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HEADQUARTER / Yönetim Merkezi  
Kavaklıdere Mahallesi, Kızıllırmak Caddesi, No: 10/A Çankaya/ANKARA 06680  
E-Posta: info@aniyayincilik.com.tr  
enad.editor@gmail.com  
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# Values Education with Educational Games

Büşra Usta\*, Bilal Yorulmaz\*\*

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## Abstract

This study aims to reveal the effectiveness of educational games in raising awareness about the values of responsibility, patience and honesty in the programme within the scope of the Physical Education and Games course for 3rd-grade primary school students. In this study, technical/scientific/collaborative action research, one of the types of action research, which is a qualitative research design, was used. The study group of this research consisted of 23 primary school 3rd-grade students studying in a public school in Istanbul, Türkiye. While determining the study group, easily accessible case sampling method was used. Student interviews, researcher observations, and audio and video recordings were used to evaluate the implementation process. The qualitative data were analysed with the descriptive analysis technique. At the end of this study, it was determined that the education carried out with educational games in physical education and game lessons raised awareness about the values of responsibility, patience and honesty in students. It was also observed that students had positive thoughts about the process and enjoyed the activities. Based on the results of this research, it is recommended that in further studies, the duration of the action should be longer, the number of games whose effects are examined should be increased, and the issue of values education with educational games should be investigated in all classes and courses.

**Keywords:** Values Education, Educational Games Action Research, Elementary Schools.

## About the Article

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\*  Corresponding Author, Marmara University, Faculty of Education, Turkey, b.yildiz\_79@hotmail.com.

\*\*  Assoc. Dr., Marmara University, Faculty of Education, Turkey, bilalyorulmaz@marmara.edu.tr

## Introduction

The concept of play can be defined as a way for children to recognise the universe they are in at the beginning of their lives, express themselves, understand their environment, communicate and express their positive and negative emotions. Games have started to be used in the education process to eliminate the boredom of traditional education, make education more enjoyable and benefit from the positive effect of games on learning (Yıldırım, 2012, p. 24; Yorulmaz, 2014, p. 21).

It is not correct to see games as a leisure time occupation. Play is one of the most effective educational tools for children not only to have fun and have a good time but also to experience life and learn new things because it is a prototype of real life. In educational research, the concept of educational play is used more often than play. Educational play is defined as activities that arouse a sense of happiness in children, give them good behaviour and habits, and contribute positively to cognitive, behavioural and emotional development (Varışoğlu et al., 2013, pp. 1060-1061).

As soon as human beings are born, they find themselves in society, which is a social area. To survive in this social environment, it is not enough to meet physiological needs alone. At the same time, it is also crucial for individuals to be happy, be part of society, and meet their social needs, such as communication and love. It is possible for students to gain values, which are among social skills, through educational games (Gündüz et al., 2017, pp. 64-68)

Values are expressed as the elements that enable society to live in peace and be happy (Ogur & Altunay Çam, 2021, p. 673). Demir (2018) defines values as systems that make people's lives meaningful and guide their attitudes and behaviours. Values are primarily acquired in the family and shaped by the environment. Thus, educational institutions have considerable duties in addition to the family for individuals to receive a correct values education. In educational institutions, all students are trained to acquire common values despite coming from different environments (Demir, 2018, pp. 1-2)

In today's society, communication and bonds between individuals are decreasing daily. When the unconscious use of technology is added to this situation, people's intolerance towards each other and their distancing from human values, such as love, respect and cooperation, continue to increase in society. This increase also damages the peaceful environment in society. To prevent all negativity, human values should be instilled in children at a very young age to ensure that values are adopted permanently (Senek, 2018, pp. 2-3). Values have many effects on society, such as raising people with good morals and character, transferring elements of culture to the next generation, ensuring peace in society, and shaping individual behaviour. Over time, forgetting the vital values that make a society a society and decreasing the sensitivity of people to these issues may cause social collapse. Thus, it has gained vital importance to educate society about values to prevent social collapse and the loss of culture (Biter & Çalışkan, 2019, p. 4). For this reason, it is vital for the continuation of the existence of society to give more

importance to values education in schools that are responsible for raising the new generation and carrying out this training effectively (Ogur & Altunay Çam, 2021, p. 674).

When giving value education to children, it is necessary to create a suitable environment where they can learn by doing and experiencing, and give them the opportunity to play games instead of giving speeches to give information about values. Games have a great effect on the growth of children as spiritually healthy individuals (Erdal, 2019, pp. 53-59). Educational games are seen as important activities for children to acquire values. Because it is a necessity to acquire values at an early age. Thus, using educational games in the process of acquiring values can be an opportunity for effective values education (Gündüz et al., 2017, pp. 64-69). Children acquire many human values, such as respect, honesty, helpfulness, happiness and tolerance while playing games. Children who play games at home and school will have fun while playing and learn while having fun. Hence, more effective, easy and permanent values education can be provided through games (Erdal, 2019, p. 59). Games played during childhood are effective in the acquisition of values. It is also thought that abstract values, such as responsibility, and respect, which are difficult to teach students, can be gained through games (İlgar & Tutumlu, 2021, p. 86).

