preparedness to teach prior to the SE. The data analysis yielded eight sources which were then grouped under five categories (see Table 1).

Table 1. Sources for pre-service English language teachers' perceived state of preparedness to teach prior to SE

State of preparedness to teach	Categories	Sources	PST Codes
Prepared to teach	Higher teaching efficacy perceptions	*Prior teaching experience (teaching friends, family members, voluntary teaching etc.)	PST3, PST4, PST6, PST7, PST8, PST9, PST17
	Intrinsic and altruistic career motivation	*Motivation and enthusiasm to teach	PST1, PST6, PST9, PST17, PST18
	Faculty education	*Teaching knowledge and skills *Knowledge of resources for teaching *Self-confidence	PST5, PST7, PST15
Not prepared to teach	Untested teaching competencies/efficacy	*Lack of confidence in teaching (due to lack of teaching practice) *Teaching anxiety	PST2, PST10, PST11, PST12, PST14, PST16
	Lack of teaching commitment	*Insufficient engagement in teaching	PST2, PST13

For those PSTs who reported to be prepared to teach (*n*=7), the primary source was *higher teaching efficacy perceptions* developed through teaching family members, friends, one-on-one private tutorials, or voluntary teaching. Besides, *intrinsic or altruistic motivation* enabled some (*n*=5) to have *enthusiasm to teach*. For PST9, *"Teaching was a childhood dream."* Similarly, PST17 *has always wanted to become a teacher*. *Faculty education* (*n*=3) emerged as a source of their teaching knowledge and skills, knowledge of resources for language teaching, and teaching confidence.

In line with the findings above, majority of those who were not prepared to teach (*n*=6) attributed this perception to *untested teaching competencies/efficacy,* while others *(n=2)* did to *lack of teaching commitment* as they were uncertain if they would teach upon graduating. For instance, PST2 who acknowledged that they learnt a lot at faculty had concerns regarding how to teach and considered that they would teach like their teachers. Similarly, PST16 felt anxious in the beginning due to inadequate teaching practice despite strong faculty education.

The PSTs were also asked to consider how they felt regarding their preparedness to teach at the end of the SE and explain the sources for it. The analysis of the data yielded 19 sources grouped under 10 categories. Table 2 provides the details.

Table 2. Sources for pre-service English language teachers' perceived state of preparedness to teach posterior to SE

State of preparedness to teach	Categories	Sources	PST Codes
Prepared to teach	Sense of fulfilled professional & developmental needs	*Getting guidance, advice, help, feedback, and support from the mentor *Mentors' skills to communicate, empathize, role-model, and build rapport with PST	PST3, PST6, PST7, PST10, PST14, PST16, PST17
	Higher teaching efficacy perceptions	*Prior teaching experience (teaching friends, family members, voluntary teaching etc.)	PST4, PST6, PST8
	Increased awareness regarding teaching	*Observing the mentor teacher and peers in action *Evaluating and reflecting	PST9, PST16, PST18
	Emotional attachment to teaching	*Adequate contextual mentoring *Positive workplace culture	PST2, PST13

		*Situational features of the mentoring site *Communicating with students and future colleagues	
Not prepared to teach	Decreased sense of fulfilled professional & developmental needs	*No guidance, advice, support, supervision, negotiation, feedback *Inadequate developmental mentoring *Lack of consolidation of teaching knowledge and skills	PST1, PST5
	Emotional setback in career motivation	*Mismatch between expectation from an "idealized" teacher and experiences *Unprofessional behavior(s) of school-based mentors	PST1
Somehow prepared to teach	Lower teaching efficacy perceptions	*Reflection on quality teaching *Increased awareness on teaching knowledge and skills	PST12, PST15
	Sustained career motivation	*Faculty education *Personality	PST11
	Increased sense of engagement in teaching	*Lack of knowledge upon teaching roles and responsibilities	PST13
	Increased teacher knowledge	*Contributory teaching practice	PST13

Majority (*n*=7) of the PSTs feeling prepared to teach thought their *professional and developmental needs were fulfilled* as they received adequate feedback, supervision, guidance, and support from their school-based mentors who were good role-models both professionally and personally. For some (PST3, PST10), the school-based mentors were helpful, supportive, caring, collaborative, tolerant, and approachable as they established good communication which made the SE experience positive. For some others (*n*=3), similar to what they stated regarding their state of preparedness to teach prior to the SE, *prior teaching experience* was a source as it increased their *teaching efficacy perceptions*. Although the SE was to give the PSTs the opportunity to carry out observations at practicum schools to observe the school-based mentors' teaching practices, the PSTs were offered the chance to practice teaching in this phase. Therefore, they spent a lot of time observing their mentors and peers in action. Particularly when they observed their peers, they made notes to give feedback to them. In this regard, having the chance to evaluate their peers' teaching practices and drawing implications for their own teaching increased their preparedness to teach. Besides, for some (*n*=3), *increased awareness regarding teaching* was another source. Two PSTs attached their preparedness to teach to the *emotional attachment to teaching* due to positive workplace culture in the practicum school providing good communication with future colleagues and adequate mentoring. For instance, being offered to use the teachers' room at the school helped the PSTs observe how teachers communicated in a typical day (PST2). Thus, workplace culture and friendly mentors appeared to have a critical role on PSTs' preparedness to teach.

Those who were *not prepared to teach (n=2)* thought their *sense of fulfilled professional and developmental needs decreased* due to lack of guidance and support from their school-based mentors. They also stated that observing *...mentors who display unprofessional behavior such as getting angry with students or yelling at them ... (PSTS1)* created an emotional setback.

Lower teaching efficacy perceptions (*n*=2), *sustained career motivation* (*n*=1), *increased sense of engagement in teaching* (*n*=1), and *increased teacher knowledge* (*n*=1) were the sources for those PSTs feeling *somehow prepared* to teach (*n*=4). Having developed knowledge about and awareness of quality teaching and teaching knowledge and skills, some (PST12, PST15) perceived *less efficacious*. For instance, upon observing a mentor who was not putting a lot of effort into her teaching, PST12 started questioning her understanding of quality teaching, teaching skills, and faculty education. She stated:

I saw how not to be a teacher. The mentor seemed to be traditional and did not even seem to be prepared for the classes. She used no extra materials, only the coursebook. Now I ask; Theory-practice gap? Will I be able to use what I've learned at the faculty?

On the other hand, some (PST11, PST13) perceived faculty education, their personality, and contributions of their student teaching practices in SE as sources strengthening their *career motivation* and *teacher knowledge* and thus making them feel somehow prepared to teach.

After the SE phase, the PSTs continued with the TP. Having completed it, they were asked to evaluate their preparedness to teach. Similar to the SE, the PSTs were firstly asked to reflect on their state of preparedness to teach prior to the TP phase and explain the sources of it. The findings are as follows (see Table 3).

Table 3. Sources for pre-service English language teachers' perceived state of preparedness to teach prior to TP

State of preparedness to teach prior to TP	Categories	Sources	PST Codes
Prepared to teach	Teaching commitment	*Career motivation *Satisfaction *Enthusiasm *Regular attendance *Getting prepared *Devoting time *Passion for teaching	PST5, PST6, PST10, PST12
	Higher perceptions of teaching efficacy	*Prior teaching experience	PST7, PST8
	Personality	*Personal characteristics (responsible, hardworking, caring etc.)	PST2
	Faculty education	*Teaching competencies *Feeling efficacious	PST3
Not prepared to teach	Lack of confidence in teaching	*Teaching anxiety *Inadequate teaching knowledge and skills *Un/underdeveloped teaching competencies *Lack of teaching practice	PST1, PST4, PST11
Somehow prepared to teach	Lower perceptions of teaching efficacy	*Un/under-developed teaching competencies *Lack of teaching practice	PST9

As already indicated, the PSTs reported different perceptions regarding their state of preparedness prior to the TP. Most were *prepared* (*n*=8), some were *not prepared* (*n*=3), and one was *somehow prepared to teach.* For most PSTs feeling prepared to teach (*n*=4), *teaching commitment* was the predominant reason within which sources like career motivation, enthusiasm, and passion for teaching existed. Some thought "*becoming a teacher was the right decision"* (PST10) due to sustained teaching commitment. Those having prior teaching experience (*n*=2) reported *higher teaching efficacy perceptions* as the source for their preparedness to teach. Besides, for PST2 *personality characteristics* such as being responsible and caring were the sources. However, PST3 who thought teaching was an easy job drew on *faculty education* which strengthened his teaching efficacy perceptions.

The PSTs who were *not prepared to teach* (*n*=3) had *lack of confidence in teaching*. For instance, PST1 stated that *"Prior to TP, I was easily getting anxious when I was to teach, and I wondered if I could teach at all."* The analysis revealed that teaching anxiety, inadequate or underdeveloped knowledge and skills seemed to be closely connected to lack of teaching practice causing lack of confidence in teaching. Similarly, classroom management skill such as not being able to keep the class silent or not being able to give simple classroom instructions lowered PST11's teaching confidence making her feel not prepared to teach.

Besides, PST9 was *somehow prepared to teach* due to her lower teaching efficacy perceptions. She said "*Yes, I was prepared, but I wondered what I was going to do when I would be with real students in a real class. I calmed down in time."* As seen, her concerns stem from considering if she would be able to teach in a real classroom which could suggest that un- or underdeveloped teaching competencies could have triggered such a thought.

As the whole FE was over, the PSTs were also asked to evaluate how they felt regarding their state of preparedness to teach at the end of the TP and what sources made them prepared or not prepared to teach. The analysis revealed 16 sources under five categories (see Table 4).

Table 4. Sources for pre-service English language teachers' perceived state of preparedness to teach posterior to TP

State of Preparedness to teach after TP	Categories	Sources	Participant Codes
Prepared to teach	Increased sense of fulfilled professional & developmental needs	*Collaborative, supportive school-based mentors *Adequate developmental mentoring, i.e., guidance and feedback *Frequent teaching practice *Mentors' skills in role modelling	PST7, PST8, PST10, PST12
	Increased confidence in professional self	*Tested teaching competencies *Feeling efficacious or somehow efficacious	PST1, PST9
	Decreased sense of teaching anxiety	*Emotional control; less anxiety and hesitation	PST1, PST4
Not prepared to teach	Lack of teaching commitment	*Inadequate teaching practice *Un or underdeveloped teaching competencies (such as time management) *Inadequate emotional attachment to teaching	PST6
Somehow prepared to teach	Sense of inadequate preparedness (caused by mentors' lack of know-how to communicate their teaching knowledge and experiences to PSTs)	*Inadequate engagement in professional learning *Limited interaction/dialogue with students *Limited supervision, guidance, feedback *Limited teaching practice *Limited satisfaction of teaching efficacy *Mismatch between faculty training and teaching in schools	PST2, PST3, PST5, PST11

Firstly, at the end of the TP, most PSTs (*n*=7) reported to feel prepared to teach, while some (*n*=4) somehow prepared to teach, and only one not prepared to teach. PST7, PST8, PST10, and PST12 felt prepared to teach as they perceived an increase in their *fulfilled professional and developmental needs* since they worked with collaborative and supportive school-based mentors and received adequate mentoring. For PST10:

> *The mentor was very collaborative, humanistic, and easy to communicate. She continuously gave feedback, helped with lesson planning, and provided us with teaching materials. She also had good communication with the students. She taught in English; almost used no Turkish. Therefore, my TP experience made a difference.*

Moreover, some (PSTs 1, 4, 9) tested their teaching competencies through frequent teaching practices and learned to control their emotions which increased their teaching confidence and decreased their teaching anxiety. This is significant to highlight the role of testing teaching competencies both on cognitive and emotional level.

On the other hand, mentors' lack of know-how to communicate their teaching knowledge and experiences was stated as the main source for feeling somehow prepared to teach (*n*=4), which created a *sense of inadequate preparedness* for these PSTs. This was the opposite of the feeling experienced by those who felt prepared to teach

as their professional and developmental needs were fulfilled through adequate mentoring provided by collaborative and supportive mentors. PST3 stated:

> *I only taught once, saw what was missing, learnt how to approach students, and became more aware of their individual differences. Although I had previous teaching experience, I didn't feel completely satisfied. I think there is still a lot to learn. There needs to be more time for practice. The mentors did not allow us to practice, and I experienced the shock 'Weren't we going to teach?' Mentors need to provide more effective supervision.*

As it was the end of the entire FE process, there was only one (PST6) who felt not prepared to teach because of *lack of teaching commitment*. Thus, being equipped with teaching knowledge and skills does not guarantee preparedness to teach. PSTs should also possess teaching commitment to be emotionally attached to the profession and to stay in it.

Discussion & Conclusion

Following a longitudinal qualitative research design, this study explored senior pre-service English teachers' state of preparedness to teach and the perceived sources behind it covering the SE and TP phases during their FE. To this aim, two in-depth interviews were conducted with a group of volunteering participants at the end of these phases. Their current state of preparedness to teach as well as retrospective data on how they felt at the beginning of each phase along with the reasons were elicited.

To start with, the findings revealed that most English PSTs felt prepared to teach as they started both SE and TP. This result is congruent with the studies which also found relatively high preparedness levels for English PSTs in Turkish context. Since at the time of the data collection phase of this study there was a uniform teacher education program implemented in all the departments of education faculties in Turkey, this result could be interpreted as a sign of the effectiveness of teacher education programs (Selçuk & Genç Yöntem, 2019). Despite the studies with conflicting results (G. Öztürk & Aydın, 2019; Uzun, 2016), there is ample evidence in the literature that Turkish English language teacher education programs indeed provide quality education to their students (Varol, 2018). Yet, the results of the current study also showed that some students felt unprepared or somehow prepared to teach at the beginning of each phase. This finding, on the other hand, clearly calls for a more in-depth analysis of English language teacher education programs. Lastly, the current study found that the number of the ones feeling unprepared to teach decreased at the end of the phases underpinning the importance of the entire FE process as a factor impacting the perceived state of preparedness to teach, which is already well documented in the existing literature (Karakaş & Erten, 2021; Selçuk & Genç Yöntem, 2019).

A significant contribution of this study to the related literature is its endeavor to shed light on the perceived reasons underlying the senior English language PSTs' self-reported state of preparedness to teach. Accordingly, they were asked to explain the sources behind their preparedness to teach with reference to different time points in SE and TP. The following part discusses the findings in relation to these time points.

As for the sources affecting their state of preparedness to teach at the beginning of the SE, the findings revealed three major sources as positively contributing to their sense of preparedness to teach: *higher teaching efficacy perceptions, intrinsic and altruistic career motivation, and faculty education*. Higher teaching efficacy perceptions are related to pedagogical knowledge, skills, and competencies gained through faculty education, which is a frequently cited reason for high level of perceived preparedness to teach in the related literature (Darling-Hammond et al., 2002a; Housego, 1990). Recent studies in the English language teacher education context in Turkey also show that PSTs perceive faculty education and pedagogical skills as empowering them to be prepared to teach (Kılıc, 2020) and conceive faculty education as a time where they relate theory with practice (Selçuk & Genç Yöntem, 2019). Without a doubt, faculty education is the stage where initial professional knowledge and skills are acquired (Darling-Hammond et al., 2002a, 2002b). Thus, quality of education received in pre-service teacher education is a prerequisite for educating effective teachers.

Career motivation emerged as another positive factor impacting preparedness to teach in this study. Different studies also documented similar results (Tanjung et al., 2020; Yüksel & Kavanoz, 2015). For instance, a very recent study reports that PSTs "displayed high levels of motivation for studying and teaching languages which they felt gave them a sense of purpose and meaning" (Mairitsch et al., 2021, p.5). Similarly, the PSTs in the current study, since some were teaching voluntarily at the pre-school of the University, reported helping individuals and society as a driving force behind their career motivation which is, by extension, linked to their state of preparedness. This result emphasizes the importance of integrating courses such as Community Service

Practices in all teacher education programs, where PSTs experience voluntary work in their subject areas and appreciate their profession's contribution to individuals and society.

On the other hand, *untested teaching competencies* and *lack of teaching commitment* were reported as the two reasons for perceived unpreparedness to teach before the SE, which are the exact opposite of those given for feeling prepared to teach. While prior teaching experiences with family members or friends were given as reasons for higher teaching efficacy perceptions, it was found that lack of similar experiences debilitated PSTs' sense of preparedness to teach. In a study on belief changes before and after TP, Qiu et al. (2021) also report that PSTs' teaching competencies increase significantly after they test them. This result points out the critical need to provide PSTs with teaching experiences as early as possible in their teacher education. In Turkey, FE is placed in the last year of faculty education which may be considered late given the fact that most PSTs in the current study reported not to have any prior teaching experience. Therefore, it would not be wrong to suggest that integrating different school experiences into different stages of faculty education would help PSTs build different teaching competencies gradually developing their preparedness to teach.

Closely linked to lack of teaching experience, the next reason, *lack of teaching commitment* was also found to be related to the PSTs' state of unpreparedness to teach. A recent study in a very similar context investigating how emotions are experienced by pre-service English teachers during their FE and how emotions affected their instructional skills showed that the PSTs' perceptions regarding their undeveloped teaching skills such as teaching and testing diverse students at different levels were linked to their lack of teaching commitment (Méndez López, 2020). This could mean that PSTs' lack of teaching commitment could result from not having taught yet and not having tested their teaching competencies.

10 underlying sources emerged for the PSTs' perceived preparedness to teach at the end of SE. *Sense of fulfilled professional and developmental needs* was the major positive one which was reported to result from guidance, feedback, and support the PSTs received from their school-based mentors. Building rapport and being good role-models were mentioned as facilitative aspects of school-based mentoring. Parallel to this finding, the PSTs indicated inadequate mentoring resulting from almost no guidance and supervision as a reason for their unpreparedness to teach. This finding once again puts emphasis on the connection between quality-mentoring and preparedness to teach during FE. The literature is replete with studies revealing the importance of high-quality mentor feedback, their professional knowledge, language skills and teaching competencies as pivotal in preparing qualified PSTs (Kourieos, 2019; Orsdemir & Yıldırım, 2020; Tüfekçi Can & Baştürk, 2018; Yaylı, 2018). In addition, in this study, *emotional setback* was found to be a mentor-related reason underlying sense of unpreparedness to teach. Several studies also maintain that PSTs' wellbeing is significantly positively related to quality mentoring (Kourieous, 2019; Mairitsch et al., 2021; Mukeredzi & Manwa, 2019). As this study and supporting findings from the related literature clearly show, quality mentoring needs to address not only PSTs' professional but also emotional developmental needs (Ambrosetti, 2012, 2014; Grossman, 2010; Scott et al., 2014) which have a direct impact on their state of preparedness to teach (Alsaleh & Anthony, 2019).