In the studies on values education in the national literature, data were generally collected through document analysis. To give examples of these studies, Ogur and Altunay Çam (2021) mentioned the importance of values in children's stories. Senek (2018) Aytül Akal fairy tales, Karagöz (2018) Emin Özemir books, Gök (2021) Bedri Rahmi Eyüboğlu's poems, Yeniay (2019) Behiç Ak stories, Ağaoğlu (2018) Bahaeddin Özkişi's works, Bebek (2020) Dadaloğlu poems, Aydoğdu and Alkan (2020) analysed Behiç Ak's Notes of an Observer with Rabbit Teeth according to the value of love, Geçgel and Durak (2020) analysed Gülliver's Travels, and Urlu (2020) analysed Melih Cevdet Anday's plays according to the root value; Akpınar (2015) analysed the stories published in Yağmur Magazine between 2004-2014 according to their inclusion of social values. Kara and Emirhan (2020) and Yükrük and Akarsu (2015) examined the songs in primary school music textbooks, Karagözoğlu (2020) examined the songs liked by fourth-grade students, Erçelik and Yeşilyurt (2020) examined the Turkish Learning set, Alıcı (2019) examined the second-grade Turkish textbook, Kurtdele Fidan and Geyik (2019) examined the fourth-grade Human Rights, Citizenship and Democracy book, Uzunkol (2017) examined primary school third grade mathematics textbooks, Özkaya and Duru (2020) examined mathematics textbooks in the context of values education. When the research results are examined in general, it is stated that many values are included in the artefacts. However, it is stated that not all of these values are equally distributed in the works; some values are greater and some are less. For example, Özkaya and Duru (2020) stated that equality was the most common value in mathematics textbooks, while justice, sharing, saving and aesthetics were the least common values. Uzunkol (2017) stated that values should be discussed in more detail. Yükrük and Akarsu (2015) stated that in songs in primary school music textbooks, love

and patriotism values are the most common values, while fairness, kindness, modesty, empathy, hospitality and greeting values are absent.

Yaşaroğlu (2018), in his study investigating the extent to which values have been included in life science programmes since 1926, stated that values were covered in all programmes, but values were explicitly emphasised in the 2015, 2017 and 2018 programmes.

In the literature, there are studies on educational administrators, teachers and pre-service teachers. It is seen that mostly values education studies are conducted on teachers (Bayırlı et al., 2020; Ergin & Karataş, 2014; Karasu Avcı et al., 2020; Sayın, 2020; Kuzu, 2015; Karamustafaoğlu & Amanat, 2017; Batmaz & Erdoğan, 2019; Erbaş & Başkurt, 2020; Aktepe et al., 2020; İbret, Karatekin, & Avcı, 2015). Some studies are about administrators and teachers (Vatansever Bayraktar & Karakülçe, 2019; Yazar et al., 2017; Karakülçe, 2018; Gürhan, 2017; Yediyıldız, 2019); some studies are about candidate teachers (Kurtdeğir Fidan, 2016; Kırıl & Dinçer, 2018). When the studies were examined, teachers stated that values education is important. However, the time allocated to this education is insufficient (Ergin & Karataş, 2014), it should be compulsory as a separate course (Ergin & Karataş, 2014) (Aktepe, Keser, & Şeref, 2020), and they mostly do value indoctrination instead of value education (Bayırlı et al., 2020; Erbaş & Başkurt, 2020).

In the literature, there are studies conducted on preschool (Kapkın, 2018), primary school (Kılıç & Babayiğit, 2017; Genç 2015; İzgar, 2020) and secondary school students (Biter, 2019; Keleş, 2019; Aktepe & Yalçınkaya, 2016; Yıldırım, 2019). In some studies, the effectiveness of different practices, methods and approaches in value education was examined. It was stated in the studies that the drama method (Kaya & Antepli, 2018; Kaya et al., 2016), educational games (Biter, 2019; İzgar, 2020), web-based value education (Karaman & Akgül, 2015), value transfer, value analysis, value explanation and action learning approaches (Demir, 2018) were effective in value education. Yıldırım (2019) stated that out-of-school activity-based values education and Kapkın (2018) stated that the activity-based values education programme is useful in value education. Kılıç and Babayiğit (2017) found that there was a decrease in love and respect, selfishness, decreased socialisation, and decreased awareness of responsibility in students.

Some studies in the literature were conducted with the participation of parents. According to the results of the research, parents think that SEDEP (Koyuncu & Uçar, 2018; Uçar, 2018), Mother Values Education Programme (Neslitürk et al., 2015) are effective in adopting important values.

İzgar (2020) examined the effect of educational games on values education for primary school students; Keleş (2019) examined the effect of physical education and sports courses on values education, but, to our knowledge, no study has been conducted on whether educational games are effective in raising awareness about values within the

scope of physical education and games courses in a class in primary school. However, the importance of educational games for values education is frequently mentioned in the literature. In addition, a physical education course is accepted as an important course in terms of gaining value because it develops children in many aspects (Yıldız & Güven, 2013). İpek Eren and Arslan (2022) stated that physical education and sports lessons have a very important place in teaching values. A popular physical education course can be used as an important tool for values education as well as movement and physical education (Öztürk Kuter & Kuter, 2012). This course enables the acquisition of values because it enables learning by doing and experiencing and encourages the active participation of students (Bozkuş, 2014). Based on the importance of physical education and games lessons and educational games in values education, this study aims to make a modest contribution to the literature on values education with educational games in physical education and games lessons. In this study, it was investigated whether educational games in physical education and games lessons create awareness about values education in children. In this article, the efficiency of games in teaching honesty, patience and responsibility values to 3rd-grade primary school students was investigated. The reason why only these three values have been investigated is that it is considered important for children to gain these values and it is desired to investigate these values in more detail.

### The Aim of this Research

It is thought that playing educational games designed in accordance with the values of honesty, patience and responsibility in the Physical Education and Games course will create awareness in children about the values of honesty, patience and responsibility. This research covers the processes of data collection, analysis and evaluation of whether this idea is true or not. In this context, the research aim is to reveal the effectiveness of educational games in raising awareness about the values of responsibility, patience and honesty, which are included in the programme within the scope of Physical Education and Game lesson for 3rd-grade primary school students. In line with this general purpose, the following questions were sought in the research:

1. How do *Honesty* and *Horns in the Air* games help students acquire the value of honesty?
2. How do the games *Fill and Empty* and *Balloon Dance* help students acquire the value of patience?
3. How do *Castle* and *Go Around Behind, Reach Your Place* games help students acquire the value of responsibility?

## Method

### The Study Design

This research was designed with technical/scientific/collaborative action research, which is one of the types of action research among qualitative research designs, to raise awareness about the values of responsibility, patience and honesty in the content of the 3rd-grade Physical Education and Games curriculum through the educational games developed. Technical/scientific/collaborative action research is defined as the implementation and evaluation of the application within a certain theoretical framework (Yıldırım & Şimşek, 2021, p.320). To prevent the negativity that may occur during the implementation process of the research, the educational games were personally applied to the students by the researcher and the interviews were conducted one-on-one. After the implementation, this research was finalised by evaluating the actions taken. The technical/scientific/collaborative action research design was accepted as the most appropriate design for this study due to the fact that no intervention was made to the naturalness of the classroom environment and the observations and interviews during the implementation were included in this study and subjected to evaluation.

### The Study Group

The study group of this research consisted of 23 students studying in the 3<sup>rd</sup> grade of a public school in Ümraniye district of Istanbul, Türkiye, in the 2021-2022 academic year. While determining the study group, easily accessible case sampling, which is a purposeful sampling method, was preferred. Convenience sampling is defined as sampling by choosing a situation that is close to the researcher and easy to reach (Yıldırım & Şimşek, 2021).

### The Study Environment and the Role of the Researcher

The location of the study was the school garden and the classroom. The school garden was large and consisted of a concrete floor. The classroom was an average classroom. It was organised in a u-arrangement where children could move comfortably.

The researcher was the class teacher of the group in which this research was conducted. The researcher gained the trust of the students because he was the teacher of the group. He aimed to conduct a research process based on an environment of trust in the classroom. In this way, it was thought that the students would express themselves more comfortably.

In this research, six educational games were played for two weeks. The games played by the participants were: Fill and Empty, Castle, Horns in the Air, Balloon Dance, Go Around Behind and Reach Your Place and Honesty. The reason for choosing these games was that each game contains at least one value whose effect was desired to be investigated. The games were first explained to the students and the rules of the game



were comprehended. During the playing of the games, the students were observed by the researcher. The researcher did not intervene in the group during the observation; she took notes on student behaviours and made audio and video recordings. In the interviews conducted after the games, the students were asked to answer the questions posed. The interview was elaborated by asking additional questions when necessary. Children who could not answer the questions expressed themselves in different ways, thinking that they did not understand the question. Nevertheless, those who did not want to answer were not forced.

The researcher did not reflect his prejudices and thoughts on the process during the observations and interviews and only carried out actions to reveal the participants' ideas.

### **Data Collection**

First of all, before the research started, the application permission was obtained from the Istanbul Provincial Directorate of National Education and the ethics committee certificate showing that the research did not violate ethical rules was obtained from Marmara University.

The data of the study were obtained from observer notes and student interviews. During the implementation process of this study, the process was recorded with video and audio recordings to evaluate the in-class communication during the games played and prevent data loss. With these recordings, it was aimed at evaluating the participation of the students and whether the applications were useful or not. In addition, the purpose for which these recordings would be used was explained to the students. The recordings were frequently transferred to computer media to prevent data loss and kept for re-listening during the analysis process. The students' identities were hidden in the recordings and the analysis process was carried out through the codes given to them.

#### **a. Interview**

The researcher used a semi-structured interview form to determine the students' awareness of the values related to the educational games and activities after the educational games and activities. A semi-structured interview form was preferred because it can provide the flexibility of the research with additional questions during the interview.

During the interview conducted after the games, six open-ended questions were asked of the students. Through the questions, it was aimed to find out what the students gained from the educational games prepared within the scope of the games and physical activities course, to obtain the opinions of the participants about the situations that should and should not be done during these games, and to reveal the results/principles reached by the students at the end of the activities. In this context, firstly, interview questions were prepared by the researcher. While preparing the questions, each question was aimed at investigating a different situation. The prepared questions were



finalised by applying expert opinion and making corrections and deletions. The questions in the semi-structured interview form are as follows:

Questions to be asked after the games about the value of *honesty*:

- 1) What do you think honesty is?
- 2) Is it right or wrong to lie? Why?
- 3) How did you want your friends to behave during the game?
- 4) What did you learn while playing the game?
- 5) How did this game benefit you?
- 6) Which rules will you pay attention to while playing the game after today?

Questions to be asked after the games about the value of *patience*:

- 1) What do you think patience is?
- 2) Is it right or wrong to be impatient? Why?
- 3) How did you want your friends to behave during the game?
- 4) What did you learn while playing the game?
- 5) How did this game benefit you?
- 6) Which rules will you pay attention to while playing the game after today?

Questions to be asked after the games about the value of *responsibility*:

- 1) What do you think responsibility is?
- 2) Is it right or wrong to behave irresponsibly? Why?
- 3) How did you want your friends to behave during the game?
- 4) What did you learn while playing the game?
- 5) How did this game benefit you?
- 6) Which rules will you pay attention to while playing the game after today?