At this stage, i*ncreased awareness regarding teaching* was reported as another source for preparedness to teach. This aligns with previous research with pre-service English language teachers in the Turkish context reporting that after FE, the PSTs developed increased understanding regarding schools and its etiquettes (Hos et al., 2019) and their own and others' teaching which help them learn to make informed decisions (Gebhard, 2009). Besides, during FE, PSTs shadow their mentors and practice teaching skills, design and implement curricular activities, and establish relationships with students (A. L. Brown et al., 2015). Thus, FE as a central process for PSTs' professional and social growth (Selvi, 2012) can be concluded to have a key function for the acquisition and development of PSTs' teaching awareness, preparedness to teach, and their identity building.

Teaching commitment, *high perception of teaching efficacy*, *faculty education* were found to be persistent sources to facilitate the PSTs' preparedness to teach at the beginning of the TP phase. This finding is particularly significant as the PSTs in the TP phase were not the ones responding to the SE phase interviews. Therefore, these sources are pervasive for both the PSTs in SE and TP phase. This supports previous research reporting increase in teaching efficacy perceptions and willingness to teach during TP (Selçuk & Genç Yöntem, 2019). *Personality* which emerged as a new source facilitating the PSTs' preparedness to teach during FE deserves attention. Despite lack of research, this is in line with another study reporting that PSTs developed personality traits which they needed such as being caring, tolerant, friendly, and confident during TP (Buendía-Arias et al., 2020). On the other hand, similar to the findings of the SE phase, *lack of confidence in teaching* and *lower teaching efficacy perceptions* were also found to be two debilitative sources making the PSTs either unprepared or somehow prepared to teach

at the beginning of TP. In their study on English language PSTs in Turkey, Han and Takkaç Tulgar (2019) observed that the PSTs felt anxious due to gaps in their teaching knowledge and skills during the FE concluding that more teaching opportunities needed to prepare students for in-call teaching. As a final remark, it should be noted that different participants responded to the SE and TP interviews in this study. Thus, the similarities between the perceived sources for unpreparedness to teach across SE and the beginning of TP need to be closely analyzed since they seem to indicate large, pervasive, systemic problems regarding teacher education.

As for the PSTs' preparedness to teach after TP, which also marked the end of the entire FE process, *increased sense of fulfilled professional and developmental needs* was the source for the majority of those who felt prepared to teach. They mainly attached the increase in their state of preparedness to teach to their school-based mentors' collaboration and support providing them with adequate and frequent teaching practice rather than their faculty-based mentors. In their study on the effect of mentor-mentee meetings on PSTs' knowledge gains and improvements in TP, Mukeredzi and Manwa (2019) report that having good relationships and communication with mentors via frequent and formal meetings enabled PSTs to broaden their knowledge on various levels regarding knowledge about general pedagogy, content pedagogy, curriculum, learners, and educational contexts. In the same study, some students who were ineffectively mentored were reported to have limited gains from their TP experience. Therefore, both the current study and the literature underscore the critical role played by mentoring and mentors' skills for effective professional development.

Similarly, *decreased sense of teaching anxiety* emerged as another source of their preparedness to teach. This overlaps with some other studies reporting that PSTs gained experience in classroom management (Selçuk & Genç Yöntem, 2019), developed their teaching skills (Méndez López, 2020), and experienced lower teaching anxiety as they gained more confidence, got used to being assessed by supervisors, and became more competent in resolving classroom management-related problems (Akınsola, 2014), and even found their own strategies to cope with anxiety-provoking factors (Han & Takkaç Tulgar, 2019). Similarly, the PSTs in the current study reported that their teaching anxiety decreased, and confidence increased due to observing mentors' teaching, practicing teaching, and reflecting on it. Research in different areas of teacher education report that pre-service mathematics teachers' teaching anxiety reduced as they observed mentor teachers, practiced teaching, and reflected on it (see A. Brown et al., 2012). Ultimately, the PSTs' anxiety decreased since they continued testing their teaching competencies which also strengthened their confidence in their professional selves. Additionally, the strong reference that the PSTs in the current study made to their school-based mentors for fulfilling the PSTs' professional and developmental needs through the quality mentoring they provided also has a role on how the PSTs' teaching anxiety decreased.

On the other hand, *mentors' lack of know-how to share their experiences and expertise with the PSTs* was the source for others who felt somehow prepared to teach. The PSTs generally attached their inadequate preparedness to teach to such issues as limited communication with students, inadequate teaching practice, limited supervision, resulting in inadequate engagement in professional and developmental learning. Without a doubt, mentors are expected to establish and maintain effective and continuous communication with PSTs to meet their developmental needs. However, research still reveals mentor-related problems such as poor communication (Yaylı, 2018) or inadequate support and feedback despite variations across mentors (Vasquez Carrosa et al., 2019). Hence, mentor quality appears to be one of the determining factors for adequate PST preparation.

Conclusion and Implications

In light of the findings and discussion, this study makes the following conclusions:

- Preparedness to teach is not a linear phenomenon, but rather continuous, fluctuating, complex, and multifaceted as observed in the changing perceived states of the PSTs participating in the current study across different time points during the FE.
- Preparedness to teach is determined by various factors i.e., internal ones such as personality, teaching motivation, confidence, and commitment or external ones such as faculty education, teaching knowledge and skills, and mentoring. In this regard, the availability of various sources encourages the realization and development of preparedness to teach, while lack of any of them causes fluctuation in PSTs' states of preparedness to teach.
- Preparedness to teach includes several actors and is co-constructed by PSTs and other significant stakeholders, in particular their mentors who are responsible for their school-based teacher education.

With these in mind, there are some implications to be drawn. First and foremost, the strong emphasis put on school-based mentoring highlights the role played by mentors in practicum schools. In this regard, the study shows that teacher education and education of well-prepared teachers is not a one-sided task within the sole responsibility of faculty; rather it is a collaborative task which necessitates quality school-based teacher education in practicum schools during PSTs' FE. Therefore, selection and training of mentors stands as a cornerstone in PST education as any teacher who is successful as a teacher cannot be assumed to be a successful mentor (Chien, 2014). This calls for action for Education Faculties and the Ministry of National Education to select and train mentors who have the willingness to supervise. Besides, the current study also showed the importance of mentors' skills in communicating their knowledge and experience to PSTs. In this regard, mentors need training not only in terms of the acquisition and development of their mentoring roles and responsibilities, but also for the improvement and realization of interpersonal, communication, and cooperation skills. Only then can mentors and school-based mentoring become effective as needed.

Additionally, the study also showed the critical and undeniable role played by faculty education as it is seen to relate to teaching efficacy as a prerequisite for preparedness to teach. This suggests that faculty education and teacher education curricula act as the backbone in teacher education. In this regard, high-quality faculty education is a must. This means that courses must be tutored by faculty teachers who are experts in the related subject matter, who also have the commitment and awareness regarding the task that they perform. As the study showed the PSTs did not put primary emphasis on their faculty-based mentors as sources to their preparedness to teach. This might make sense as faculty-based mentors are known to spend limited time in practicum schools and supervise fewer teaching tasks in practicum classrooms. However, with the recent changes made in field experience guidelines in teacher education system in Turkey (MEB [Ministry of National Education], 2021), they are expected to spend time to observe each PST at least twice in practicum schools. In this regard, further studies could examine what makes PSTs to attach a lesser emphasis on the mentoring they receive from their faculty-based mentors.

Moreover, the study shows the need for more and continuous teaching practice during PST education since the PSTs attached their unpreparedness to teach to lack of teaching practice and untested teaching competencies, which also caused teaching anxiety. Without a doubt, as the amount and frequency of teaching practice increases, teaching anxiety decreases. Thus, teacher education programs could lengthen the duration of FE or could increase the time that PSTs need to spend in practicum schools. This also requires cooperation between policy makers from Education Faculties, Higher Education Council, and the Ministry of National Education in Turkey.

Statements of publication ethics

This study is a part of the first author's Doctoral Dissertation completed in 2017.

Researchers' contribution rate

Both researchers worked on every stage of the study. The first author carried out the interviews.

Conflict of interest

We have no conflict of interest to report.

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Appendix

Interview Protocol (School Experience Phase)

1. Over the course of school experience, have you had any information about students?

Yes ( ) No ( )

If Yes, please specify

Follow-up;

Among what you have learned about students, are there any thoughts which you regard as positive?

Yes ( ) No ( )

If Yes, please specify

Among what you have learned about students, are there any thoughts which you regard as negative?

Yes ( ) No ( )

If Yes, please specify

2. Over the course of school experience, have you had any information about your (future) colleagues?

Yes ( ) No ( )

If Yes, please specify

Follow-up;

Among what you have learned about your future colleagues, are there any thoughts which you regard as positive?

Yes ( ) No ( )

If Yes, please specify

Among what you have learned about your future colleagues, are there any thoughts which you regard as negative?

Yes ( ) No ( )

If Yes, please specify

3. Over the course of school experience, have you had any information about your (future) workplace?

Yes ( ) No ( )

If Yes, please specify

Follow-up;

Among what you have learned about your future workplace, are there any thoughts which you regard as positive?

Yes ( ) No ( )

If Yes, please specify

Among what you have learned about your future workplace, are there any thoughts which you regard as negative?

Yes ( ) No ( )

If Yes, please specify

4. When you relate your thoughts regarding all these issues to your preparedness to teach, (students, colleagues, workplace), do you think that school experience process made any difference?

Yes ( ) No ( )

If Yes; please specify the extent for the following issues

To;	Little	Partly	Quite
Students			
Teaching			
Workplace			

Follow up;

Can you open your evaluations? What makes you feel so?

5. If you make an evaluation regarding the beginning of school experience process, what did you feel at the very beginning? What do you think about your preparedness to teach at that time and now?

Follow-up;

If you felt prepared to teach, what do you think made you feel so? Please explain.

If you did not feel adequately prepared to teach or even if you felt completely unprepared to teach, what do you think made you feel so? Please explain.

6. Would you like to add anything besides what you have mentioned so far? If Yes, please specify.

Interview Protocol (Teaching Practicum Phase)

1. You are about to complete the teaching practicum phase. Through this process, you have had the opportunity to get closer to the school system which you will become a member of shortly. Considering what you have learned about the students in the process, has anything changed in your initial thoughts of students? If Yes, what?
2. With the teaching practicum phase, you have had the opportunity to get closer to the colleagues teaching in the school system which you will also become a member of shortly. Has anything changed in your initial thoughts about your future colleagues? If Yes, what?
3. With the teaching practicum phase, you have also had the chance to learn more about the workplace which you will shortly be a part of. Has anything, either positively or negatively, changed in your initial thoughts about the workplace? If Yes, what?
4. When you relate your insights and evaluations regarding all these issues to your preparedness to teach, do you think that school experience and teaching practicum processes had any impact on your preparedness to teach?

   Yes ( ) No ( )

   If Yes; please specify the extent for the following issues;

To;	Little	Partly	Quite
Students			
Teaching			
Workplace			

   Follow up;

   Can you open your evaluations? What makes you feel so?
5. Considering the school experience and teaching practicum processes, do you think if they had any influence on your preparedness to teach?

   Follow-up

   What are the issues that the processes contributed on your preparedness to teach? How do you know that and why?

   What are the issues that you could not gain that much development? If there are any, what could be done to encourage development?
6. Considering what you have learned about students, colleagues, and workplace, are you planning to teach?
7. Besides the issues mentioned above, is there anything else that you would like to add regarding the link between school experience and teaching practicum processes and your preparedness to teach? If Yes, please specify.

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"Whenever I Watched Myself, I Realised Something Different to Improve": Teacher Candidates' Reflections on the Video-Based, Micro-Analytic Practicum

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Abstract

The purpose of the study is to explore a group of EFL teacher candidates' opinions on the reflective, video-based, and micro-analytic practicum with a focus on classroom interaction. A practicum course was designed to improve pre-service teachers' classroom interactional competence and help pre-service teachers develop teacher reflection. For this reason, pre-service teachers' lessons were videotaped and they were required to analyse their lessons with a focus on classroom interaction. First, they learned the classroom interactional competence framework and learned how to analyse their lessons with a micro-analytic perspective. And then, they engaged in a reflective cycle in which they watched their videos, chose a significant segment and reflected on this segment. In addition, they exchanged feedback with each other in this cycle. At the end of the term, they were required to reflect on the whole process. This study explored the pre-service teachers' reflections on this reflective cycle and specific components of the practicum. In addition, the researcher's field notes were part of the data set. The content analysis of the reports indicated that pre-service teachers benefitted from this practicum course. In the light of their views, suggestions and implications for the practicum will be presented.

Keywords: EFL pre-service teacher education, practicum, video-based reflective practicum, classroom interactional competence, teacher reflection.

Öğretmen Adaylarının Video Temelli Öğretmen Uygulaması Dersi İle İlgili Düşünceleri: "Dersimi Her İzlediğimde Geliştirecek Yeni Bir Yan Buluyorum"

Öz

Bu nitel çalışmanın amacı bir grup İngilizce öğretmen adayının almış olduğu öğretmenlik uygulaması dersine ilişkin görüş ve düşüncelerini ortaya koymaktır. Öğretmenlik uygulaması dersinde öğretmen adaylarının verdikleri dersler video kameralar aracılığı ile kaydedilmiş, öğretmen adaylarına sınıf içi etkileşimsel yeti ile ilgili dersler verilmiş, sınıf içi etkileşimini çeviriyazıya dökme ve inceleme yöntemleri anlatılmıştır. Öğretmen adayları sınıf içi etkileşimsel yeti çerçevesinde kendi ve akranlarının derslerini incelemiş ve yansıtıcı düşünce uygulamaları ile sınıf içi pratiklerini değerlendirmişlerdir. Dönem sonunda öğretmen adaylarından tüm dönemi değerlendiren yansıtıcı raporlar yazmaları istenmiştir. Öğretmen adaylarının yazılı yansıtmaları içerik analizi ile incelenmiş ve bu çok katmanlı öğretmenlik uygulaması ile ilgili görüşleri belirlenmiştir. Aynı zamanda araştırmacının alan notları da araştırmanın veri setinin bir parçasını oluşturmuştur. Araştırmanın sonuçları öğretmen adaylarının derslerini videoya kaydetmenin öğretmen öğrenmesine ve yansıtıcı düşünmesine faydası olduğunu düşündüklerini göstermiştir. Ayrıca sınıf içi iletişimsel yeti ile öğrenme arasındaki ilişkiyi öğretmen adaylarının benimsedikleri ve uygulamalarına yansıttıkları da diğer bir bulgudur. Araştırma sonucunda öğretmenlik uygulaması dersinin bileşenleri ile ilgili öğretmen adaylarının görüşleri ayrıntılı bir şekilde ele alınılacaktır.

Anahtar kelimeler: Hizmet öncesi ingilizce öğretmeni eğitimi, öğretmenlik uygulaması, video aracılığı ile yansıtıcı düşünme uygulamaları, sınıf içi etkileşimsel yeti, öğretmen eğitiminde yansıtıcı düşünme

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INTRODUCTION

Video-based observation practices have been frequently used in language teacher education thanks to technological developments (Hockly, 2018). It is believed that video-based observation may foster self-reflection practices of pre-service and in-service teachers compared to traditional forms of observation (Kleinknecht & Gröschener, 2016; Walsh &Mann, 2015). In the last ten years, ELT programs in Turkey use videos in micro teachings (Tülüce & Çeçen, 2018), practicum (Akcan, 2010 & Eröz- Tuğa, 2013) and also in in-service training (Yücel et al., 2016) and they find videos as a useful tool to promote reflection. Tülüce and Çeçen (2018) concluded that videos help pre-service teachers (PSTs henceforth) remember their practice, notice important aspects of it and understand the feedback given by their supervisors.

While videos are appropriate tools to promote reflection, pre-service teachers are found to need specific guidance while viewing the video to notice significant issues related to student learning (Kleinknecht & Gröschener , 2016). Thus, video-based observation should be supported with specific tasks to facilitate pre-service teachers' noticing abilities and encourage them to propose different solutions to the problems they see in the videos which will promote teacher reflection in the end.

There have been interactional and evidence-based approaches to integrate reflection in second language teacher education (Walsh, 2006: SETT; Sert, 2015: IMDAT). These models and frameworks suggest data-based tools will help teachers to analyse their talk and classroom behaviours and give them opportunities to reflect on their teachings for improvement. For this reason, we adapted these models (which will be presented in the next section) to our context and implemented a reflective, video-based, and micro-analytic practicum with a focus on classroom interaction. In this study, we asked for pre-service teachers' perspectives on this practicum.

We believe that this study is significant since it shows pre-service teachers' opinions and beliefs about the practicum course they actively got involved. Teacher cognition is formed by teachers' beliefs and practices (Borg, 2003) and eliciting teacher candidates' opinions provides insight into the teacher cognition. In addition, this study may have implications for teacher educators and guide them to shape and design video-based practicum.

Research questions

In this s study we address these research questions:

1) What are the perceptions of pre-service teachers of English about the components of the reflective, video-based, and micro-analytic practicum with a focus on classroom interaction?

2) Do they perceive the reflective, video-based, micro-analytic practicum helpful? If so, in what ways?

Literature review

Teacher reflection involves critical thinking process about one's own practices in the classroom. As Anderson (2020) summarised it, reflection raises awareness and understanding, and it helps teachers to make informed decisions, and detect and solve problems in a daily routine of teaching. Being a reflective practitioner is a professional role attributed to the English language teachers (Kumaradivelu, 2003). At the same time, it is acknowledged that reflection is hard to define (Anderson, 2020), abstract and complex (Jay & Johnson, 2002). Especially in pre-service teacher education, teacher educators should provide a framework for reflection to the pre-service teachers (Sagasta & Pedrosa 2019) to guide them and to enhance teacher learning. Proper and clear guidance on how to think about their own practice is a must for student teachers.

In order to provide clear and accessible guidance for pre-service teachers and show them important aspects of a lesson to focus on, Walsh and Mann (2015) suggest " data-led, collaborative, dialogic reflection with the use of appropriate tools" (p. 362). They suggest teachers use real data from their own classrooms, work and discuss with other teachers to reflect on their language and interaction in the classroom. This suggestion naturally requires the use of videos in teacher education programmes.

Videos can be employed for different reasons and with different techniques in pre-service and in-service teacher education (Christ et al., 2017; Hüttner, 2019; Man, et.al 2019 ;). Gaudin and Chalies (2015) reviewed the use of videos in teacher education and found out that teacher educators used videos to improve pre-service teachers' "noticing abilities and knowledge base reasoning"(p.46), teach "how to interpret and reflect" (p.47), "to build knowledge on what to do" (p.49). In the same study, it is recommended that PSTs need guidance and support and the instruction should be planned and designed carefully. The instruction and related tasks should be within the capacity of PSTs. To do this, one phenomenon of the classroom events should be chosen. PSTs may not be

ready to evaluate or criticise others so the tasks should be designed considering this. Who selects the video and how many times should PSTs view videos are other questions to be addressed (Gaudin & Chalies,2015).

Frameworks for Video-Based Reflection for Language Teachers

CIC and Sett Grid by Walsh (2011)

There have been different frameworks available for language learners to use while they view their videos. The Classroom Interactional Competence framework developed by Walsh (2006) is one of them. This framework focuses on language use, feedback and questioning and moving back and forth between different classroom discourses and suggests that effective use of language by teachers is an important interactional competence, paving the way for effective language teaching and learning.

Table 1. Classroom Interactional Competence Framework by Walsh (2011)

Maximising interactional space (through use of increased wait time, promoting extended learner turns, planning time)
Shaping Learner Contribution (seeking clarification, scaffolding, modelling and repairing learner input)
Effective Eliciting
Interactional Awareness
Managing Mode Shifts

Table 1 presents the detailed competence indicators of CIC. Based on these indicators, Walsh (2006) developed a practical tool for language teachers to evaluate their talk. Self Evaluation of Teacher Talk (SETT henceforth) was developed to raise language teachers' language awareness and show them the relationship between language, interaction and learning. This tool was used to engage the pre-service and in-service teachers in self-evaluation practices in different studies and it was found effective (Aşık & Kuru- Gönen, 2016; Ghafarpour, 2017). Aşık and Kuru- Gönen, (2016) used the SETT grid and taught the interactional features to the group of pre-service EFL teachers. And then they audio recorded the lessons and pre-service teachers were asked to reflect on their talk using the grid. Peer discussions were organized, and teacher diaries were written to promote reflection among pre-service teachers. As a result of this intensive work, the authors reported a positive experience. Pts were found to manage to reflect on their talk easily and use metalanguage with the help of the SETT. In addition, the need to include code-switching to the grid was underlined in the study.

Imdat Model by Sert (2015)

The CIC framework has been expanding thanks to classroom interaction studies. For instance, Sert (2015) micro analytically investigated multilingual EFL and ESL classrooms and added other competence areas such as "the management of claims and displays of insufficient knowledge, increased awareness of unwillingness to participate, effective uses of gestures, management of code-switching" (Sert 2016, p.134) and Sert (2010, 2016) proposed the integration of conversation analysis in language teacher education to help pre-service teachers to work on their own language use and foster interaction in language classrooms. Conversation analysis is a research method that analyses talk-in-interaction with a micro-analytic perspective. Sert (2015) employs this research method to analyse classroom interaction and draws on some educational implications to offer practical solutions to the teachers.

Table 2. Sert's (2015) contributions to the CIC framework

Successful management of claims/ displays of insufficient knowledge (CIK)
Increased awareness of unwillingness to participate(UTP)
Effective use of gestures
Successful management of code-switching

Sert (2019) presents a "technology-enhanced, reflective, and micro-analytic teacher education framework" (p. 217) IMDAT as "a model and template" (Sert, 2015, p. 168). It involves a collaborative feedback cycle in which pre-service teachers are first introduced to the CIC features. Following the instruction on CIC supported with concrete examples (classroom videos with transcriptions, academic articles), the second step is micro-teaching of pre-service teachers under the supervision of the teacher educator. This teaching is to be recorded. Sert (2019) suggested a video-tagging tool to identify critical moments and episodes which will help teacher educators and PSTs easily navigate through the messy classroom discourse. The third step is ***D****ialogic reflection and trainer*

feedback which is like the post-conference held by teacher educators (Eröz-Tuğa, 2013). In this step using the stimulated recall technique (Walsh and Mann, 2015) the teacher educator and the PSTs view the teaching together. Having a specific classroom aspect in their mind, the teacher educators help trainees to view the video and focus on that aspect of the teacher talk or classroom event (e.g. questioning, L1 use, shaping learner contributions). Sert (2015) argues that this step will provide a data-led reflection space for the PSTs. One cannot expect a correction or change in teacher talk in this stage. Based on the discussion and feedback from the teacher educator, pre-service teachers write a critical self-reflection on their strengths and weakness referring to the exact moments of the video. This writing task also requires multiple and close viewing of the video which strengthens the quality of the analysis and reflection. After that PSTs teach another class and repeat the previous cycles. But this time the previous cycles will be implemented with a peer considering the power relationship will be more balanced in peer observations. The last cycle is teacher collaboration in which teacher candidates come together and discuss the critical instances in their teachings. Sert (2019) argues that this collaborative – CA informed and technology-enhanced feedback process will foster teachers' awareness regarding their talk, interactional space, and language learning.

In this study, we report on video-based and micro-analytic practicum where a reflective cycle like the IMDAT (Sert, 2019) was followed. The purpose of this paper is to explore what teacher candidates' opinions are about this practicum experience and how they benefit from this reflective feedback cycle.

METHOD

This small scale study is a qualitative case study. Case studies explore "bounded systems to holistically describe an activity or a process" (Johnson & Christensen, 2004, p.377) In this small-scale research, we considered this practicum experience as a case and aimed to provide an in-depth analysis of this experience. As data collection tools, we employed observation and self-reports from participants.

Context

This study was conducted in a foreign language education department in a state university in Turkey. Participants were 30 EFL (English as a foreign language) teacher candidates who took the practicum as a must course in the last year of their education. In this course, pre-service teachers made weekly observations and taught classes in their practice schools under the guidance of the mentor teacher and the supervisor (faculty member at the university). One of the authors of this study was the assistant to the course so she helped to design and implement the course throughout the term. She videotaped pre-service teachers' lessons and led the reflective discussions at the faculty. Since she was involved in each and every step of the course, her role was participant observer (Creswell, 2012, p. 214).

Adaptation of the CIC Framework and Imdat to the Practicum

The practicum is a 14-week course involving observation and teaching at school and reflection at the university. It provides space for pre-service teachers to put theory into practice and observe a real classroom environment. It offers a transition phase and valuable learning opportunities for beginning teachers. We adapted the IMDAT model to help PSTs to make the most of this valuable learning opportunity. They both learnt how to teach and how to reflect on their practice with the help of videos and micro-analytic perspectives. Since Sert (2015) presented this model as a template to be modified for different contexts, we adapted it according to the particular context we had. To introduce CIC features and raise PSTs' language and interactional awareness, we designed a highly intensive practicum with introductory readings, experts in this field as invited speakers, transcription sessions, observation and teaching tasks. (Please see appendix A.)

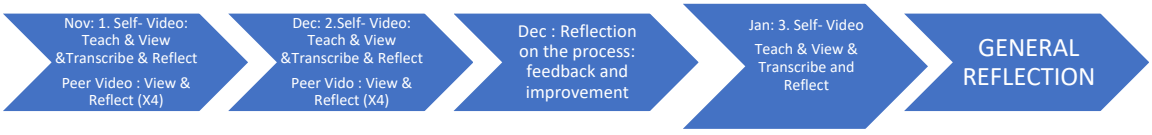

Figure 1. *The timeline of the practicum*

The first four weeks were spared to introducing classroom interactional competence (Walsh, 2006) to the pre-service teachers which is **I**ntroducing CIC step in IMDAT (Sert, 2015). As a follow-up, we taught transcription conventions to be used in the class and did some practice with real classroom data. We used Walsh's (2011) transcription convention since it was simpler and more practical for pre-service teachers. Following week, they began to design their lesson plans and teach (similar to the *Micro-teaching* step in I**M**DAT, Sert, 2015). Due to the high number of PSTs in the practicum class and the requirements of the course, candidates taught in real classrooms in our study unlike the micro-teaching phase suggested in IMDAT (Sert, 2015). Two PSTs taught one lesson together. While the first half of the lesson was taught by one, the last half of the lesson was taught by the other pair. The lessons approximately took 40 minutes and the research assistant videotaped it and shared the record with the PST one or two days later. After PSTs received their recording, they had two different tasks: The first one was writing *teaching task analysis* paper. In this task, they were required to view the recording multiple times and choose an instance such as question-answer, warm-up or presentation stage of the lesson. After identification of the segment, they would transcribe it (one or two minutes) and analyse it using the teacher's actions summarised in Tables 1 and 2. For instance, referring to the exact moment in the data, they would show how they elicited students' answers and used their gestures or code-switch. Based on the data, they evaluated the effectiveness of their actions on student learning.

The second task involves group work and collaboration. PSTs were assigned to the groups and they were required to choose a different segment this time to send it to the other group members. Other pre-service teachers would view the recording and without transcribing the segment they would comment on their colleagues' teaching. They were required to refer to the moments (indicating the exact minutes) to give feedback to their group members.

These two tasks were similar to the *Dialogic Reflection* stage in IMDAT. However, due to the crowded group of PSTs, the time constraints and the busy schedule of the instructors, we were not able to hold one-to-one conferences as suggested in IMDAT. Instead, the instructor gave written feedback to the pre-service teachers' self *teaching task analysis* each time they submitted it. The instructor did not give feedback on the second task which involved feedback exchange. This teach-view-reflect cycle was repeated three times during the practicum, that is, PSTs wrote three teaching task analysis papers and they provided peer feedback "post teaching support" twice (Figure 1).

After completion of the first cycle in December (in stage 3), they were asked to reflect on the feedback they received from their group members, the teaching skills they improved in the second teaching and the skills that they needed to work on. In the last stage (5) at the end of the term, they reflected on the whole process :

- self-observation and peer observation through videos
- classroom interactional competence
- doing transcription and adopting a micro-analytic view to reflect on lessons
- writing feedback for others and receiving feedback from others

This paper present the answers to these questions elicited from participants' self-reports and field notes of the researcher who observed the whole practicum process.

Data analysis

Written reports of the participants at the end of the practicum were the main source of the data. It was supported by the field notes of the researcher (at the same time the assistant of the course). Data analysis involved the steps of qualitative data analysis in Cresswell (2012). The participants were given numbers (PST1, PST 2) to ensure anonymity. The researchers read the reports multiple times to capture the general sense of the data and took brief notes. The reports were highly structured and the prompts provided some general themes such as the feedback, watching oneself and others, giving and receiving feedback, doing transcriptions, adopting a micro-analytic perspective and the focus on teacher talk (Appendix 2). Researchers read the data to find out whether new and extra codes emerged in the data. After ensuring the data saturation, a list of themes was compiled. The same procedure was repeated for the researcher's field notes. Involvement of the researcher as participant-observer in the practicum, thick descriptions ensured the credibility and trustworthiness of the research.

Research ethics

The ethical approval was obtained from the Applied Ethics Research Centre of Middle East Technical University (the approval number: 28620816/336) for this study. The participants gave their written consent to participate in the study and they were informed about the study beforehand.

FINDINGS

The findings indicate that there are four general themes that emerged from the reflections of the pre-service teachers and observations of the researcher. These were:

-watching self and others' videos

-learning CIC and linking it to their own practice

-adopting a micro-analytic perspective.

-writing feedback for others and receiving feedback from others

Watching Oneself and Others

When we first began to video record PSTs teachings, they were nervous. It was their first formal teaching experience in a real classroom environment and there were two cameras in the classroom to record them. That's why being recorded made them nervous and they did not like being recorded at first. However, as we continued, they seemed to forget the presence of the cameras in the classroom. At the end of the class, they even thanked the assistant for videotaping them since they thought it would be nice for them to watch their first teaching experience after many years.

The written reports showed that video viewing helped them to recognize themselves as teachers and question their perceptions about themselves. For instance, PST 8 wrote that "we are really different than we perceive". In the reflection forms PSTs describe this video viewing experience as a "new perspective", "third eye", and "learning opportunity". Overall, PSTs found it a learning opportunity. They mainly stated that they were able to notice how they used their body language and tone of voice thanks to the videos. While PST 10 focused on her body language "when I first watched myself I was shocked because during practicum I was not aware of my hands, gestures and mimics", PST 17 commented on his teacher talk: "I realised I speak too fast for students". PST 15 elaborated on this issue further :

> For example, while doing the teachings, I sometimes feel like I am talking extra slow because I am trying to talk slowly to be understandable. However, as I watched myself in the videos, I saw that I had been talking so fast that even I would have had difficulties understanding myself.

Secondly, they stated that they recognized off-task students or students who were raising their hands to participate. It was clear that videos provided them with a clear picture of the class. To illustrate; PST 27 commented that "we do not completely realise what is going on in the class. We are focused on our subject and we may not be able to see if the ss respond to us and what our strong or weak points are". As it can be understood from PST 27' s reflection, the videos provided them with a clear vision of the classroom. After watching the video, they recognized how students responded back to them and whether they understood them. They reflected that they did not listen to the students, instead, they just focused on their own questions. Moreover, they noticed that classroom management was an important part of the teaching profession. PST 25 stated that:

> While watching myself; I see that classroom management is the most important point in a language teaching environment. For instance, I can see how the students behave when I turn my back to class. Even only for two seconds, you may lose your control

Pre-service teachers also watched other PSTs' videos in their groups. They thought that they learned new techniques and activities from their peers. Although PST 15 thought that her group members chose the best instances and shared them with the group members, PST 3 thought that she found it helpful: "seeing how my friends were doing during their practice gives me ideas about how to teach creatively because, from each video that I watched, I learned a new way to teach". PST 6 thought that watching ideal teaching moments helped her:

> For example, while I am watching my peers, I can objectively analyze the video so I can decide what is wrong or what is true. For example, I see some common problems I have experienced are met by my peers and I watch how she or he can handle the problem.

It seems that observing similar problems in others' videos helped PSTs gain a better insight into the teaching experience and encourage them to think more. To exemplify, PST 7 commented that "I realise that we are doing the same mistakes sometimes and it pushes me to think about our mistakes and how we can improve our teaching skills". More importantly, viewing their own videos helped them to develop better as clearly stated by PST 3: "whenever I watched myself, I realised something different to improve" Videos seem to function as important tools to aid reflection.

To sum up, videos give them a chance to see themselves, their students and their peers from a different perspective and clearly help them to think deeply about teaching. Watching others both show them they experience the same problems and there are always new ideas to be learnt from others.

Learning CIC and Linking it to Their Practice

Pre-service teachers read articles on classroom interactional competence (CIC), attended a seminar on CIC, and analysed real classroom data to learn to transcribe classroom interaction (Appendix A). Their written reflection indicated that they internalized the framework of CIC and use it to analyse their own practice. With regards to CIC, they mainly focused on the classroom interaction terminology they learnt, the importance of feedback and wait time to foster learning. PST 1 commented that "I believe I have learnt terminology which makes me feel more professional". As suggested by PST 1, the terminology they learn and use in their reflections develops them professionally. In addition, it seems that with the help of the school environment, they re-evaluate the definition of teaching as well. PST 3 thought that: "teaching is not sth we learned in the department".

They see the importance of interaction in teaching, and they integrated CIC terminology to report their observations and describe their own practice. This piece of reflection is from PST 17's teaching analysis:

> I also elaborated what they said for example, in the lines 7, 12, 46, 54, and 60. After the students gave me answer, I repeated theirs, and added more. When a student told me dairy products in line 11, I repeated dairy products and added cereals. Also, when they said that muscles help pump blood, I explain how it helps. I think these are good examples for elaboration.

Giving feedback is the common issue they address. They mostly thought feedback was a significant aspect of teaching and they improved it thanks to this course. PST 6 pointed out that:

> The other skill that I improved is to give feedback to the students. Throughout the term, we learned interaction between our students and us is an effective tool for teaching and learning. Giving feedback is an important issue that a teacher should be good at. When I think about my unguided teaching, I was not good at giving feedback to given responses. My feedback was simply yes/no. At the first teaching, I used some strategies to give feedback such as recasting or explicit error correction.

In addition to feedback, the second specific issue they developed thanks to this micro-analytic practicum is using wait time effectively. Waiting for students to express their ideas and tolerating silence in the classroom elicited more answers from students. PST 1 commented that " I think I began to learn not to be afraid of silence during the lesson". PST 14 reflected on this issue: "I think not knowing what to do when the answer does not come from any of the students can be my problem. I should learn to wait after asking questions. I did not use wait time properly". Focus on microanalysis and interactional features such as turn-taking seemed to help teacher candidates. To exemplify, PST 27 stated that:

> However, focusing on micro-details are helpful for our improvement. …I have learnt that I need to be calm and wait for students' answers. I thought that waiting without doing anything would be something that I should avoid doing in class, but I have learnt that I should wait and make my students speak more.

All in all, written reflections of pre-service teachers showed that they internalized CIC as a framework and used it to analyse and evaluate their own practice. It provides them with concrete tools (e.g. terminology) and insight into classroom interaction (importance of feedback and wait time).

Adopting Micro-Analytic Perspective: Doing Transcriptions

While pre-service teachers seemed to be certain about the benefits of the video-based reflective practicum, they did not think the same about the micro-analysis work they were engaged in. They found transcribing their talk "meaningless", "hard", and "academic". To illustrate, PST 30 wrote that:

> I do not think it helped me to develop as a teacher. It certainly was beneficial for me since I am interested in languages and things related to them, but I do not think it is something essential for teachers. Teachers do not do it during their teaching careers.

To them, transcribing was part of academicians' work as seen in the previous comment. One teacher candidate thought that transcription was meaningless. Transcribing and referring to the lines as evidence did not make a difference for her. PST28 wrote that:

> To tell the truth, I am not sure if I benefited from writing transcription or not. For example, while writing feedback to my peers; I did not transcribe their segments; however, I do not think that there is a distinction btw theirs and my own analysis paper. I understand the same thing from them.

PST 28's comment showed that she thought viewing the video already helped her to reflect on her teaching. They had also concerns about the value of transcribing a small part of classroom interaction. They were suspicious about the generalizability of the work they did. To illustrate, PST8 stated that:

> I think that writing transcription was unnecessary and really time-consuming. I had difficulty deciphering my recording. I spent hours on them, and only writing about two or three minutes was not helpful to see my progress in my teachings.

However, there are also different opinions regarding transcription tasks. For instance, PST 17 wrote that "Micro details helped me to learn teacher echo and recast".Or, PST 29 recognized that transcription task necessitated multiple viewings which in turn helped her reflect better: "I had to watch myself and the students again and again and this helped me focus on micro details in the teaching process". In addition, this task helped them to reevaluate their language proficiency: "it made me focus on my sts speech, see my grammar mistakes , to some extent, it is useful" (PST 1). Wait time was mentioned in the previous category as an important feature of CIC. Transcription task seemed to enable teacher candidates to measure wait time. PST 15 pointed out this contribution:

> Well, I would like to mention actually one point that transcriptions contributed: wait time. Now, I know how much I wait after directing a question. And how much more should I try to wait after directing a question.