#### **b. Observer notes**

While the researcher was implementing the activities centred on educational games in the physical education and games course, the following items were taken into consideration and notes were taken:

- Difficulties encountered by students during the activities
- Students' mental and emotional development during the activities
- Students' behaviour during activities

From the beginning to the end of this research, the researcher took notes on the students' ideas at every stage, their experiences in the process, and their thoughts about the problems and solutions. In this way, the usability of using educational games in the games and physical activities course to raise awareness among students about values was checked. Observer notes were evaluated in the analysis phase of this research.

### **Data Analysis**

The qualitative data obtained from communication segments, observer notes and student interviews was analysed by the descriptive analysis method. Descriptive analysis is defined as collecting data about the group, analysing and describing it and then presenting it (Büyüköztürk et al., 2006). The data obtained from student interviews were directly quoted. The directly quoted answers was described and interpreted in a meaningful way.

### **Validity and Reliability**

For qualitative research, validity can be defined as the correct measurement of the phenomenon to be measured. The fact that the researcher is flexible in the research process and close to the application area, obtaining the data in detail by conducting face-to-face interviews, and collecting information directly at the place where the event takes place by making observations are important factors for validity. In addition, explaining the research process and data in detail and including direct quotations are important features in creating validity (Yıldırım & Şimşek, 2021).

External validity is the ability to generalise the research results to similar environments and situations. For generalisation to occur, it is expected that the research stages should be explained to the reader in detail (Yıldırım & Şimşek, 2021). According to Miles and Huberman (1994), the process, environment, sample and findings of the study are explained in detail and the research questions are consistent with the results, increasing external validity.

For internal validity, the researcher should be consistent in all processes of the research (data collection, analysis and interpretation) and make explanations about them. The researcher, who must constantly evaluate himself/herself and the process with a critical eye, should check whether the findings reflect the truth and the explanations regarding the procedures to be carried out throughout the research should be clear in a way that the reader can understand (Yıldırım & Şimşek, 2021).

To increase the validity of this research;

For external validity;

- The research sample, setting and process were described in detail.
- The sample group consisted of children from families with different socio-economic statuses.
- The study group consisted of both male and female students.
- As a result of this research, the research questions were answered.

For internal validity;

- Face-to-face interviews were conducted to collect detailed and in-depth information.
- Observations were made in the natural environment where the event took place.
- Research questions were examined by other experts and necessary corrections were made.
- All stages of the research were recorded with video and voice recorders.
- The researcher personally participated in the process and did not allow any data loss and recorded the data systematically.
- In this research, data were collected with more than one tool and the relationship between the data was analysed and the validity of this research was tried to be increased in this way.

For external reliability, it is considered important for the researcher to explain the role of the researcher in the research process. Clearly defining the group and the environment in which the data were collected and providing detailed information about the data collection and analysis stages are considered essential conditions for external validity (LeCompte & Goetz, 1982). Miles and Huberman (1994) emphasise the necessity of keeping the raw data related to the research.

For the internal reliability of the research, the research data should be quoted directly and the interpretation should be made later. In addition, using the data obtained from observations and interviews to confirm each other and comparing the results by involving different researchers in data analysis are factors that increase internal reliability (LeCompte & Goetz, 1982). Miles and Huberman (1994) stated that expressing the questions related to the research clearly will increase internal reliability.

To increase the reliability of this research;

For external reliability;

- The position of the researcher (what he/she did during observations and interviews) was clearly stated.
- The study group was clearly defined.
- The social environment where the data were collected was described.
- The data collection process and analysis stages of the study were explained in detail.
- The raw data of this study were stored.

For internal reliability;

- The data obtained in the interviews were confirmed through observations.
- The video and audio recordings made during the observation were analysed by two other teachers besides the researcher. A consensus was reached by consulting about the data and analysed.
- The questions to be used in the research were explained clearly and understandably.
- The data obtained from the research were quoted directly without modification.

### **Study Plan and Process**

What was carried out before the application of this research is as follows:

- Obtaining the necessary permissions from the school administration, student parents and provincial national education
- Obtaining ethics committee permission from the university
- Determining the time and hours of the application and making the application plan
- Introducing the research to students and parents
- Preparation of educational games

The studies carried out in the action research are shown in Table 1 below:

**Table 1.**

*Actions in the Research*

| Lesson          | Actions                                                                                                                                                                                                            | Researched Value | Data Collection Tool                                             |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------|
| <b>Lesson 1</b> | <ul style="list-style-type: none"> <li>• Warm-up exercises</li> <li>• Playing the <i>Honesty</i> game</li> <li>• Playing the game of <i>Horns in The Air</i></li> <li>• Interview form</li> </ul>                  | Honesty          | Observation<br>Interview<br>Video recordings<br>Audio recordings |
| <b>Lesson 2</b> | <ul style="list-style-type: none"> <li>• Warm-up exercises</li> <li>• Playing the <i>Fill and Empty</i> game</li> <li>• Playing the <i>Balloon Dance</i> game</li> <li>• Interview form</li> </ul>                 | Patience         | Observation<br>Interview<br>Video recordings<br>Audio recordings |
| <b>Lesson 3</b> | <ul style="list-style-type: none"> <li>• Warm-up exercises</li> <li>• Playing the <i>Castle</i> game</li> <li>• Playing the <i>Go Around Behind and Reach Your Place</i> game</li> <li>• Interview form</li> </ul> | Responsibility   | Observation<br>Interview<br>Video recordings<br>Audio recordings |

To summarise the research process briefly, a document containing the purpose, scope and consent form of the research was sent to the participant students and parents in this study. It was stated in the document that audio and video recordings of the children would be taken. A consent form was obtained from the parents indicating that they allowed their children to participate in the research. During the activities, care was taken to ensure that children volunteered and students who did not want to participate were not forced. Two different games were played in two different lessons on the same day. After explaining how the games were played, no intervention was made to the children during the game. The lesson was video recorded during the game. After the games, interviews were conducted in the third lesson. If the interviews were not finished, the fourth lesson was continued and not left for the next day. During the interviews, students' opinions were respected and no guidance was given. Only when more details and explanations were needed, additional questions were asked. While reporting the research data, the identity information of the students was concealed. The names of the students were reported using the initials of their first and last names and the letters K if female and E if male. Name coding was determined as gender, first name and surname initials respectively.