In addition, the piece of reflection by PST3 might explain why some teacher candidates found transcription task hard and time consuming.

> I think transcription part was a little bit demanding but for the second and the last one, I realized that I could do them more easily because I learned how to do that. While writing reflection on my teachings, transcriptions gave me a chance to use specific terms to analyse my teaching rather than saying only I like this part or that part. For example, question types, wait time, breaks or teacher-learner turns are so clear when I look at the transcription. So, doing transcription is really hard but useful for me.

Those who found transcription useful mentioned that they had noticed their grammar mistakes, intonation patterns or the words that they overused. The following quote from PST 27 may summarise pre-service teachers' contradictory opinions:

> I do not think that transcribing helps me to improve my teaching skills. I think we do it for writing the teaching task analysis papers. It is a difficult task, I am not able to transcribe the segment properly. It takes a lot of time, and the students sometimes speak with their friends loudly. I am not able to write every utterance takes place in the segment. However, focusing on micro-details are helpful for our improvement. I have learnt a lot about shaping the learner contribution. I have learnt how to give feedback to my students.

The researcher's field notes may clarify the pre-service teachers' opposite views. Some PSTs thought that they adopted this micro-analytical view for the sake of completing assignments. On the other hand, teaching task analysis papers showed how well they reflected on their practice by adopting a micro-analytic perspective. One example from one PST's teaching task analysis paper could be given here:

> PST 2: "while giving instructions before the scanning activity, I make a mistake by saying "read the text" (Line 10). They are not supposed to read the text completely, they are to find the specific information. I should have said "scan the text". Then, I say "you have a couple of minutes". This is an ambiguous statement. I should avoid using ambiguous statements and rather speak clearly by saying 3 minutes or 5 minutes for example".

The assignments (teaching task analysis papers and post-teaching support group entries) showed that producing transcription and viewing videos multiple times to produce transcriptions helped PSTs to analyse their practice better and give feedback to their peers better. Although they were not asked to make suggestions about the course, PST 15 suggested watching PSTs videos and discussing them together in class using the transcriptions.

> We should have watched the videos together and discussed and generated more ideas… Maybe If we had the chance to bring our transcriptions to the classroom and discuss them with our friends, we would notice more thus benefiting more.

This piece of reflection above might show that pre-service teachers were able to reflect on this practicum and make suggestions for improvement of the course. All in all, although pre-service teachers found transcription difficult and unnecessary, their reflections were detailed and comprehensive. It seems that this video-based, reflective, and micro-analytic practicum provides them with concrete tools to reflect on their practice.

Writing Feedback for Others and Receiving Feedback from Others

Pre-service teachers' reflections regarding feedback exchange showed that they did not find it useful. They mostly found their friends' feedback "kind, "unrealistic", and "positive". They seem they did not believe that their peers were competent enough to give feedback. PST 23 wrote that: "honestly ı think we are still students we are not competent enough to give feedback". Or, PST 15 implied that the feedback might be fake: "I read them knowing that they were the homework of my friends to get the marks".

Moreover, they implied that their peers might not have expressed their real opinions to save their faces or to complete the assignments. To illustrate, PST 16 commented that:

> Actually, I cannot say that I have learned much through peer feedback because we always tried to pick segments that we were confident in so that we could show our best mode. Moreover, the feedback was not that sincere at least this is what I felt.

It means that even if she received sincerely written feedback, she would not pay attention to it. She did not trust her peers. However, some students found the feedback they received useful. To exemplify, PST 30 commented that "feedback of some group members was useful; some group members did not even give any feedback". As suggested above, group dynamics also affected this feedback exchange. While some PSTs did not send any feedback, the others were actively involved in the process and provided timely feedback.

To conclude, the PSTs' opinions on the specific components of this reflective, video-based, and micro-analytic practicum showed that they found videos and the CIC framework as a tool useful. Adopting a micro-analytic perspective and producing transcriptions were the demanding requirements for them. Lastly, while some thought that the feedback they received was useful, some did not find their peers' feedback dependable.

Discussion & Conclusion

The purpose of this study is to explore pre-service teachers' (PSTs) opinions on a video-based, reflective and micro-analytic practicum with a focus on classroom interaction. They were asked to reflect on watching self and others' videos, learning the CIC framework, adopting a micro-analytic perspective and feedback exchange. The results showed that they thought they benefitted from this reflective practicum in general. The researcher's observations also confirmed this finding.

PSTs' written reflections indicated that they shared similar views regarding particular components of the practicum such as watching videos and analysing classroom interaction via the Classroom Interactional Competence (CIC) framework. They found the integration of videos really useful and considered them helpful for their professional development which was also supported by the recent studies (Sagasta & Pedrosa, 2019; Tülüce & Çeçen, 2018; Yücel et al., 2016). Similar to Tülüce and Çeçen's findings (2018), PSTs in this study stated that they noticed actions that they had never noticed before thanks to the videos and considered the video viewing experience as a tool for critical reflection and professional development.

This finding seemed to support Walsh and Mann's (2015) proposal regarding the use of appropriate tools in reflective practice. Providing PSTs with a guideline while viewing the videos and assigning tasks to them are highly effective in fostering deeper reflection and developing noticing abilities (Hatch et al., 2016). Readings and discussions on CIC, especially the concept of wait time, maximising interactional space and shaping learner contributions provided PSTs with concrete tools and terminology to view and reflect on the videos. Their self-reports also demonstrated that they managed to integrate CIC terminology into their reflection and evaluate their practice using the framework.

In this sense, we believed that the classroom interactional competence (CIC hereafter) framework developed by Walsh (2006, 2011) and following models such as IMDAT (Sert, 2015, 2019) can help teacher educators to support video-based observation practice in the practicum and offer appropriate tools (Walsh & Mann, 2015) for the pre-service teachers to self-reflect and give peer feedback. We have some pedagogical implications and suggestions regarding how this process can be implemented in EFL pre-service teacher education.

Pedagogical Implications

First of all, it should be acknowledged that this type of reflective practice -where PSTs record videos, select and transcribe segments, share with others, write self-analysis papers and provide feedback for others- is a really long, demanding and arduous process. It requires technological equipment and a set of skills (e.g. editing and sharing videos). PSTs will need to be supported during the process. Teacher educators should provide timely feedback and guide PSTs in each and every step. However, unless PSTs and teacher educators receive enough support from their institutions in this process, it is really difficult to put such a reflective practicum into practice.

The number of PSTs in a course, the teacher educators' course load, and other courses PSTs should take should be reduced. In this study, since there were 30 PSTs in the group and instructors had a busy schedule, the feedback from the teacher educators was limited. Ideally, 7-8 PSTs in one group could work with one teacher educator. A reasonable amount of time should be devoted to this practicum and teacher educators and PSTs should not feel under pressure to meet the deadlines and prepare for the next teachings.

Secondly, pre-service teachers can be introduced to the classroom interactional competence framework earlier, ideally in the previous year, when they engage in microteaching at faculty. The fourth year of pre-service education is a hectic year for teacher candidates. It would be ideal to introduce theoretical knowledge on shaping learner contributions, wait time, maximizing interactional space, and L1 and L2 use earlier in the third year. Third-year courses such as *Teaching Language Skills* or *Teaching Young Learners* may be appropriate courses to introduce these concepts to the pre-service language teachers. When they conduct micro-teaching, pre-service teachers may receive feedback on their language use and interactional competence. Equipped with the knowledge of these interactional work of teaching, pre-service teachers may feel powerful and more ready to teach in the practicum

Thirdly, as the results suggested, some teacher candidates may not provide feedback sincerely or some PSTS feel that their peers do not tell their sincere opinions. In addition, they think that others only share the best moments of their teaching. As Hobbs (2007) stated when people are required to engage in reflection, there is always a risk that they will fake it. On top of that, since this type of reflective practice is not common in in-service teacher education (in K-12) in Turkey, PSTs might consider this as a futile effort that they would never use in their professional life again. For this reason, some PSTs might have also considered the tasks (e.g. transcriptions) just as "assignments to pass the course" and did not consider their real value in analysing classroom interaction. These are serious concerns that will affect the reflective process negatively.

To address them, a few solutions can be suggested. We believe that a collaborative classroom environment based on trust and maintaining good lines of communication among teacher candidates and teacher educators will be helpful to eliminate these concerns. PSTs need to collaborate and trust each other regarding sharing videos and feedback. As one of the teacher candidates commented, regular in-class sessions can be organised where a group of PSTs watch the same classroom video together and exchange feedback under the guidance of the teacher educator. Having such sessions where teacher candidates also learn how to provide and receive feedback might foster their self-efficacy in giving feedback and develop a sense of trust in the group. In addition, as we suggested before, video-based observations should be integrated into in-service teacher education to foster the continuous professional development of teachers. Suppose teacher candidates know that it will be an ongoing reflective cycle to be repeated in their professional life, rather than considering it as an academic practice. In that case, they can see it as part of the teachers' job to improve learning and teaching in the classroom. Teachers may work in a similar study group and videotape themselves regularly to incorporate this reflective video-based cycle into in-service teacher education. And then, they can follow a similar reflective feedback cycle, identify their problems, and suggest solutions.

To conclude, a reflective, video-based, and micro-analytic practicum with a focus on classroom interaction helped pre-service teachers in this study to notice the weaknesses and strengths of their practice, identify problems and suggest solutions for the future. We strongly suggest that the practicum component of the pre-service teacher education can be redesigned to include video-based and micro-analytic reflection to help pre-service teachers to become reflective practitioners.

Statements of publication ethics

The ethical approval was obtained from the Applied Ethics Research Centre of Middle East Technical University (the approval number: 28620816/336) on 3 September 2015.

Researchers' contribution rate

Each of the authors contributed equally to the article.

Conflict of interest

The authors have no conflicts of interest to disclose.

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Appendix A: Course Schedule

		SCHOOL EXPERIENCE ACTIVITY SCHEDULE		
Oct 5		**Introduction to the course**		
Oct 12		**Interaction and Language Learning& Teaching** *Teacher Talk*		
Oct 19		**Classroom Interactional Competence**		
Oct 23		**Invited Speaker** *Dr. Olcay Sert (HUMAN, Hacettepe Univ.)*		
Oct 26		**From Communicative Competence (CC) to Classroom Interactional Competence (CIC) Classroom Modes, Interactional Features**		
	e e k a t s c h o o l	**Observe & Reflect at school**	**Readings & In-Class activities & Support Group Assignments**	**Teaching at School**
No 2		**First Day at School** Learn about your mentor teacher and the school: First day impressions and experiences	**CA transcription Workshop**: Recording, Transcribing, Analyzing, Reflecting on data	***Video-taping a 20 minute Unguided Teaching Segment***
No 9		**OBS 1** Classroom Modes		
No 16		***OBS 2*** Questioning & Wait Time		
No 23			**Online Post-teaching support 1:** (feedback focus: Mode awareness & maximizing interactional space)	***Teaching Task 1***
No 25		**OBS 3** Tracking Learner & Teacher Behaviour		
No 30		**OBS 4** Error Management Feedback, SLC		
Dec 7			**Online Post-teaching support 2:** (feedback focus: Attending to the learner & Shaping learner contributions)	***Teaching Task 2***
Dec 14	8	**OBS 5** Classroom Breakdowns		
Dec 21	9	**OBS 6** L1 & L2 use		
Dec 28		W 10 ***Final Teaching Task***		
Jan 4				

Appendix B:

In the practicum, we've made use of videos for the observations. Using video recorders, you've observed yourself and your peers. Based on the observations, you made transcriptions of your teaching and wrote **Teaching Task Analysis paper** and gave **Post-Teaching Support Feedback** to your peers. Please answer the questions below considering **this observation experience.**
1. What do you **learn** from this experience? (watching yourself/ your peers, writing reflection and giving feedback, making transcription). Please explain it by giving examples.
2. Do you think observing yourself / your peers using video help you to develop yourself as a teacher? Why / Why not?
3. Do you think **transcribing** your teachings and **focusing on micro-details** help you to develop as a language teacher? Why / Why not? Please give examples.

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School Climate, Teacher Self-Efficacy, and Professional Satisfaction: A Study of Relations

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Abstract

School climate, teacher self-efficacy, and professional satisfaction are important concepts that affect both teachers' professional development and quality of education. This study aimed to determine teachers' school climate perceptions, self-efficacy beliefs, and professional satisfaction levels, and to examine the relationship between these concepts. It was designed in a correlational survey model. The sample of the study consisted of 397 teachers working in kindergartens, primary, secondary, and high schools in a province center in the Central Black Sea region of Turkey, in the 2020-2021 academic year. A Personal Information Form, Comprehensive Assessment of the School Environment, Teachers' Sense of Efficacy Scale, and Job Satisfaction Questionnaire were used in the data collection procedure. In the data analysis, both descriptive and inferential statistics were performed. Results revealed that: teachers' school climate perceptions were at a medium level, and female teachers' school climate perceptions were found to be statistically higher than those of males'. It was intriguing that only teaching level was associated with school climate, teacher self-efficacy, and professional satisfaction, while teaching experience and academic degree were not associated. A medium, positive, and significant relationship was found to be between teachers' school climate perceptions, professional satisfaction, and teacher self-efficacy. 12% of the variance in teacher self-efficacy and 35% of the variance in professional satisfaction are explained by school climate. Results are discussed within the related literature, and recommendations are made for further research and for stakeholders of education.

Keywords: School climate, teacher self-efficacy, professional satisfaction

Öğretmenlerin Okul İklimi Algıları, Öğretmen Öz-Yeterliği İnançları ve Mesleki Doyumları Arasındaki İlişkinin İncelenmesi

Öz

Okul iklimi, öğretmen öz-yeterliği ve mesleki doyum, hem öğretmenlerin mesleki gelişimini hem de eğitimin kalitesini etkileyen önemli kavramlardır. Bu araştırmanın amacı, öğretmenlerin okul iklimi algılarını, öz-yeterlik inançlarını ve mesleki doyum düzeylerini belirlemek ve bu kavramlar arasındaki ilişkiyi incelemektir. Çalışma ilişkisel tarama modelinde tasarlanmıştır. Araştırmanın örneklemini 2020-2021 eğitim öğretim yılında Türkiye'nin Orta Karadeniz bölgesindeki bir il merkezindeki anaokulu, ilkokul, ortaokul ve liselerde görev yapan 397 öğretmen oluşturmaktadır. Veri toplama işleminde Kişisel Bilgi Formu, Okul Ortamını Kapsamlı Değerlendirme Ölçeği, Öğretmen Yeterlik Algısı Ölçeği ve İş Doyumu Ölçeği kullanılmıştır. Verilerin analizinde hem tanımlayıcı hem de çıkarımsal istatistikler yapılmıştır. Bulgular öğretmenlerin okul iklimi algılarının orta düzeyde olduğunu ve kadın öğretmenlerin okul iklimi algılarının erkeklerden istatistiksel olarak daha yüksek olduğunu ortaya koymuştur. Araştırmanın ilgi çekici bulgularından biri, sadece öğretim düzeyinin okul iklimi, öğretmen öz-yeterliği ve mesleki doyum ile ilişkili olması, öğretim deneyimi ve akademik derecenin ilişkili olmamasıydı. Öğretmenlerin okul iklimi algıları ile mesleki doyumları ve öğretmen özyeterlikleri arasında orta düzeyde, pozitif ve anlamlı bir ilişki bulunmuştur. Okul iklimi öğretmen öz yeterliğinin varyansının %12'sini ve mesleki doyumun varyansının %35'ini açıklamıştır. Sonuçlar ilgili literatürle tartışılmış, ileriki çalışmalar ve eğitimin paydaşları için önerilerde bulunulmuştur.

Anahtar kelimeler: Okul iklimi, öğretmen öz-yeterliği, mesleki doyum.

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INTRODUCTION

People's characteristics, self-efficacy beliefs, and perceptions towards the organizations they work for affect their business performance and the productivity of the organizations. Undoubtedly, teachers are one of the major stakeholders that increase productivity in educational institutions. Therefore, teachers' perceptions of the schools they work for may affect their professional performance and the quality of education. Edmonds (1979) emphasized the importance of a positive school culture for the effectiveness of schools. So, having healthy and positive perceptions towards the school is very important both for the development of educational objectives, and the professional and psychological satisfaction of teachers, students, and administrators who are the stakeholders of the school culture.

School Climate

Although goals and processes are similar, every educational institution has a distinctive, observable ambiance and atmosphere. This distinctive atmosphere of educational institutions is named the school climate. For the school, the climate is a metaphorical concept and generally indicates the quality of the relationship and interactions within the school (Freiberg, 1999). School climate expresses the perceptions that all stakeholders of the school get experienced, and share about the learning environment. Although the school climate is explained with metaphorical concepts such as atmosphere and character, it also can be associated with various variables (Hoy, 2003). Cohen (2009) stated that these variables are related to the physical, social, affective, and academic features of the school. The physical environment of the school consists of the school building, the number of teachers, students, and administrators, the number and cleanliness of classrooms, course materials, and technological infrastructure. The relationship and interaction between the partners of the school and participation in the decision-making process have been described as the social environment of the school. The emotions that the stakeholders experience in the school such as love, trust, respect, and tolerance, refer to the affective environment of the school. The academic environment covers all activities related to instruction, which is its main purpose. In light of this information, school climate can be defined as the character and quality of the school reflecting the interpersonal relationships, instructional process, emotions and thoughts, administrative practices, and the physical and organizational structure obtained from the experiences of teachers, students, administrators, and parents.

We know that the combination of behavioral and emotional perceptions about the school, experiences in the learning environment, and value judgments are effective in the formation of the school climate. Accordingly, positive perceptions of the stakeholders towards the school indicate a positive and healthy school climate and negative perceptions indicate a negative school climate (Zullig, Koopman, Patton, & Ubbes, 2010). A positive and healthy school climate has positive effects on all stakeholders of the school, and education outcomes in general (Berkowitz, Astor, Pineda, DePedro, Weiss, & Benbenishty, 2021; Kurt & Çalık, 2010; Saputra, Supriyanto, Astuti, Ayriza, & Adiputra, 2020). That is because, in schools that develop a positive school climate, all stakeholders feel valued, and cooperate with a sense of higher commitment (Thapa, Cohen, Guffey & Higgins-D'Alessandro, 2013). Cohen, McCabe, Michelli, and Pickeral (2009) emphasized that a sustainable positive school climate promotes the learning and individual development necessary for a productive, participatory, and satisfying life in a democratic society.