## Findings

### Findings related to the First Sub-objective, "How do the games *Honesty and Horns in the Air* help students acquire the value of honesty?"

The following findings were obtained as a result of the interviews with the children and the researcher's observations in the study, which examined whether students were aware of the values of honesty (Table 2):

**Table 2.**

*Values Acquired in "Honesty and Horns in the Air" Games*

| Values              | F  |
|---------------------|----|
| Integrity           | 19 |
| Goodness            | 7  |
| Happiness           | 4  |
| Respect             | 1  |
| Following the Rules | 1  |
| Love                | 1  |

Looking at the data in Table 2, it was seen that the value of honesty was the value that developed the most in students after playing the game of *Honesty and Horns in The Air*. In the interviews conducted with the students after the games, the students gave answers pointing to the value of honesty when asked what they had learned. This situation is also supported by the observations made during the game. After the games, the values that raised the most awareness after the value of honesty were kindness, happiness, respect, obeying the rules and love, respectively.

In the interviews, it was observed that the students generally defined the value of honesty as not lying/telling the truth. Some students defined honesty as goodness, love and respect, cooperation-peace and friendship.

All of the students think that lying is wrong behaviour. A few students explained their reasons as follows: Lying is wrong. Because "KSÖ: You will be very sad.", "KEP: You will be very sad and hurt", "EYE: If you do not keep your promise, it will be harmful.", "KAA: Something bad will happen.", "KND: If you lie, people won't believe you.", "EVK: Your friendship bond will weaken. They won't trust you anymore.", "EYÇ: You will be sad when your lie is revealed.", "KAE: If I don't do what I say, my friend will resent me.", "KHH: A lie can cause anything.", "ENG: No one will believe us. We'll be alone.", "KES: No one will be friends with us.", "EYB: Even if it is true, no one will believe it."

When asked how they wanted their friends to behave during the game, children expressed that they wanted their friends to behave well, to be honest and kind, not to be unruly and unfair, not to say bad words, to congratulate them, and to follow the rules. Children mostly stated that they wanted their friends not to lie and to be honest.

Children stated that they would pay attention to being honest, obeying the rules, loving their friends, not hitting, not pushing, not doing what they dislike, not harming, playing nicely, being respectful, and not mistreating their friends while playing games. When the answers were analysed, it was seen that the majority of the participant group stated that they would pay attention not to lie, in other words, to be honest in the games they would play from now on.

The children said, "KHH: I learnt not to lie at all, EYE: I will go to the board when I do wrong, KMC: I learnt honesty while playing the game, KND: The game taught me honesty..." sentences, "EUY: I will not behave badly, KZU: I will not hit, KZU: I won't push, I won't do what I don't like to anyone, KZU: I will not upset, KEP: I will not get angry, I will not behave badly, EVK: I will not harm, I will not do harm, Doing good helped." in the sentences, goodness, "KSÖ: I will obey the school rules", obeying the rules in the sentence "KSÖ: I will love my friends", love in the sentences "EET: It was very enjoyable, KZU: I was happy, it was fun" sentences, it can be said that they gained the values of happiness.

Thanks to the games "*Honesty*" and "*Horns in The Air*", awareness about the value of honesty increased in the majority of the class. A few sample sentences showing that students' awareness of the value of honesty rose are given below:

EYB: Thanks to this game, I learnt not to lie.

KAA: The benefit of the game was that it taught honesty.

KND: Saying the right things was the benefit of the game.

EYÇ: The game taught honesty.

EMK: I learnt to be honest.

KAE: I learnt the word honest, I didn't know it.

KSÖ: I learnt the beauty of honesty.

Apart from these sentences, the majority of the class wrote expressions about honesty in the question of the benefits and teachings of the games. This situation can be interpreted as the *Honesty* and *Horns in The Air* games created awareness about the value of honesty in students.

### **Findings related to the Second Sub-objective, "How do the games *Fill and Empty* and *Balloon Dance* help students acquire the value of honesty?"**

As a result of the interviews with the children and the researcher's observations regarding the games played about the value of patience, the following findings were obtained (Table 3):

**Table 3.**

"Values Acquired in "Fill and Empty and Balloon Dancing" Games

| Values              | F  |
|---------------------|----|
| Patience            | 19 |
| Happiness           | 8  |
| Favour              | 6  |
| Integrity           | 6  |
| Respect             | 5  |
| Following the Rules | 4  |
| Love                | 1  |

When the data in the table above were analysed, it was seen that the students gained the value of patience to a great extent thanks to these games as a result of the interviews and observations made with the children after the *Fill and Empty* and *Balloon Dance* games. Following the value of patience, students acquired the values of happiness, kindness, honesty, respect, obeying rules and love, respectively.