The concept of school climate, which is both affected by and affects the feelings, behaviors, and perceptions of the stakeholders, has been studied in the previous literature. In previous studies, the relationship between school climate and many variables have been examined such as organizational productivity (Abdel-Basset, Manogaran, Mohamed, & Rushdy, 2019; Hoy, Tarter & Kottkamp, 1991), administrative leadership (Augustine, Engberg, Grimm, Lee, Wang, Christianson, & Joseph, 2018; Dinham, Cairney, Craigie, & Wilson, 1995; Mendel, Watson & MacGregor, 2002), teacher behaviors (Dilbaz-Sayın, 2017; Malinen, & Savolainen, 2016; Rafferty, 2003; Xiaofu & Qiwen, 2007; Wilson, Marks Woolfson, & Durkin, 2020), and student achievement (Berkowitz, Moore, Astor, & Benbenishty, 2017; Pong & Zeiser, 2012). These studies revealed that school climate has positive effects on the mentioned variables. In addition, Aldridge and Fraser (2016) claimed that school climate may be related to teachers' self-efficacy beliefs. Teachers' self-efficacy belief is also an important psychological concept related to teacher effectiveness and the quality of education.

Teacher Self-Efficacy

Self-efficacy belief, based on Bandura's (1982) social learning theory, is related to personal judgments about how well a person can perform necessary actions to deal with possible challenges. According to Schunk (1990), self-efficacy belief is one of the most important predictors of human behaviors, and is effective in choosing and achieving a goal, controlling the environment, and succeeding by organizing necessary actions. If individuals

believe that they have the ability and control power to perform a task, they are more willing to choose the task, express their determination, and exhibit necessary behaviors (Eaton & Dembo, 1997; Sharp, 2002). On the contrary, individuals may not exhibit the desired behaviors, despite having the necessary equipment, because, when people believe that their actions will not bring desired results, they become reluctant to exhibit necessary behaviors (Üstüner, Demirtaş, Cömert & Özer, 2009). Self-efficacy belief affects individuals' behaviors as well as their thinking and emotional reactions. Individuals with a high self-efficacy belief can be more comfortable and productive in performing difficult duties. A low self-efficacy causes people to believe duties and responsibilities are even more difficult than they are. This way of thinking increases anxiety, and stress, and narrows the perspective of an individual to solve a problem in the best way. In conclusion, self-efficacy belief has a strong impact on the achievement levels of individuals, by managing environmental factors positively (Zimmerman, 2002; Üredi & Üredi, 2006). From this perspective, we can claim that self-efficacy is an important concept in understanding, expressing, and developing teachers' feelings, thoughts, and behaviors toward instruction that is affected by several environmental and psychological factors.

Teachers' professional competencies have been the subject of educational studies recently. This concept takes place in the literature as “teacher self-efficacy perception or belief” (Yeşilyurt, 2013). Teacher self-efficacy is described as the personal belief of teachers in the ability to develop knowledge, attitudes, and behaviors of students with different intelligence, readiness, and motivation levels (Skaalvik & Skaalvik, 2010). Put differently, self-efficacy for teachers is the competence of instructional activities conducted to ensure that all students learn (Koşar, 2015). We know that a high level of self-efficacy means a positive situation for teachers. Teacher self-efficacy belief improves teachers' instructional behaviors and positively affects students' motivation levels and academic achievement (Klassen & Chiu, 2010). In addition, self-efficacy belief affects teachers' teaching quality, and sustainability of it (Erdem & Demirel, 2007). Teachers with high self-efficacy are more enthusiastic, energetic, and volunteer to allow new methods and techniques to solve classroom issues (Mojavezi & Tamiz, 2012). Besides, we can claim that teachers with high self-efficacy can respond to students' social, cognitive, and affective needs, be more diligent in solving the problems encountered, be more willing to apply new teaching methods and techniques and be more self-sacrificing and enthusiastic in performing classroom activities.

Professional Satisfaction

In addition to teachers' self-efficacy, other psychosocial factors such as job satisfaction, relationships, interaction with colleagues, and collaboration with stakeholders are also efficient in the development of teachers' attitudes and performances (Demirtaş, 2010; Ho & Au, 2006). Professional satisfaction is defined as the combination of positive and negative judgments of an individual about the profession (Cerit, 2009). Put in a different way, professional satisfaction is employees' attitudes towards the profession as a result of a personal evaluation of the conditions of the profession and the acquirements from the profession. According to Hoy (2007), teachers' professional satisfaction includes positive emotions, expectations, and perceptions towards the instruction process and learning environment. Teachers' professional satisfaction stems from the positive contributions to students' academic and social developments, rather than the financial opportunities and acquirements offered by their profession (Bogler, 2002), because students are the output that teachers develop as a result of the instructional process. Besides, working conditions, quality of job, decent salary, the possibility of promotion, and organizational atmosphere are the environmental factors affecting teachers' professional satisfaction (Taşdan & Tiryaki, 2010).

Teachers' professional satisfaction may be a significant concept in the quality of instruction. Previous studies revealed that teachers with high-level professional satisfaction have higher motivation levels (Ololube, 2006), better performances (Chamundeswari, 2013), and a sense of belonging to the profession (Skaalvik & Skaalvik, 2010) compared to teachers with low levels of professional satisfaction. In addition, teachers with high professional satisfaction are more successful in solving classroom problems, time management, and contributing to the personal development of students (Kıran & Sungur, 2018). Therefore, teachers' professional satisfaction may be considered a significant concept concerning its direct effect on the quality of education.

Purpose of the Study

The teaching profession is influenced both by the professionalism that the profession requires, and many external factors. School climate perception is one of these external factors (Uline, Miller & Tschannen-Moran, 1998). If teachers love and adopt the school and perform with positive emotions, this sets a positive climate in the school, and in turn, this positive climate increases teachers' professional motivation and performance. School climate is an organizational concept that affects and is affected by all stakeholders in the school, including administrators, teachers, and students. On the other hand, teachers' self-efficacy beliefs and professional

satisfaction are necessary preconditions for effective and efficient instructional process. Therefore, teachers should have adequate self-efficacy and professional satisfaction for the quality of education.

Today, schools' goals are not only to provide quality education and instruction but also to enable an optimal working environment for teachers (O'Neill, 2000). Previous literature tells us that in schools that developed a positive climate, teachers exhibit high performance, and so students' positive behaviors and academic achievements increase (Acosta, 2002; Bektaş & Nalçacı, 2013; Reynolds, Lee, Turner, Bromhead & Subasic, 2017). Self-efficacy belief and professional satisfaction are the significant factors affecting teachers' performance, and can also be affected by the school environment. Therefore, it has been seen as important to examine the relationship between these key concepts which are preconditions for an effective instructional process. In addition, when we checked out the previous literature, we found many studies related to these concepts, but we realized that the relationship between these concepts has not been adequately studied. Thus, the current study aimed to examine the relationship between school climate, teacher self-efficacy, and professional satisfaction. This case makes this study unique. To this end, the following research questions were tried to be answered:

1. What is the level of teachers' self-efficacy, professional satisfaction, and school climate perceptions?
2. Do teachers' school climate perceptions, self-efficacy, and professional satisfaction levels differ according to demographic characteristics?
3. What is the relationship between school climate and teachers' self-efficacy beliefs?
4. What is the relationship between school climate and teachers' professional satisfaction?
5. What is the relationship between teachers' self-efficacy belief and professional satisfaction?

METHOD

Research model

The current study was designed in a correlational survey model based on the quantitative research paradigm.

Research sample

The universe of the study consists of teachers working in kindergarten, primary, secondary and high schools in a city in the central black sea region of Turkey for the 2020-2021 academic year. The sample consists of 397 teachers who work at the city center and voluntarily participated in the study. The proportional cluster sampling method, one of the probability sampling techniques, was used to determine the sample. This sampling method aims to determine the subgroups in the population and include them in the sample to the extent that they represent the universe. Since this sampling method ensures that all subgroups representing the universe are included in the sample, enables valid and generalizable statistical inferences (Henderson & Sundaresan, 1982). A total of 168 educational institutions serve the city center, including 17 kindergartens, 75 primary schools, 48 middle schools, and 28 high schools. Among a total of 168 educational institutions 3 kindergartens, 8 primary schools, 5 secondary schools, and 3 high schools were chosen randomly. The sample consists of 397 teachers who worked at these randomly selected schools, and volunteered to participate in the study. The demographic features of the participants are shown in Table 1.

Table 1. Demographic Features of the Participants

Variables		*f*	%
Gender	Male	196	49.4
	Female	201	50.6
Teaching Experience	1-5 Years	78	19.5
	6-10 Years	102	25.7
	11-20 Years	99	24.6
	20+ Years	100	25.2
Academic Degree	Bachelor	296	74.5
	Postgraduate	101	25.5
Teaching Level	Kindergarten	81	20.0
	Primary School	114	28.7
	Secondary School	103	25.9
	High School	99	24.4

Research Instruments and Procedure

A “Personal Information Form”, “Comprehensive Assessment of School Environment”, “Teachers’ Sense of Efficacy Scale” and “Job Satisfaction Questionnaire” were used in the data collection procedure.

Demographic Information Form

A personal information form developed by the researcher was used to determine participants' demographic features such as gender, teaching experience, academic degree, and training level.

Comprehensive Assessment of School Environment

Comprehensive Assessment of School Environment (CASE), developed by Nebraska University and West Michigan University in 1982 and adapted to Turkish by Acarbay (2006), was used to measure teachers' school climate perceptions. The scale consisting of 33 items is a 5-point Likert type and scored between 1 (Strongly disagree) and 5 (Strongly agree). According to the results of exploratory factor analysis, the scale consists of 6 factors: teacher-student relationship (12 items, 1-12), security and regularity (6 items, 13-18), administration relationship (3 items, 19-21), student behavior (4 items, 22-25), peer relations (4 items, 26-29) and community and school relations (4 items, 30-33). The minimum score that could be obtained from the scale is 33 (1.00), the maximum score is 165 (5.00) and the average score of the scale is 99 (3.00). A high score obtained from the scale indicates a positive school climate. As a result of the validity and reliability study, the Cronbach Alpha coefficient was calculated as .94 for the entire scale. For sub-factors, the Cronbach Alpha coefficient is calculated at .84 for teacher-student relationship, .84 for security and regularity, .83 for administration relationship, .81 for student behavior, .85 for peer relations, and .82 for community and school relations (Acarbay, 2006). In the current study, the Cronbach Alpha coefficient was calculated at .87 for all measurements, indicating high score reliability.

Teachers' Sense of Efficacy Scale

Teachers' Sense of Efficacy Scale (TSES), which was created by Tschannen-Moran and Woolfolk-Hoy (2001) and adapted to Turkish by Çapa, Çakıroğlu, and Sarıkaya (2005), was used to examine teachers' self-efficacy beliefs. The scale consists of 24 items in a 9-point Likert type and scored between 1-2 (insufficient), 3-4 (less sufficient), 5 (somewhat sufficient), 6-7 (quite sufficient), and 8-9 (very sufficient). In the factor analysis, it was seen that the scale consists of three factors: Efficacy in Student Engagement (ESE) (1, 2, 4, 6, 9, 12, 14, 22), Efficacy in Instructional Strategies (EIS) (7, 10, 11, 17, 18, 20, 23, 24) and Efficacy in Classroom Management (ECM) (3, 5, 8, 13, 15, 16, 19, 21). The minimum score that could be obtained from the scale is 24, the maximum score is 216 and the average score of the scale is 120 (M=5.00). A high score obtained from the scale indicates a positive self-efficacy level. In the validity and reliability study conducted with 628 participants, the alpha values of the sub-factors of the scale were calculated as ESE= .82, EIS= .86, and ECM= .84 (Çapa, Çakıroğlu & Sarıkaya, 2005). In the current study, the alpha was calculated at .81 for all measurements, indicating high score reliability.

Job Satisfaction Questionnaire

The Job Satisfaction Questionnaire (JSQ) was developed by Hackman and Oldham (1975) and adapted to Turkish by Silah (2002). Later, the questionnaire was applied to teachers, and validity and reliability study was performed by Taşdan (2008). The questionnaire consisting of 14 items is in a 5-point Likert type and scored between 1 (never satisfies me) and 5 (makes me very satisfied). The minimum score that could be obtained from the JSQ is 14, the maximum score is 70 and the average score of the scale is 42 (M=3.00). A high score obtained from the questionnaire shows a high level of job satisfaction for teachers. According to Taşdan's (2008) validity and reliability study, Cronbach-Alpha internal consistency coefficient was calculated at 0.95 for the whole questionnaire. In the current study, the alpha was calculated at .89 for all measurements, indicating high score reliability.

Data analysis

One of the assumptions for performing parametric tests in the analysis is the normal distribution of the data (Buyukozturk, 2015). Therefore, in the current study, before starting the data analysis process, all data obtained have been tested by the Shapiro-Wilk test to check for normal distribution. The other main assumption for normal distribution is to look at the kurtosis and skewness values of the data. The data obtained from the CASE, the TSES, and the JSQ were close to normal distribution since the kurtosis and skewness values were between -1 and +1, and according to the Shapiro-Wilk test results ($p>.05$) (Buyukozturk, 2015). Therefore, we decided to perform parametric tests in the analysis. Descriptive statistics such as frequency, percentage, arithmetic mean, and standard deviation were used to describe participants' demographic characteristics (gender, teaching experience, academic degree, and teaching level). In addition, procedural statistics such as independent samples t-test for gender and academic degree variables, one-way variance analysis (ANOVA) for occupational experience and teaching level

variables, and regression analysis for the relations of the determining variables were performed. All results were interpreted in p<.05 significance level.

Research ethics

Ethical issues were taken into consideration in the current study. The permit application was made to the Social and Human Sciences Research Ethics Committee of the Tokat Gaziosmanpaşa University, and after the approval (Date: 24.11.2020, Number: 33490967-44/ E-13516), the study was conducted. The researcher directly reached the teachers included in the study group, gave information about the purpose of the study, and applied the instruments. In addition, during the research, it was ensured that there was no physical or psychological harm to the participants. They also were assured that the research data would be kept in confidence.

FINDINGS

Findings Regarding the First Research Question

To reveal teachers' self-efficacy, professional satisfaction, and school climate perceptions, the mean scores obtained from the scales were analyzed and summarized (Table 2).

Table 2. Descriptive Statistics Regarding the Determined Variables

	N	Min	Max	$\bar{X}$	*Sd*	Skewness	Kurtosis
CASE Total	397	1.15	4.94	3.47	.64	-.22	.78
Teacher-student Relationship	397	1.17	5.00	3.77	.71	-.56	.71
Security and Regularity	397	1.33	5.00	3.57	.74	-.16	-.15
Administration Relationship	397	1.00	5.00	3.03	1.06	.065	-.92
Student Behavior	397	1.00	5.00	3.13	.93	.19	-.69
Peer Relations	397	1.00	5.00	3.08	.96	.088	-.72
Community and School Relations	397	1.00	5.00	3.49	.83	-.098	-.49
TSES Total	397	2.54	4.83	3.87	.42	-.164	.44
ESE	397	2.25	4.88	3.78	.47	-.32	.14
EIS	397	2.50	5.00	3.93	.49	-.12	.52
ECM	397	2.63	4.88	3.89	.50	-.19	-.42
JSQ Total	397	1.71	4.79	3.32	.64	.059	-.38

As seen in Table 2, the minimum score obtained from the CASE was 1.15, the maximum score was 4.94, and the mean score of the CASE was calculated as $\bar{X}$=3.42 (*Sd*=.64). Considering that the average score that can be obtained from the CASE is $\bar{X}$=3, we can say that teachers' school climate perceptions were in a moderate level. Since the mean score ($\bar{X}$=3.87) obtained from TSES is close to the average score ($\bar{X}$=3) of the scale, it can be said that the self-efficacy levels reported by the teachers were at a moderate level. Similarly, since the mean score ($\bar{X}$=3.32) obtained from JSQ was quite close to the average score ($\bar{X}$=3) of the scale, teachers' professional satisfaction levels were at a moderate level.

Findings Regarding the First Research Question

Examining if teachers' school climate perceptions, teacher self-efficacy beliefs, and professional satisfaction levels differ according to demographic features was the second research question. To examine if teachers' school climate perceptions, self-efficacy beliefs, and professional satisfaction levels differ according to the gender variable, independent samples t-test was performed on the mean scores of CASE, TSES, JSQ, and dimensions (Table 4).

Table 3. T-test Analysis of Gender Variable for CASE, TSES, and JSQ

	Groups	*N*	$\bar{X}$	*Sd*	*t*	*Df*	*p*
CASE Total	Female	201	3.58	.58	-2.70	193	.008*
	Male	196	3.34	.68			
Teacher-Student Relationship	Female	201	3.89	.61	-2.71	193	.007*
	Male	196	3.62	.78			
Security and Regularity	Female	201	3.69	.67	-2.32	193	.021*
	Male	196	3.44	.80			
Administration Relationship	Female	201	3.09	1.03	-.92	193	.360
	Male	196	2.95	1.08			
Student Behaviours	Female	201	3.25	.97	-1.79	193	0.74

	Male	196	3.00	.86			
Peer Relationship	Female	201	3.28	.93	-3.18	193	.002*
	Male	196	2.84	.96			
Community and School Relations	Female	201	3.51	.77	-.352	193	.725
	Male	196	3.47	.88			
TSES Total	Female	201	3.89	.46	-748	193	.455
	Male	196	3.84	.39			
Efficacy in Student Engagement	Female	201	3.82	.43	-126	193	.209
	Male	196	3.74	.52			
Efficacy in Instructional Strategies	Female	201	3.94	.44	-301	193	.764
	Male	196	3.92	.51			
Efficacy in Classroom Management	Female	201	3.89	.46	-399	193	.691
	Male	196	3.87	.51			
JSQ Total	Female	201	3.39	.62	-1.503	193	.135
	Male	196	3.25	.66			

*p<05

As seen in Table 4, CASE mean score of the female teachers was $\bar{X}$=3.58 (*Sd*=.58) and the males' was $\bar{X}$=3.34 (*Sd*=.68). Results of the t-test revealed that the mean scores of teachers on CASE were statistically different according to the gender variable, *t*(193)=-2.70, *p*<.05. For "Teacher-Student Relationship" sub-factor, females' mean score ($\bar{X}$=3.89, Sd=.58) was found to be statistically higher than males' ($\bar{X}$=3.62, *Sd*=.78), *t*(193)=-2.71, *p*<.05. For "Security and Regularity" sub-factor, females' mean score ($\bar{X}$=3.69, *Sd*=.67) was found to be statistically higher than males' ($\bar{X}$=3.44, *Sd*=.80), *t*(193)=-2.32, *p*<.05. For "Peer Relations" sub-factor, females' mean score ($\bar{X}$=3.28, Sd=.93) was found to be statistically higher than males' ($\bar{X}$=2.84, *Sd*=.96), *t*(193)=-3.18, *p*<.05. And, it is found that, "Administration Relationship", "Student Behaviors" and "Community and School Relations" sub-factors did not differ statistically according to the gender variable (*p*>.05). Teachers' self-efficacy belief and professional satisfaction levels did not statistically differ according to their genders (*p*>.05).