In the interview conducted at the end of the game, 16 students explained the concept of patience as waiting, waiting for their turn, while one student answered correctly as holding ourselves, two students as doing/acting slowly, one student as being calm, one student as gritting his teeth, and two students made incomplete or incorrect definitions by explaining the word patience as being excited, being patient.

All of the children found it wrong to behave impatiently. A few students explained their reasons as follows: It is wrong to be impatient. Because; "ENG: If I take the cake out of the oven, I will eat it raw", "KSK: If we don't wait, we will lose. ", "EMK: If we act impatiently, it will be bad and harmful.", "KZU: Things can break. You have to be patient when you get angry. Otherwise, something will break.", "ERO: If you wait patiently, everything will come immediately.", "KAE: We should not get in front of the person in front of us while waiting in line.", "KHH: There will be a fight in the canteen or something.", "KMC: We should be a little patient. We should wait for our time. Otherwise, this will make us lose.", "KES: The things we do may go to waste.", "KEP: If I am impatient while waiting, that thing will not happen.". When these justifications are considered, it is seen that the students have internalised the value of patience.

During the activity, it was observed that the children were eager to play games and wanted to play the same game all the time. In the interviews, they expressed that they had a lot of fun while playing games and that they enjoyed this activity and were happy. They stated that the games were fun, beautiful and good. In addition, the students were sensitive about following the rules of the game. It was even observed that they warned their friends who did not follow the rules or reported them to the researcher. In the interviews, they stated that they would obey the rules while playing games from now on. At the same time, the children asked their friends to treat them well during the game, to



be slow and calm, respectful, honest and patient, to wait their turn, and not to shout, swear, say bad words, hit or push them.

The children stated that from now on, they would pay attention to being patient, and honest, not to go beyond the game, not to fight, not to hit, pushing, shouting, not to make mistakes, to be good, to love, not to cheat, not to be sad when they lose, and to be respectful.

Children's "KHH: I will not shout, KBD: I won't push, EET: I won't upset, EEP: I won't fight, ERO: I learnt to behave nicely." from the sentences of goodness, "EHÖ: I will not say wrong in the game, EUY: I will not cheat, EEP: I learnt not to lie.", honesty from the sentences "EET: I learnt to enjoy, EEP: I had fun, EYE: It taught me to have fun." sentences are happiness, "KBD: I will wait for my turn.", patience and respect, "EYÇ: I will stand my ground, EOB: I learnt not to rush, ENG: I will grit my teeth.", patience from the sentences "EEP: I will be quiet, EYÇ: I will not spill the water, KMC: I will not go out of the game." It can be interpreted that they gained the value of obeying the rules.

Some of the sentences showing that the *Fill and Empty* and *Balloon Dancing* games created awareness in students about the value of patience are as follows:

ERO: I will not leave my seat during the game.

EOB: I won't rush.

EYE: I will do it slowly, not quickly.

KBD: I will wait my turn.

EMK: I will not get ahead of others.

These sentences show that children have started to develop awareness about the value of patience.

### **Findings related to the Third Sub-objective "How do the *Castle and Go Around Behind, Reach Your Place* games help students acquire the value of honesty?"**

As a result of the interviews with the children and the researcher's observations regarding the actions related to the value of responsibility, the following findings were obtained (Table 4):

**Table 4.**

*The Values Acquired in "Go Around Behind, Reach Your Place and Castle" Games*

| Values              | F  |
|---------------------|----|
| Responsibility      | 17 |
| Favour              | 9  |
| Integrity           | 7  |
| Following the Rules | 6  |
| Happiness           | 4  |
| Courtesy            | 3  |
| Solidarity          | 2  |
| Patience            | 2  |
| Respect             | 1  |
| Courage             | 1  |
| Success             | 1  |
| Justice             | 1  |

When the data in Table 4 were analysed, it was seen that the students developed awareness about the value of responsibility the most after the *Go Around Behind, Reach Your Place and Castle* games. During the observations made during the game, the students in the group complained that KMC did not protect the castle and KZU did not listen to the group leader. The group thought that the reason for losing the game was that some students did not fulfill their duties. The answers given by the students in the interviews coincided with the observations made by the researcher during the game. It can be said that after learning the value of responsibility, students became aware of the values of goodness, honesty, obeying rules, happiness, kindness, solidarity, patience, respect, courage, leadership, success and justice, respectively.

When the definition of responsibility was asked in the interviews conducted after the games, 16 students gave correct or close to correct answers by giving explanations such as fulfilling the given task, protecting the castle, doing what they were told, taking on and doing work, taking care of your belongings, your homework is your responsibilities. Four of the seven students gave incorrect answers (courage, patience, not getting involved in something, waiting) and three students could not answer the question.

All of the students stated that it was wrong to behave irresponsibly. They explained the reason as follows: It is wrong to behave irresponsibly. Because "EYE: We will lose the game.", "KZU: We will lose and fail.", "KND: We cannot do our work and we will lose.", "EVK: If we don't do our homework, we will get a low grade. We cannot have a profession.", "KNT: If we behave irresponsibly, things will be lost. We forget their places.", "EET: Irresponsible people bring bad things.", "KES: We cannot do or fulfill anything.", "KSK: Bad things happen if we don't fulfill our responsibilities.", "LET: When you leave the castle, you are defeated.", "KHH: If we are irresponsible, things pile up. Life becomes difficult." When these responses are analysed, it is seen that students comprehend the value of responsibility to a great extent.