To examine if teachers' school climate perceptions, self-efficacy beliefs, and professional satisfaction levels differ according to their occupational experiences, an ANOVA test was performed on the mean scores obtained from related scales (Table 4).

Table 4. ANOVA Analysis of Teaching Experience Variable

		Sum of Squares	*df*	Mean Square	*F*	*p*
CASE Total	Between Groups	.944	3	.315	.777	.508
	Within Groups	77.401	393	.405		
	Total	78.345	394			
Teacher-Student Relationship	Between Groups	0.901	3	.300	.599	.616
	Within Groups	95.732	393	.501		
	Total	96.633	394			
Security and Regularity	Between Groups	.614	3	.205	.364	.779
	Within Groups	107.502	393	.563		
	Total	108.116	394			
Administration Relationship	Between Groups	2.371	3	.790	.700	.553
	Within Groups	215.623	393	1.129		
	Total	217.994	394			
Student Behaviours	Between Groups	4.411	3	1.470	1.736	.161
	Within Groups	161.743	393	.847		
	Total	166.154	394			
Peer Relationship	Between Groups	3.333	3	1.111	1.188	.316
	Within Groups	178.638	393	.935		
	Total	181.971	394			
Community and School Relations	Between Groups	1.100	3	.367	.531	.661
	Within Groups	131.770	393	.690		
	Total	132.870	394			
TSES Total	Between Groups	.210	3	.070	.384	.765
	Within Groups	34.880	393	.183		
	Total	35.091	394			

ESE	Between Groups	.825	3	.275	1.228	.301
	Within Groups	42.771	393	.224		
	Total	43.596	394			
EIS	Between Groups	.111	3	.037	.164	.921
	Within Groups	43.024	393	.225		
	Total	43.134	394			
ECM	Between Groups	.111	3	.037	.157	.925
	Within Groups	44.947	393	.235		
	Total	45.057	394			
JSQ Total	Between Groups	1.194	3	.398	.971	.408
	Within Groups	78.349	393	.410		
	Total	79.544	394			

The ANOVA test results given in Table 5 showed that teachers' school climate perceptions, self-efficacy, and professional satisfaction levels were not statistically different according to their teaching experiences (p>.05).

To examine if teachers' school climate perceptions, self-efficacy beliefs, and professional satisfaction levels differ according to the academic degree variable, independent groups t-test was performed on the mean scores of related scales. The results revealed that teachers' school climate perceptions, self-efficacy belief, and professional satisfaction levels were not statistically different according to their academic degrees (p>.05), (Table 5).

Table 5. T-test Analysis of Academic Degree Variable

	Groups	*N*	$\bar{X}$	*Sd*	*t*	*Df*	*p*
CASE Total	Bachelor	296	3.48	.62	.526	193	.600
	Postgraduate	101	3.42	.68			
Teacher-Student Relationship	Bachelor	296	3.78	.70	.719	193	.473
	Postgraduate	101	3.70	.71			
Security and Regularity	Bachelor	296	3.60	.74	1.156	193	.247
	Postgraduate	101	3.46	.76			
Administration Relationship	Bachelor	296	3.03	1.02	-.167	193	.868
	Postgraduate	101	3.05	1.16			
Student Behaviors	Bachelor	296	3.13	.91	-.121	193	.903
	Postgraduate	101	3.15	.98			
Peer Relationship	Bachelor	296	3.08	.91	.279	193	.781
	Postgraduate	101	3.04	1.14			
Community and School Relations	Bachelor	296	3.49	.83	.762	193	.921
	Postgraduate	101	3.50	.82			
TSES Total	Bachelor	296	3.86	.62	-.572	193	.521
	Postgraduate	101	3.60	.68			
ESE	Bachelor	296	3.78	.74	-.192	193	.844
	Postgraduate	101	3.79	.80			
EIS	Bachelor	296	3.92	.86	-.435	193	.664
	Postgraduate	101	3.96	.92			
ECM	Bachelor	296	3.86	.98	-.828	193	.409
	Postgraduate	101	3.93	.104			
JSQ Total	Bachelor	296	3.33	.110	.411	193	.681
	Postgraduate	101	3.29	.116			

To examine if teachers' school climate perceptions, self-efficacy, and professional satisfaction levels differ according to the teaching level variable, an ANOVA test was performed on mean scores obtained from each scale and dimension (Table 6).

Table 6. ANOVA Analysis of Teaching Level Variable

		Sum of Squares	*Df*	Mean Square	*F*	*p*	Significant Difference
CASE Total	Between Groups	9.67	3	3.022	8.332	.000*	K>PS, K>SS, K> HS
	Within Groups	69.28	191	.36			
	Total	78.35	194				
Teacher-Student Relationship	Between Groups	8.91	3	2.939	6.465	.000*	K>PS, K>SS, K> HS
	Within Groups	87.72	191	.46			
	Total	96.63	194				
Security and Regularity	Between Groups	4.79	3	1.596	2.950	.034*	K> HS
	Within Groups	103.330	191	.54			
	Total	108.119	194				
Administration Relationship	Between Groups	27.26	3	9.086	9.099	.000*	K>SS, PS>SS, HS>SS
	Within Groups	190.74	191	.99			
	Total	218.00	194				
Student Behaviors	Between Groups	16.48	3	5.493	7.010	.000*	K>SS, K> HS,
	Within Groups	149.67	191	.78			
	Total	166.15	194				
Peer Relationship	Between Groups	26.23	3	8.745	10.73	.000*	K>PS, K> HS, SS>HS
	Within Groups	155.74	191	.815			
	Total	181.97	194				
Community and School Relations	Between Groups	10.60	3	3.53	5.52	.001*	K>PS, K>SS, K> HS
	Within Groups	122.27	191	.64			
	Total	132.87	194				
TSES Total	Between Groups	2.08	3	.693	4.012	.008*	K> HS
	Within Groups	33.01	191	.173			
	Total	35.091	194				
ESE	Between Groups	3.26	3	1.085	5.137	.002*	K> HS
	Within Groups	40.34	191	0.21			
	Total	43.60	194				
EIS	Between Groups	2.40	3	.80	3.756	.012*	K> HS
	Within Groups	40.73	191	.23			
	Total	43.13	194				
ECM	Between Groups	1.91	3	.64	2.832	.040*	K> HS
	Within Groups	43.14	191	.23			
	Total	45.05	194				
JSQ Total	Between Groups	14.22	3	4.74	13.864	.000*	K>PS, SS, HS SS>HS
	Within Groups	65.32	191	.342			
	Total	79.54	194				

*$p<.05$

As shown in Table 6, it was found that teachers' school climate perceptions significantly differed according to their teaching levels. Sheffee test results revealed that, while kindergarten teachers' school climate perceptions were found to be statistically higher than primary, secondary and high school teachers' ($F=8.33$, $p<.01$), there was no significant difference between other teaching levels ($p>.05$). For "Teacher-Student Relationship" dimension of CASE, while kindergarten teachers' mean scores were found to be statistically higher than those of primary, secondary and high school teachers ($F=6.46$, $p<.01$), there was no significant difference between other teaching levels ($p>.05$). For "Security and Regularity" dimension of CASE, while kindergarten teachers' mean scores were found to be statistically higher than high school teachers ($F=2.95$, $p<.05$), there was no significant difference between other teaching levels ($p>.05$). For "Administration Relationship" dimension of CASE, while secondary school teachers' mean scores were found to be statistically lower than those of kindergarten, primary and high school teachers ($F=9.09$, $p<.01$), there was no significant difference between other teaching levels ($p>.05$). For "Student Behaviours" dimension of CASE, while kindergarten teachers' mean scores found to be statistically higher than those of secondary and high school teachers ($F=7.01$, $p<.01$), there was no significant difference between other teaching levels ($p>.05$). For "Peer Relationship" sub-factor of CASE, kindergarten teachers' mean scores were found to be statistically higher than those of secondary and high school teachers, high school teachers' mean score was statistically higher than secondary school teachers' ($F=7.01$, $p<.01$). And for "Community and School Relations" dimension of CASE, while kindergarten teachers' mean scores found to be statistically higher than those of primary, secondary and high school teachers ($F=5.52$, $p<.01$), there was no significant difference between other teaching levels ($p>.05$). Teachers' reported self-efficacy beliefs differed statistically according to

their teaching levels. Kindergarten teachers' self-efficacy beliefs were found to be statistically higher than those of primary, secondary, and high school teachers (F=4.02, p<.01). Teachers' professional satisfaction levels statistically differed according to their teaching levels. Kindergarten teachers' professional satisfaction levels were found to be statistically higher than those of primary, secondary, and high school teachers (F=13.864, p<.01). Secondary school teachers' professional satisfaction levels were statistically higher than high school teachers' (F=13.864, p<.01).

Findings Regarding the Third Research Question

To examine the relationship between teachers' school climate perceptions and self-efficacy, a multi-regression analysis was performed on the mean scores obtained from each scale and dimension (Table 7).

Table 7. Regression Analysis Results Regarding the Teacher Self-Efficacy Belief and School Climate

Dependent Variable=Teacher Self-Efficacy					
Variable	B	Se	β	t	p
Constant	3.207	.169		18.927	.000
Teacher-Student Relationship	.071	.059	.118	1.193	.234
Security and Regularity	.005	.058	.009	.086	.931
Administration Relationship	.020	.036	.050	.553	.581
Student Behaviours	.102	.050	.222	2.038	.043*
Peer Relationship	.060	.042	.136	1.416	.158
Community and School Relations	-.053	.046	-.103	-1.143	.254

R= .334; R^2=.122; *F* (24.251); *p*=.000, **p*<.05

As seen in Table 7, school climate was determined to be a significant predictor of teacher self-efficacy belief (R=.350; R2=.122; p<.01). A weak, positive and significant relationship was found between teacher self-efficacy and school climate. According to this finding, school climate predicts teacher self-efficacy belief by 12%. Standardized regression coefficients (β) showed that the predictive dimension in explaining teacher self-efficacy belief is Student Behaviors" (R2=.222). While, the "Student Behaviors" sub-factor of CASE was found to be a significant predictor of teacher self-efficacy (p<.05), other sub-factors are not significant predictors (p>.05).

Findings Regarding the Forth Research Question

To examine the relationship between teachers' school climate perceptions and professional satisfaction levels, a multi-regression analysis was performed on the mean scores obtained from each scale and dimensions (Table 8).

Table 8. Regression Analysis Results Regarding the School Climate and Professional Satisfaction

Dependent Variable=Professional Satisfaction					
Variable	B	Se	β	t	p
Constant	1.207	.219		5.522	.000
Teacher-Student Relationship	.197	.077	.218	2.575	.011*
Security and Regularity	.117	.075	.137	1.566	.119
Administration Relationship	.027	.046	.045	.591	.556
Student Behaviors	-.012	.065	-.017	-.181	.857
Peer Relationship	.110	.054	.167	2.026	.044*
Community and School Relations	.162	.060	.210	2.707	.007*

R= .594; R^2=.352; *F* (104.960); *p*=.000, **p*<.05

As seen in Table 8, school climate was determined to be a significant predictor of teachers' professional satisfaction (R=.594; R2=.352; p<.01). A medium, positive and significant relationship was found between school climate perception and teachers' professional satisfaction. According to this finding, school climate predicts teachers' professional satisfaction by 35%. Standardized regression coefficients (β) showed that in order of priorities of the predictive dimensions in explaining teachers' professional satisfaction were "Teacher-Student Relationship" (R2=.218), "Community and School Relations" (R2=.210), "Peer Relationship" (R2=.167), "Security and Regularity" (R2=.137), "Administration Relationship" (R2=.045), and "Student Behaviours" (R2=.-.017). While the "Community and School Relations", "Teacher-Student Relationship" and "Peer Relationship" dimensions of CASE were found to be significant predictors of teacher professional satisfaction (p<.01, p<.05), other sub-factors were not significant predictors (p>.05).

Findings Regarding the Fifth Research Question

To examine the relationship between teachers' teacher self-efficacy beliefs and professional satisfaction, a multi-regression analysis was performed on the mean scores obtained from each scale and dimensions (Table 9).

Table 9. Regression Analysis Results Regarding the Teacher Self-Efficacy and Professional Satisfaction

Dependent Variable=Professional Satisfaction					
Variable	*B*	*Se*	*β*	*t*	*p*
Constant	1.924	.409		4.703	.003
TSES Total	-1.303	1.208	-.866	-1.079	.028*
ESE	.753	.432	.557	1.743	.083
EIS	.321	.391	.236	.821	.413
ECM	.602	.456	.453	1.319	.189

R= .286; R^2=.082; F (4.217); p=.003, *p<.05

As seen in Table 10, there was a significant, positive, and weak relationship between teacher self-efficacy and professional satisfaction (R=.286; R^2=.082; p<.01). Teacher self-efficacy predicts professional satisfaction by 8%. Standardized regression coefficients (β) showed that in order of priorities of the predictive dimensions in explaining the teacher professional satisfaction is "Efficacy in Student Engagement" (R^2=.557), "Efficacy in Classroom Management" (R^2=.453) and "Efficacy in Instructional Strategies" (R^2=.236).

Discussion & Conclusion

The current findings revealed that teachers' school climate perceptions were at a medium level. This result shows similarities to the findings of previous literature (Collie, Shapka & Perry, 2012; Mert & Özdemir, 2019; Mitchell, Bradshaw & Leaf, 2010; Sezgin & Kılınç, 2011). Contrary to this result, Sutherland (1994) stated that teachers' school climate perceptions were at a high level. School climate is a psychological concept that depends on the relation and interaction of school stakeholders, the physical, social, and affective environment of the school, and student achievement. School climate may differ for every school because every school has a different perceived ambiance and atmosphere. Since the school climate perception is not a constant concept and may differ for any teacher and school conditions, it can be considered the expected situation to obtain different findings in the related literature.

The analysis of the scales showed a difference in teachers' school climate scores by gender. Female teachers' perceptions were found to be statistically higher than male teachers on the "Teacher-Student Relationship", "Security and Regularity" and "Peer Relations" dimensions. Previous literature tells us that gender is not a predictive variable in school climate (Baykal, 2007; Karacaoğlu, 2008; La Salle, McCoach, & Meyers, 2021; Özden, 2009). Because gender is not a distinctive and selective feature in the teaching profession (Sezgin & Kılınç, 2011). In addition, school climate is a concept shared by all teachers, regardless of gender. Thus, it can be considered ordinal for female and male teachers working in the same school to have similar school climate perceptions. However, the current results are quite different from the general trend in the literature. In Turkey, kindergartens' opportunities and school environments are more positive than in other schools (Ayyıldız & Kahraman, 2019). Many studies revealed that the physical opportunities of the school help to set a positive school culture and climate and affect teachers' perceptions of the school (Al-Dababneh, Al-Zboon & Ahmad, 2019; Gök, 2019; Rhee, McQuillan, Chen & Atis, 2017). We know that the majority of the teaching staff of kindergartens are female teachers. The majority of the teachers working for kindergartens are females. Therefore, we conclude that the physical environment of the school is effective on the female teachers' high-level school climate perceptions. On the other hand, the sample of this study was selected not from a single school but from many schools such as kindergarten, primary, middle and high schools. We conclude that the usage of various sample groups is effective in the emergence of this result. So, this result of the current study is considered significant in terms of bringing new findings to the related literature.

The analysis of the scales did not find a difference in teachers' school climate perceptions, self-efficacy beliefs, and professional satisfaction scores by teaching experience and the academic degree of teachers. In other words, teachers with different teaching experiences and academic degrees have similar school climate perceptions, self-efficacy beliefs, and professional satisfaction levels. Kavgacı (2010), Oder and Eisenschmidt (2018), Sezgin and Kılınç (2011), and Tezci (2001) found similar findings in their studies. However, it is also seen that different results have been reported on this subject. For example, Baykal (2007) stated that teachers with low occupational experiences tend to perceive school climate more positively than teachers with high teaching experiences. He pointed out that, while younger teachers are more motivated and eager in school, older teachers may become insensitive about the school culture because they have become more familiar with the operation and processes in the school.

Another finding of the current study pointed out that teachers' school climate perceptions statistically differed according to their training level. In general, kindergarten teachers' perceptions were found to be statistically higher than primary, secondary, and high school teachers. According to this finding, we can conclude that kindergarten teachers have the highest school climate perceptions and that primary school, high school, and secondary school teachers follow them respectively. In addition, kindergarten teachers' reported teacher self-efficacy belief and professional satisfaction levels were also found to be higher than other school teachers. The emergence of this result can be explained by the fact that the physical and social facilities of kindergartens are better than other schools. In Turkey, the average classroom size of kindergartens is lower than in other schools (TUIK, 2019). In addition, in kindergartens, the parent-teacher-student association, which is one of the environmental factors affecting school culture, works more actively than in other schools (Babaroğlu, 2018). That is because students who started kindergarten are more supported by their families since they are in the first years of their school life. This situation decreases gradually from kindergarten to high school as the teaching level increases. We concluded that kindergarten teachers have higher school climate perceptions, teacher self-efficacy beliefs, and professional satisfaction levels because the kindergarten school environments are more comfortable than other schools and more supported by parents. Many findings are overlapping with the results in the previous literature (Johnson, Johnson & Zimmerman, 1996; Günbayı, 2007; Koth, Bradshaw & Leaf, 2008; Meristo & Eisenschmidt, 2014). In some studies, it was stated that training level is not a predictor of school climate, contrary to the current study findings (Baykal, 2007; Karacaoğlu, 2008; Sezgin & Kılınç, 2011).

We found that there was a medium, positive and significant relationship between teachers' school climate perceptions and self-efficacy beliefs. We also found a medium, positive and significant relationship between teachers' school climate perceptions and professional satisfaction. School climate predicts teacher self-efficacy belief by 12%, and teachers' professional satisfaction by 35%. Tschannen-Moran (2011) identified teacher professionalism as an effective variable to explain teachers' school climate perceptions. The current result has also supported this variable as a factor that determines school climate. According to our results, school climate is much more effective in predicting professional satisfaction than in predicting teacher self-efficacy belief. In general, teacher self-efficacy is related to the belief that teachers have the instructional knowledge and skills necessary to ensure all students learn. We can conclude that teacher self-efficacy is more related to the teaching process than to the conditions of the educational institution because the main objective of the teacher is to teach, regardless of the educational institution. Therefore, teachers are expected to perform similar performances in any school.

However, professional satisfaction is more related to the workplace as it covers the personal judgments of an employee about the profession. Professional satisfaction for teachers is related to communication, governance, management, and opportunities at school, as well as the general conditions of the teaching profession. Communication, administrative relations, and opportunities are known to be effective factors in the formation of the organizational culture and climate in schools. In this respect, we concluded that school climate is more effective in predicting teachers' professional satisfaction than predicting teacher self-efficacy. In previous literature, there are many studies in line with the current results. For example, Tashakkori and Taylor (1995) reported a noteworthy association between school climate and professional satisfaction; however, the relationship between climate and self-efficacy was found to be limited. Aldridge and Fraser (2016) found a significant relationship between school climate, professional satisfaction, and teacher sense of efficacy but they did not explain the amount of the relation. Treputtharat and Tayiam (2014) pointed out that the effect of school climate on teachers' professional satisfaction was at a high level. Collie, Shapka, and Perry (2012) stated that two school climate factors, i.e., "teachers' perceptions of students' motivation" and "behavior", had the most powerful impact to predict teaching efficacy and professional satisfaction. Malinen and Savolainen (2016), in their studies designed with a structural equation model, revealed that school climate had a positive effect, partly mediated by self-efficacy, on professional satisfaction. In some studies, findings that do not overlap with the current study were also reported. For example, Lacks' (2016) findings did not provide evidence of a significant relationship between school climate and teacher self-efficacy.

Lastly, there was a significant, positive, and weak relationship between teacher self-efficacy and professional satisfaction. Teacher self-efficacy was found to be a weak predictor of professional satisfaction (8%). When we reviewed the international previous literature, we realized that teacher self-efficacy is an important predictor of teachers' professional satisfaction (Aldridge & Fraser, 2016; Ismayilova & Klassen,2019; Klassen & Chiu, 2010; Viel-Ruma, Houchins, Jolivette & Benson, 2010; Zakariya, 2020). Unlike the international literature, the amount of this relationship was found to be low in the current study. Teachers' professional satisfaction is not only related to the school environment, but also to working conditions such as salary, personal development opportunities, and promotion (Türkoğlu, Cansoy & Parlar, 2017). Personal rights and economic opportunities of

teachers in Turkey are not yet as developed as in the OECD and the European Union countries (Göker & Gündüz, 2017; Manolova-Yalçın & Hanoğlu, 2020; Süngü, 2012). Therefore, in the current study, we concluded that the basic reason why teacher self-efficacy is weak in predicting professional satisfaction is due to the working conditions of teachers rather than school conditions.

Recommendations

With the guidance of the results, the following recommendations are presented:

According to the results, teachers' school climate perceptions were at a medium level. In this regard, to improve the climate of schools, teachers, administrators, students and parents have to fulfill their responsibilities to keep the quality of the learning environment, and communication between the stakeholders always effective and strong.

Female teachers had more positive school climate perceptions than male teachers in the "Teacher-Student Relationship" and "Peer Relations" dimensions. According to this result, we can conclude that female teachers have better relations with both their students and peers. It is recommended that educational institutions and administrators should investigate the reasons for the inadequacy of corporate communication of male teachers, and take precautions to improve that.

It has been revealed that the perceived school climate levels of schools decrease as the teaching level increases. Therefore, we conclude that the physical conditions of secondary and high schools that affect school climate should be improved.

We observed that teachers' school climate perceptions had a direct relationship with their self-efficacy beliefs and professional satisfaction. School climate is particularly effective in predicting professional satisfaction. Considering that professional satisfaction is one of the factors affecting teacher performance, necessary precautions should be taken to develop the school climate in all schools.

The current study is limited to teachers as participants. The school climate concerns not only teachers but also all stakeholders of the school. Therefore, in further studies that focus on school climate, it may be useful to diversify study groups with students, teachers, and administrators. Lastly, the current study is limited to schools located in a certain location (Tokat City, Turkey). The generalizability of the results can be increased by performing similar studies in other cities and even across the country.

Statements of publication ethics

Ethical issues were taken into consideration in the current study. The permit application was made to the Social and Human Sciences Research Ethics Committee of the Tokat Gaziosmanpaşa University, and after the approval (Date: 24.11.2020, Number: 33490967-44/ E-13516), the study was conducted. The researcher directly reached the teachers included in the study group, gave information about the purpose of the study, and applied the instruments. In addition, during the research, it was paid attention that there was no physical or psychological harm to the participants. They also were assured that the research data would be kept in confidence.

Researchers' contribution rate

The author participated in every part of the research such as data collection, data analysis, and writing this document.

Conflict of interest

None.

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Psychological Inflexibility, Ruminative Thinking, Worry and Self- Compassion in Relation to College Adjustment

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Abstract

The mental health of college students has received more attention due to increase of psychological distress starting from the beginning of university life. Acceptance and Commitment Therapy (ACT) is one of the third wave Cognitive Behavioral approaches, focuses on behavior change by emphasizing acceptance and awareness with its core concept of psychological inflexibility. This study aimed to investigate the role of psychological inflexibility, rumination, worry and self-compassion on college adjustment by implementing structural equation modeling. 657 (486 female, 171 male) freshman students at a state university participated in the study. In terms of data collection tools, The University Life Scale, Acceptance an Action Questionnaire-II, the Ruminative Thought Style Questionnaire, The Penn State Worry Questionnaire and The Self-Compassion Scale were used. The results indicated that psychological inflexibility significantly predicted students' self-compassion, rumination, worry and college adjustment levels. On the other hand, the results also revealed that while self-compassion significantly predicted the college adjustment, rumination and worry levels did not significantly predicted the college adjustment of freshman students. Finally, while self compassion was a partial mediator in the relationship between psychological inflexibility and college adjustment, ruminative thinking and worry were not significant mediators. The discussions and implications of the study were presented, as well as suggestions for further studies.

Keywords: psychological inflexibility, ruminative thinking, worry, self-compassion, college adjustment

Psikolojik Katılık, Ruminatif Düşünme, Endişe ve Öz- Şefkatin Üniversiteye Uyum ile İlişkisi

Öz

Üniversitenin ilk yıllarından itibaren artan psikolojik zorluklardan dolayı üniversite öğrencilerinin ruh sağlığı daha fazla ilgi görmeye başlamıştır. Üçüncü dalga bilişsel davranışçı yaklaşımlardan birisi olan Kabul ve Kararlılık Terapisi (KKT), temel kavramı olan psikolojik esneklik ile davranış değişimine kabul ve farkındalık boyutuyla odaklanmaktadır. Bu çalışma psikolojik esneklik/katılık, ruminatif düşünme, endişe ve öz-şefkatin üniversiteye uyum üzerindeki rolünü yapısal eşitlik modellemesi ile araştırmayı amaçlamıştır. Bu araştırmaya bir devlet üniversitesinde birinci sınıfta öğrenim görmekte olan 657 (486 kadın, 171 erkek) öğrenci katılmıştır. Araştırmada veri toplama araçları olarak, Üniversite Yaşam Ölçeği, Kabul ve Eylem Formu-II, Ruminatif Düşünme Stili Ölçeği, Penn Eyalet Endişe Ölçeği, Öz-Şefkat Ölçeği kullanılmıştır. Araştırmanın bulguları psikolojik esneklik/katılığın öğrencilerin öz-şefkat, ruminatif düşünme, endişe ve üniversiteye uyum düzeylerini anlamlı bir şekilde yordadığını ortaya koymuştur. Diğer taraftan, bulgular ayrıca öz- şefkatin üniversiteye uyumu anlamlı bir şekilde yordadığını ancak ruminatif düşünme ve endişenin üniversiteye uyumu anlamlı olarak yordamadığını ortaya koymuştur. Son olarak, öz şefkatin psikolojik esneklik ile üniversiteye uyum arasında kısmi bir aracı etkiye sahip olduğu fakat ruminatif düşünme ve endişenin bu ilişkide anlamlı bir aracı rolünün olmadığı sonucuna ulaşılmıştır. Bu araştırmaya dair tartışma, sonuç ve gelecek çalışmalara dair öneriler sunulmuştur.

Anahtar Sözcükler: psikolojik katılık, ruminatif düşünme, endişe, öz şefkat, üniversiteye uyum

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INTRODUCTION

Beginning a new chapter in one's life means adapting to new information, challenges and experiences such as becoming a parent, changing jobs, or retiring from work (Morton et al., 2014), and the transition of a young adult's life from high school to college is no exception (Brooks & Dubois, 1995; Morton et al., 2014). Going to college is an important experience in a young adult's life as it represents a new lifestyle that is very different from high school. There is therefore no doubt that starting college for the first time can be a very stressful experience and is associated with various academic, personal, emotional and social difficulties (Brandy et al., 2015; Crede & Niehorster, 2012; Tao et al, 2000). Upcraft et al. (2005) suggest that students' first- year experience and adjustment in college can be affected by other, but still fairly indetermined personal, psychological, and environmental factors. The main challenges of the transition include adapting to an academic level that is way higher than that of high school (Johnston, 2010), homesickness (Thurber & Walton, 2012), changes in daily routines, time management, sleeping and eating routines (Semplonius & Willoughby, 2018). The challenges that arise from such a different and new environment, social and academic relationships can often be a cause of stress (Buote et al., 2007; Clinciu, 2013; Sasaki & Yamasaki, 2007). Adjustment to college life is therefore often associated with anxiety, depression, stress, anger, and even mental illness. Clinciu (2013) suggested that difficulties encountered during adjustment are among the major causes of students dropping out of college or sometimes even more severe results such as suicidal thoughts as the risk factors among university students increased after Covid-19 outbreak (Lazaro-Perez et al., 2023). Considering how stressful and demanding the transition process can be for freshman students, it is unsurprising that psychological distress, mostly expressed through depression and other symptoms of anxiety, represents a serious health-issue among all college students.

One of the main predictors of psychological distress and related problems for college students is rumination (Morrison & O'Connor, 2005), which shortly can be defined as passive and persistent thinking about a situation and usually creates an emotional distress (Sansone & Sansone, 2012). Rumination has been found to be strongly related to depression and loneliness in college students (Zawadzki et al., 2013), and this is particularly relevant for freshman students as they tend to have certain social and emotional difficulties during the adjustment period of college life. Furthermore, De-Chen's (2009) study of freshman college students indicated that rumination, self-esteem, and perfectionism are significantly predictors of the level of depressive symptoms that may occur. While both rumination and worry are two forms of repetitive thinking related to psychopathology, rumination represents the thoughts about the past (Nolen- Hoeksema et al., 2008), worry is more anxious apprehension or uncontrollable thoughts about the future (Borkovec, 1994). Segerstrom et al. (2000) found that rumination and worry are highly correlated and suggested that they should therefore be considered under the single umbrella term: "repetitive thought". Paolini et al. (2006) found that worry was considered as being an important factor that influences the adjustment process. In the past few decades there has been an expanding interest in studying ruminative thinking and worry with college students in relation to perfectionism (Harris et al. 2008), general depression, Covid-19 related depression (Kong et al. 2015; Luttenbacher, 2021), and procrastination (Constantin et al., 2018).

Apart from the repetitive thoughts as risk factors for Major Depressive Disorder (MDD) and anxiety (Nolen-Hoeksema, 2000), self-compassion can be considered as a protective factor for newcomers in college life. Self-compassion is simply defined by Neff (2011) as acting with a kind, understanding, and accepting way towards yourself when you are having a hard time due to experiencing problematic feelings and thoughts, or sometimes due to noticing something that you do not like about yourself. Self-compassion, in other words, is being open to suffering through experiencing all kinds of feelings and thoughts in a non-judgmental manner. Research reveals that individuals with high levels of self-compassion tend to be more psychologically fit, happy, and optimistic, as well as less anxious and depressed (Neff, 2009). Several studies have been conducted with college students on the relationship between self- compassion and various variables, including social and academic difficulties (Terry et al., 2013), procrastination, academic anxiety and motivation (Williams et al., 2008), physical and psychological well-being (Hall et al., 2013), and also personality traits (Neff & McGehee, 2010). As with many other psychological problems, the college adjustment process has a detrimental effect on freshmen in terms of uncertainties, fear of failure in academic and social life. However, there is no doubt that self-compassion skills play a helpful role for freshmen as a protective factor that allow them to cope with the difficulties that arise throughout the adjustment process. In this regard, Ekşi et al. (2022) found in a recent study that self-compassion was found to be a significant coping method with stress among Turkish university students. Another recent study with college students revealed that perceived stress was found to be negatively correlated with self-compassion and mindfulness, positively related to experiential avoidance (Martinez-Rubio et al., 2023).

Mental health problems including anxiety, depression, substance abuse and non-suicidal self-injury (NSSI) are common among college students (Blanco et al., 2008; Kiekens et al., 2023). In addition to these mental health issues, Covid-19 as a global threat, profoundly impacted college students' lives recently. Along with changes in physical settings, students had difficulties in terms of financial issues, social and emotional adversities, health, romantic relationships, and death throughout the pandemic (Fruehwirth et al., 2021; Han et al., 2021; Truchot et al., 2021). According to data revealed by UNESCO (2022), approximately 7 million higher education students affected the COVID 19 in Turkey. The detrimental impact of COVID 19 on college students was all the way from social isolation, fear, anxiety, and to general mental health (Duygulu et al. 2023).

Psychological inflexibility (PIF), which aims to explain psychopathology and human behavior from a functional contextualism perspective, is one psychological process that can be helpfully applied during college adjustment. PIF, the core concept of Acceptance and Commitment Therapy (ACT, Hayes et al., 1999), can be understood as being an antonym of the concept defined, i.e. being the process of being in the present moment without any defense. This means being a fully conscious human while at the same time adapting one's behavior, where necessary, by taking actions in the service of chosen values (Hayes, et al., 2006; Hayes et al., 1999). PIF consists of six core processes, namely present moment awareness, values, committed actions in the service of values, self as context, cognitive defusion, and acceptance (Hayes et al., 2012). PIF was found to be associated among college students with depression, anxiety, general psychological distress (Forman et al., 2007; Levin et al., 2014; Masuda, & Tully, 2011), procrastination (Aydın & Aydın, 2022; Scent & Boes, 2014), perfectionism (Crosby et al., 2013), alcohol and substance use (Levin et al., 2012), mindfulness (Aydın & Aydın, 2021)

With the aforementioned theoretical background and literature in mind, the main objective of this study was to investigate the relations between psychological inflexibility, rumination, worry, self-compassion, and college adjustment by using Structural Equation Model (SEM). Therefore, this study specifically aimed to test the following hypothesis in a holistic model:

H1: Psychological inflexibility significantly predicts self-compassion in university students.

H2: Psychological inflexibility significantly predicts ruminative thinking in university students.

H3: Psychological inflexibility significantly predicts worry in university students.

H4: Psychological inflexibility significantly predicts college adjustment in university students.

H5: Self-compassion significantly predicts college adjustment in university students.

H6: Ruminative thinking significantly predicts college adjustment in university students.

H7: Worry significantly predicts college adjustment in university students.

H8: Self-compassion, rumination, and worry significantly mediate the relationship between psychological inflexibility and college adjustment.

METHOD

Research Design

The purpose of this study was to examine the predictive relationships between psychological inflexibility self-compassion, ruminative thinking, worry and college adjustment, and mediating role of self-compassion, ruminative thinking, and worry in the relationship between psychological inflexibility and college adjustment. For this purpose, the current study utilized correlational survey model in order to explain the degree of exchange between two or more variables (Karasar, 2009).

Study Group

657 undergraduate first year college students participated in the study. While 486 (74 %) participants were females, 171 (26 %) were males. The age of the participants ranged from 18 to 25 (M = 18, 64, SD = 1.18). Of the total participants, 358 (54.5%) of the sample were from the Faculty of Education, 136 (20.7%) were from the School of Health, 87 (13.2%) were from the Faculty of Economics and Administrative Sciences, 56 (8.5%) were from the Faculty of Engineering and Architecture, and 20 (3.0%) were from the Faculty of Medicine.

Data Collection Tools

The University Life Scale (ULS). University adjustment was measured using ULS (Aladağ et al., 2003). The ULS has six subscales, namely (i) adjustment to college environment, (ii) emotional adjustment, (iii) personal

adjustment, (iv) relationships with the opposite sex, (v) academic adjustment, (vi) social adjustment and 48 items with a 7- point Likert scale that range from (not at all applicable) (1), to (totally applicable) (7). Higher scores represent better adjustment to college life. The Cronbach Alphas of the subscales ranged between 0.63 and 0.80. The Cronbach alpha for total ULS was 0.91.

The Acceptance and Action Questionnaire- II (AAQ-II). AAQ-II has been developed by Bond et al., (2011) to measure levels of psychological inflexibility. It has a single factor structure with 7 items on a Likert scale ranging from 1 (never true) to 7 (always true). The Cronbach Alpha of the one-factor solution of AAQ-II was 0.88. A study of the validity and reliability of the Turkish scale was conducted by Yavuz et al. (2016). The Turkish form of the scale was applied to a study of 107 undergraduate students with a mean age of 21.8. The Cronbach Alpha of the TAAQ-II was 0.90. A single-factor solution with Principal Component Analysis (PCA) was applied by the authors to test the factor structure of TAAQ-II, and this structure was found to be similar to the original AAQ-II. A single-factor structure explained 61.802% of the total variance (Yavuz et al., 2016).

The Ruminative Thought Style Questionnaire (RTSQ). The Ruminative Thought Style Questionnaire (RTSQ) was originally developed by Brinker and Dozois (2009). The scale consists of 20 items rated on a Likert type scale from 1 (not at all descriptive of me) to 7 (describes me best). The scale considers the positive, negative, and neutral facets of global rumination, namely repetitive, recurrent, uncontrollable, and intrusive thinking. The Cronbach Alpha of the original scale was 0.92. A validity and reliability study of the RTSQ was carried out on 262 university students by Karatepe et al. (2013). The Turkish adaptation study also revealed a single-factor structure. The Cronbach Alpha of the scale was found to be high, namely 0.91.

The Penn State Worry Questionnaire (PSWQ). The scale was originally developed by Meyer et al. (1990) and has 16 items with a single factor structure. The minimum score that can be obtained on this scale is 16, and the maximum is 80. Yilmaz et al. (2008) conducted a validity and reliability study of the PSWQ into Turkish with 561 participants. The Turkish form of the scale has a two-factor structure: the first factor, which has 11 items and is positively scored, indicates the presence of worry, while the second one, which has 5 reverse-coded items, indicates the absence of items of worry. The Cronbach Alpha score of the Turkish version of PSWQ was 0.91, and the Cronbach Alpha of the subscales, namely the presence and absence of worry, was found to be 0.92 and 0.68, respectively. In addition, while the Guttman split-half reliability was 0.91, the test-retest reliability was found to be 0.88 ($p < .01$), 0.88 ($p < .01$) and 0.72 ($p < .01$), respectively (Yilmaz et al., 2008). Even though the Turkish version of the scale has a two-factor structure, there are many other studies which support having a unidimensional structure for the scale. Therefore, a unidimensional form of the scale was used in this current study.