The students gave the following answers to the question: "How did you want your friends to behave during the game? Behave well, do not hit, do not play spoilsport, be patient, do not push, plan well, take good care of the places they go, be responsible, protect the prisoners and the castle well, work to win, do not lie, be honest, listen and understand the game well, congratulate, fulfill the task given by the leader, follow the rules, play calmly and slowly, be treated fairly, be respectful. Most of the children expressed that they wanted their friends to fulfill their responsibilities. Similarly, during the observations, it was observed that some students did not listen to the group leader and did not want to fulfill their responsibilities. These students were blamed when the game was lost. When we look at the answers given by the children in the interview form, it is seen that they coincide with the observations. Group leader EYB made a statement in the interview: "When they did not listen to me and did not fulfill their responsibilities, sometimes we could not win the game."

When asked which rules they would pay attention to while playing games from today onwards, the children gave the following answers: EYE: I will listen to others, EET: I will be honest and respectful, EYB: I will fulfill my responsibilities, KHA: I will listen to the responsibility given to me, KAE: I will obey the rules of the game, KHH: I will do the assigned task, KZU: I will not be a spoilsport, EMK: I will keep my word, EOB: I will listen to the plans, KMC: I will not upset the group leader, KBD: I will be patient, KSÖ: I won't get angry and I won't talk back, EUY: I will not cheat, EEP: I will form a good team and play well, KEP: I will congratulate the winner, I will behave well. The students stated that they wanted each student in the groups to fulfill their responsibilities and that they would fulfill their own responsibilities in future games.

In children, "EYB: I will do what my friends say, EYE: I will listen to others, KZU: If we don't do what we are told and no one is left in the castle, the castle will be taken and they will win, KMC: I will not upset the group leader. They didn't listen to what the leader said, EOB: I will listen to the plans, KSK: The game taught us to know our duty." responsibility, "KES: I will not lie, EUY: I will not cheat." honesty, "EET: I will not push my friend, KHA: I will not hit, KNT: I will behave well, KAA: I will not be unfair." kindness, "EYE: Games taught me to have fun, I was happy, KNT: I enjoyed it." expressions of happiness, "KHA: The game taught me how to win.", success, "KAE: The game taught me to be fair." statement can be interpreted as raising awareness about the values of justice.

At the end of the games "Go Around Behind, Reach Your Place" and "Castle," students developed awareness about the value of responsibility. The interview sentences of a few students showing that this awareness has occurred are given below.

KHH: From now on, I will do the given task while playing games. We should not forget our numbers.

ESL: I will do my duty in games from now on.

EOB: I will listen to the plans, then we will win.

ENG: I learnt to fulfill my responsibilities while playing games.

KSK: The game taught us to know our duties.

KMC: The game taught me responsibility.

EEP: From now on, while playing the game, a leader will be elected and everyone will be given a task.

EEP: The game taught me to take responsibility.

KZU: If no one is left in the castle, if no one does what someone says, the castle is taken and they win.

KHA: After today, I will listen to the responsibilities given to me while playing the game.

Answers similar to these examples were frequently encountered during the interview. This situation can be interpreted as an awareness of the value of responsibility in children after the related games.

## Results and Discussion

In this study, it was tried to determine whether educational games were effective in raising awareness about the values of responsibility, patience and honesty within the scope of the Physical Education and Game course programme. The results of the data obtained from the interviews and observations are given below.

As a result of the interviews conducted after playing the game of "*Honesty*" and "*Horns in The Air*," it was determined that the students gained the most value from honesty. Students mostly know what the word honesty means. All of the participants think that lying is wrong. Most of the children expressed that they wanted their friends not to lie to them and to be honest while playing the game. The students mostly said that they would pay attention not lie and be honest in the games they would play from now on.

After the "*Fill and Empty*" and "*Balloon Dance*" games, it is seen that the students mostly developed awareness about the value of patience. Children mostly know the meaning of the word patience. Children think that it is wrong to behave impatiently. It was observed that the students had a lot of fun while playing the games and wanted to play the games again.

As a result of the interviews with the students who played the games "*Go Around Behind, Reach Your Place*" and "*Castle*," it was observed that the students developed awareness about the value of responsibility. During the observations, the participants stated that they lost the game because of the students who did not fulfill their responsibilities during

the game. This situation is also compatible with the results of the interviews. Most of the children know the meaning of the word responsibility. All of the students stated that irresponsibility is wrong. Most of the participants said that they wanted their teammates to fulfill their duties and responsibilities and that they would fulfill the responsibilities given to them in the next games.

There are few studies in the literature examining the effect of educational games on value education. To give an example of these studies, Bozkurt (2017) examined the effect of games on values education in his study. He stated that when games are intensified with values, value teaching will become more permanent in children. Biter and Çalışkan (2019) examined whether educational games are effective for value education. They found that games developed values in students. Izgar (2020) stated that educational games prepared to teach values (honesty, friendship, responsibility, patience, equality, solidarity, justice) positively affect students' cognition levels. Gündüz, Aktepe et al. (2017) stated that values can be acquired at an early age through educational games in their research on preschool students. Similar to the studies mentioned above, in this study, it was determined that the education carried out with educational games created awareness about values in students.