The Self- Compassion Scale (SCS). The 26-item Self Compassion Scale (SCS) was developed by Neff (2003a) to understand how people treat themselves in difficult times. In other words, the main aim of the scale was to measure continual self-compassion. It is a five-point Likert type scale ranging from “almost always” to “almost never”. Higher scores obtained on this scale indicate a high level of self-compassion. The original SCS has six subscales: self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification. Akın, Akın, and Abacı (2007) translated the scale and conducted a validity and reliability study on 633 non-clinical college students into Turkish culture. The Turkish form of the SCS supported the six- factor structure of the scale as a result of Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). Finally, the Cronbach Alpha coefficients for the sub-scales vary between 0.48 and 0.71 (Akın et al., 2007).

Data Collection

The approval of the Human Subjects Ethics Committee was obtained prior to data collection, with the data being collected from freshman students from different faculties and schools in the university. The measures were administered face to face during class time, and it took participants approximately 20 minutes to complete the survey. The participants were given the informed consent form on the first page of the study forms, and data was obtained from participants who were over 18 on voluntary basis.

Data Analysis

The first step of the data analysis process was a preliminary analysis of the accuracy of the data, including examination of missing values and outliers. This analysis resulted in 47 cases of this current study being excluded due to more than 5% of the required values being missing. In other words, those cases (n=47) were subjected to listwise deletion due to a non-ignorable number of missing values. Following these eliminations, the sample size of the study was 657 (571 females and 206 males) with a mean age of 18.67 (SD = .44). As suggested by Kline (2011), the missing value analysis was concluded by attaining mean values for those cases which had less than 5% of the data missing data.

Both univariate and multivariate outliers were also examined before running the analysis. While the univariate outliers were examined according to their standardized (z) scores, multivariate outliers were tested by

checking values of Mahalanobis Distance (MD). In this regard, as proposed by Tabachnick and Fidell, (2007), cases that are not between -3.29 and +3.29 could be considered as being outliers. In this current study, this applied to only seven cases. It was decided that the seven outliers be kept in the data due to the large sample size of the study (Tabachnick & Fidell, 2007). In addition, as a result of the analysis of multivariate outliers, there were 15 cases which generated greater MD values than the critical value. However, it was decided that those cases be retained due to the fact that there were no significant changes when the cases were removed from the data analysis.

The data was also screened to check that it was normally distributed, and via skewness and kurtosis values. According to the results, all of the variables in this study were found to be approximately skewed, with a skewness score of between -1 and +1. The kurtosis scores were within the acceptable values of -3.0 to + 3.0. Pearson Correlation Coefficients method was used to assess the associations between psychological inflexibility, rumination, worry, self-compassion and college adjustment.

Finally, regression and mediation analyses in the SEM model were tested by using AMOS20 software with all study variables. The findings were reported by considering Chi- Square/ Degrees of freedom (χ^2/df), Normed Fit Index (NFI), Compared Fit Index (CFI) and Tucker-Lewis Index (TLI), the Root Mean Square Error of Approximation (RMSEA). The proposed model in which psychological inflexibility, self-compassion, rumination, and worry were stated as endogenous variables, college adjustment was placed as the exogenous variable in the model (Figure 1).

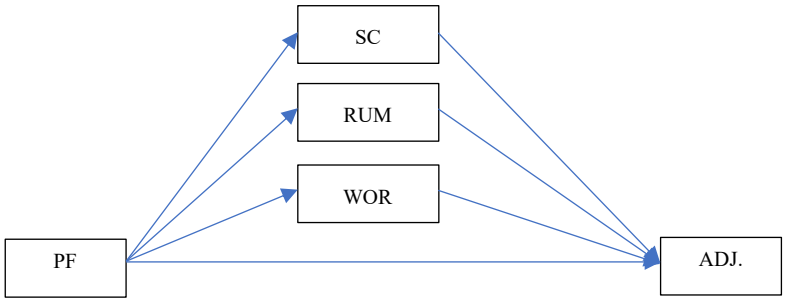

Figure 1. *Proposed measurement model.*

PF: Psychological Inflexibility; SC: Self-Compassion; RUM: Ruminative Thinking; WOR: Worry: ADJ.: College Adjustment

FINDINGS

In this part of the research the descriptive statistics and bivariate correlations between study variables were presented. Then, the predictive roles of psychological inflexibility, self- compassion, ruminative thinking, and worry were given based on the hypothesis. Finally, the findings of the mediation analyses were presented.

Descriptive Statistics and Correlation Results

Table 1 indicates a correlation matrix for all variables. It can be seen in the results of the correlation analysis that while college adjustment demonstrates a significant relationship with self-compassion, it was also found to be negatively and significantly associated with rumination, worry and psychological inflexibility.

Table 1. Descriptive Statistics, Reliability Values, Bivariate Correlations, CFA Values

	α	Mean	SD	1	2	3	4	5	CMIN/DF	CFI	TLI	RMSEA
1.ADJ.	.89	4.99	.772	1					2.18	.82	.80	.04
2. WOR	.90	3.01	.803	-.435*	1				3.43	.94	.93	.06
3. RUM	.89	4.95	1.081	-.386*	.591*	1			2.49	.96	.95	.05
4. SC	.91	3.14	.653	.525*	.597*	-.489*	1		2.25	.94	.93	.04
5. PF	.85	3.43	1.318	-.542*	.554*	.550*	-.605*	1	2.06	.99	.98	.04

*p< .005

CFA: Confirmatory Factor Analysis, PF: Psychological Inflexibility; SC: Self-Compassion; RUM: Ruminative Thinking; WOR: Worry: ADJ.: College Adjustment

Prediction and Mediational Results

This study was based on eight hypotheses. Based on the SEM analysis the results of the first seven-research hypothesis as shown in the Figure 3, revealed that psychological inflexibility was a found to be a significant predictor of self-compassion (β = -.71) (H1), ruminative thinking (β = .70) (H2) and worry (β = .74) (H3). Moreover, psychological inflexibility significantly predicted college adjustment as hypothesized (β = -.57) (H4), and self-compassion also significantly predicted college adjustment (β = .18) (H5). Furthermore, college adjustment was not significantly predicted by rumination (β =.05) (H6) and worry (β = -.05) (H7) as opposed to the proposed hypothesis.

Finally, the role of psychological inflexibility on college adjustment was tested before analyzing the mediational model. As a result of the simple linear regression analysis psychological inflexibility came out as a significant predictor of college adjustment (β = -.57) and it accounted for 32% of total variance (Figure 2) in college adjustment. Followingly, the hypothesis eight aimed to test the mediating role of self-compassion, ruminative thinking, and worry in the relationship between psychological inflexibility and college adjustment.

As a result of model testing (Figure 3) only self-compassion had a partial mediating role between psychological inflexibility and college adjustment as the previous significant relationship between psychological inflexibility and college adjustment remained but regression coefficient decreased (β = -.48). The overall amount of variance on college adjustment explained by psychological inflexibility, self-compassion, ruminative thinking, and worry was 38%. Additionally, as a result of model testing (Figure 3) following fit indices results were emerged: χ^2/df= 2.32, NFI: .85, CFI: .91, TLI: .90 and RMSEA: .04. The values greater than .90 in CFI and TLI scores were the indicators of a good or acceptable fit (Bentler & Yuan, 1999, Schumacker & Lomax, 2004). Additionally, NFI value was found to be .85 and that was a mediocre fit. Finally, for the RMSEA values in the range of 0.000 and 0.05 indicate good fit, 0.05 and 0.08 indicate fair fit, and those scores between 0.08 and 0.10 mediocre fit, and those higher than 0.10 indicate poor fit (Browne & Cudek, 1993). RMSEA score showed a good fit (MacCallum et al., 1996).

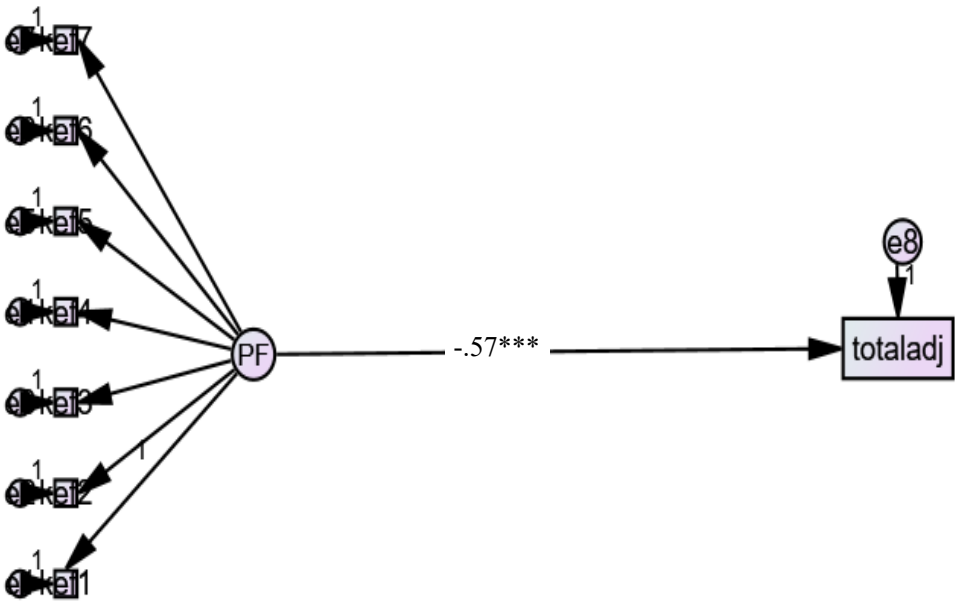

Figure 2. *Simple linear regression model (n=657) between psychological inflexibility and college adjustment*

*p< 0.05, **p< 0.01, ***p< 0.00

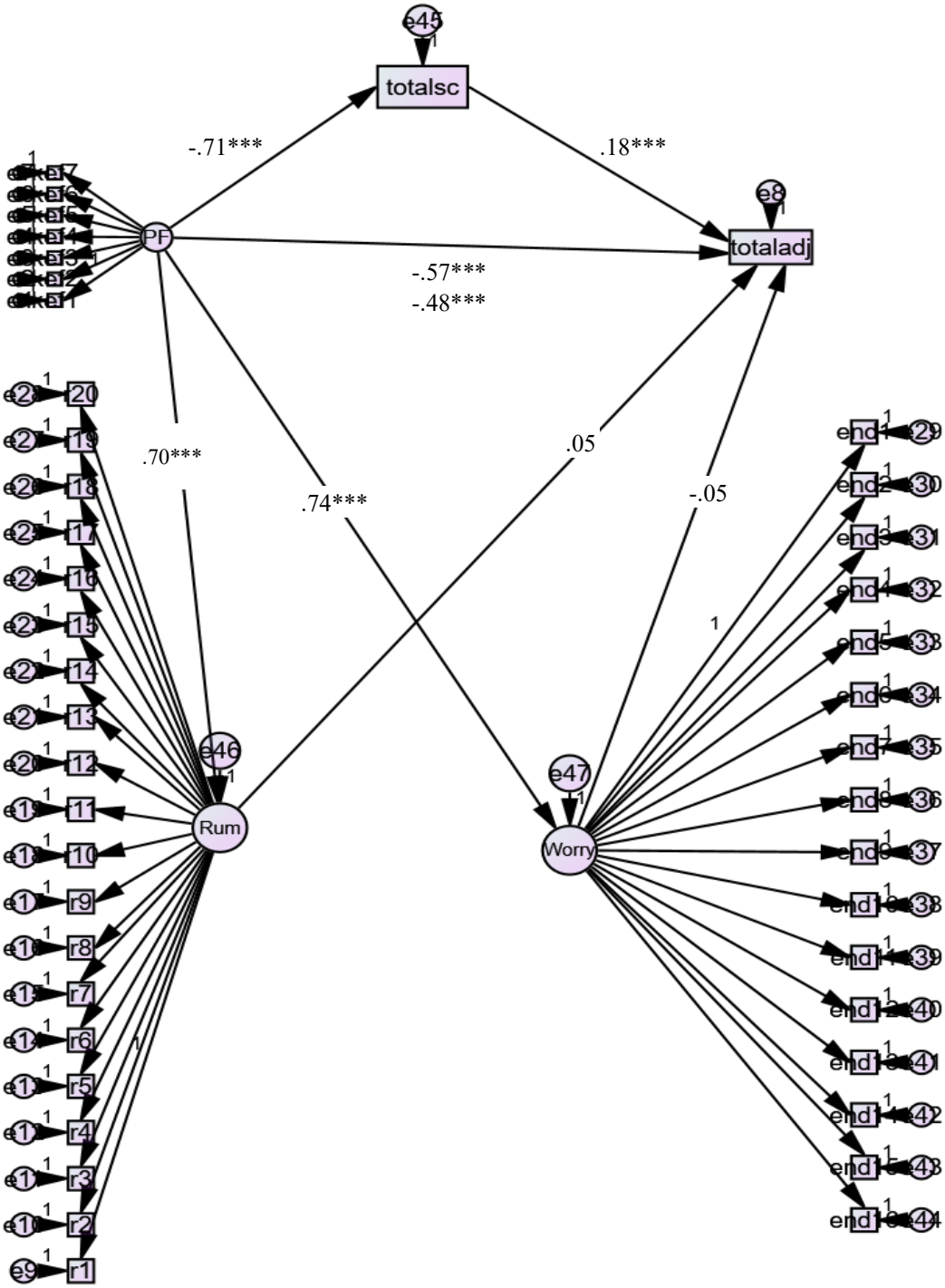

Figure 3. *Mediational model (n=657) of psychological inflexibility on college adjustment through self-compassion, rumination, and worry. Standardized effects are presented. *p< 0.05, **p< 0.01, ***p< 0.001*

Discussion & Conclusion

The main purpose of this study was to investigate the associations between psychological inflexibility, self-compassion, rumination, worry, and college adjustment simultaneously in a structural model. Additionally, this study also aimed to test the mediating roles of self-compassion, ruminative thinking, and worry in the relationship between psychological inflexibility and college adjustment. College adjustment as the dependent variable in this study was found to be significantly correlated with other independent variables by having the highest correlation with psychological inflexibility.

According to the results, psychological inflexibility was negatively and significantly associated with self-compassion and positively and significantly associated with rumination and worry as stated in the first three hypothesis. In other words, psychologically inflexible freshman students have difficulties to have compassionate attitude towards themselves and they tend to ruminate and worry. These findings were in parallel with the literature as Morrison and O'Connor (2005) stated that ruminative thoughts and stress could be the major causes of psychological distress in college students. In addition, self-compassionate attitude among college students was significantly and positively related to well- being (Bluth & Blanton, 2014) and negatively related to stress in college (James, 2013).

Moreover, psychologically inflexible students have some difficulties in college adjustment process. The results also revealed that freshman students who have high self-compassion are more likely to adjust the college life. A study conducted by Terry et al. (2013) on 119 college students supports the findings of the first hypothesis which revealed the positive and significant association between self-compassion and college adjustment. In Terry et al.'s (2013) study, it was shown that those who have higher self-compassion demonstrate lower depression, less homesickness, and are more satisfied in attending the college. Similarly, Hall et al. (2013) investigated the role of self-compassion on students' well-being with 182 undergraduates, and the results revealed that self-compassion was a significant predictor of both the physical, and the psychological, well-being of college students. Self-compassion can be a protective factor against anxiety, depression, and related psychological problems (Neff et al., 2007), as well as adjustment difficulties for freshman students. Finally, it is not surprising, when considering the overarching nature of self-compassion that involves mindfulness, common humanity, and self-kindness components, that the study indicated that being compassionate towards yourself may help to overcome adjustment difficulties.

Finally, as a result of the current study while self-compassion had a partial mediating role in the proposed model, ruminative thinking and worry did not have any mediating role between psychological inflexibility and college adjustment. In plain language college adjustment was significantly explained by psychological inflexibility through self- compassion. Self-compassion generally supports positive outcomes in individuals such as happiness and optimism (Neff, 2009), resilience in university students (Permatasari & Meilita, 2022), and recently Covid 19 related coping with stress mechanisms in university students (Huang & Wang, 2022). The significant mediating role of self-compassion in this model can be understood from a contextual behavioral science perspective. Self-compassion in the context of college adjustment process can be considered as a vital source of human strength since it evokes kindness, feelings of connectedness, tolerance and acceptance, and it also helps individuals to find a meaning and hope in difficult times (Neff et al. 2007). On the other hand, ruminative thinking and worry could possibly be taken into consideration as experiential avoidances from Acceptance and Commitment Therapy perspective. Experiential avoidance (EA) is simply defined as the avoidance of unwanted feelings, emotions, thoughts, and sensations (Hayes et al. 1999). EA behaviors may perfectly work in the short run to deal with difficulties and may provide short term relief, but they can be very detrimental when dealing with problems in the long run (Harris, 2022). In this regard, rumination and worry as repetitive thinking strategies may help freshman students to deal with adjustment difficulties but create more detrimental effects in the long run.

The value of the present study cannot be correctly evaluated without considering its limitations. First, the data of this study was gathered during a single period, which prohibits researchers from taking a wide range perspective of the college adjustment phenomenon. Future research would therefore benefit from longitudinal data in order to better appreciate whether PIF, rumination, worry, and self-compassion predict or explain the college adjustment over time. A second limitation was connected to the convenience sampling strategy which contacted the participants who were available at the time of data collection. Gender inequality (74% of the participants were female and 26% were male) was one of the results of the convenience sampling in this study. Researchers collected more than 50% of the data from the faculty of education, which was typically mainly attended by female students. In addition, as the study only consisted of first-year college students at a single university, the results cannot be generalized to all college students. Future studies should therefore take this point into consideration when conducting extension studies. The third point that must be mentioned was that the college adjustment scale that was used in this present study contains some sensitive questions related to students' sexual and emotional life. Care needs to be taken by future researchers who should be careful about items of this type since some questions can be culturally problematic.

Statements of Publication Ethics

This study was conducted in accordance with the 1964 Declaration of Helsinki and ethical standards. Informed consent was obtained from all participants. The approval of the Human Subjects Ethics Committee was obtained (2014/116) prior to data collection process. This study was not funded by any organization or institution.

Researchers' Contribution Rate

The article was completely conducted by the author.

Conflict of Interest

The author declares that there is no conflict of interest associated with this paper.

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