According to the results of the present research, it is seen that while awareness is raised about many values through educational games, the values gained the most are honesty, responsibility and patience. In this study, students stated that they gained the value of honesty the most with the games *Honesty* and *Horns in the Air*. After learning the value of honesty, students became aware of the values of kindness, happiness, respect, obeying the rules and love, respectively. In the games *Fill and Empty* and *Balloon Dance*, students were most aware of the value of patience. After the value of patience, students acquired the values of happiness, kindness, honesty, respect, obeying the rules and love, respectively. After responsibility, the values that created awareness in students are as follows: Goodness, honesty, obeying the rules, happiness, kindness, courtesy, solidarity, patience, respect, courage, success, and justice, respectively. Biter and Çalışkan (2019) stated in their study that similar to this study, educational games develop responsibility values in students. Bozkurt and Mehmet (2018) found that students learnt the value of responsibility through the game of handkerchief snatching. According to Gündüz et al. (2017), students acquired the values of respect, kindness, happiness, helpfulness, tolerance, responsibility, patience, belonging, sensitivity, courage, justice and goodness through educational games.

There are also studies in the literature that reach different results from this research. Işıkgöz et al. (2018) stated that secondary school students have the highest awareness value and the lowest national culture and solidarity value in physical education and sports lessons. Students have the value of respect in second place and solidarity in third place. Keleş and Yoncalık (2019) conducted a study on 307 eighth-grade students and stated that the value that students gained the most in physical education class was courage and leadership.

In our research, as a result of the use of educational games in the lesson, it was determined that students enjoyed the lesson, had fun, learnt and were happy. Similar to this research result, according to Bolat's (2018) study, students think that educational games are teaching, educating, entertaining, intertwined with real life and creative. Biter and Çalışkan (2019) also stated in their study that students had fun while learning and their interest in the lesson increased through educational games.

As a result, it was observed that educational games within the scope of physical education and game lessons were effective in raising awareness about values education in students. In addition, students stated that they had fun and had a good time while playing games.

### **Recommendations**

There are some limitations in this study. Based on these limitations, some suggestions are made below for future academic studies:

- In this study, the action process was limited to two weeks. Future research may cover a longer period of time.
- In the study, the effect of six educational games on value education was analysed. It is recommended to increase the number of games in other studies.
- Three values were analysed in the study. In future studies, educational games can be used to teach different values.
- The study is limited to third-grade primary school students and includes physical education and game lessons. Value education with educational games can be investigated in all courses and classes.
- In future studies, the development of values in children can be monitored by applying a pre-test and post-test.
- Studies can be conducted to test the permanence of values.
- The qualitative method was preferred in this study. In future studies, the qualitative method can be supported by the quantitative method and detailed research can be conducted.

Below, some suggestions are made to teachers, the Ministry of National Education, curriculum development experts and universities regarding values education:

- The use of educational games in values education should be popularised.
- In-service training should be given to teachers who are practitioners to carry out values education through games.

- In the faculties of education of universities, training should be given on the processes of designing, conducting and evaluating games related to values education.
- Games intensified with values should be added to the Physical Education and Games course programme.
- There are a limited number of studies in the literature on values education with educational games in physical education and games course. More studies should be conducted on this subject. curriculum development experts and universities regarding values education:

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## Genişletilmiş Türkçe Özet

### Amaç

Bu araştırmada ilkokul 3. sınıf öğrencilerine Beden Eğitimi ve Oyun dersi kapsamında programda yer alan sorumluluk, sabır, dürüstlük değerleri ile ilgili farkındalık kazandırılması noktasında eğitsel oyunların etkililiğinin ortaya çıkarılması amaçlanmaktadır.

### Araştırma Modeli

Bu araştırma nitel araştırma desenlerinden eylem araştırması türlerinden teknik/bilimsel/işbirlikçi eylem araştırması ile desenlenmiştir. Öğrencilere araştırmacı tarafından eğitici oyunlar uygulanmış ve görüşmeler birebir gerçekleştirilmiştir. Uygulamanın ardından yapılan eylemlerin değerlendirmesi yapılarak araştırma sonlandırılmıştır. Sınıf ortamının doğallığına herhangi bir müdahale yapılmaması, uygulama sırasındaki gözlem ve görüşmelerin çalışmaya dahil edilerek değerlendirilmeye tabii tutulması sebebiyle teknik/bilimsel/işbirlikçi eylem araştırması deseni, çalışmaya en uygun desen olarak kabul edilmiştir.

### Çalışma Grubu

Bu araştırmanın çalışma grubunu 2021-2022 eğitim-öğretim yılında İstanbul Ümraniye'de bir devlet okulunun 3. sınıfında öğrenim gören 23 öğrenci oluşturmaktadır. Çalışma grubu belirlenirken amaçlı örneklem alma yöntemi olan kolay ulaşılabilir durum örnekleme tercih edilmiştir.

### Veri toplama

Araştırmanın verileri gözlemci notlarından ve öğrenci görüşmelerinden elde edilmiştir.

Başvuru süreci video ve ses kaydı ile kayıt altına alınmıştır. Bu kayıtlar sayesinde öğrencilerin katılımının ve uygulamaların işe yarayıp yaramadığının değerlendirilmesi amaçlanmıştır. Kayıtlar gerektiğinde tekrar dinlenilmek üzere muhafaza edilmiştir.

### Uygulama süreci

Uygulama okul bahçesinde ve sınıfta gerçekleştirilmiştir.

Araştırmacı uygulamanın yapıldığı sınıfın öğretmenidir. Araştırmacı, katılımcı öğrencilere ve velilere araştırmanın amacı, kapsamı ve onam formunu içeren bir belge göndererek süreç hakkında bilgilendirme yapmış ve gönüllü öğrencilerin araştırmaya katılmasını sağlamıştır. Öğrenciler 2 hafta boyunca 6 eğitsel oyun oynamıştır. Her oyun öncesi ders ısınma oyunları ile başlatılmış, oynanacak oyun tanıtılarak kurallar belirlenmiştir. Oyunlar oynanırken öğrenciler; hiçbir müdahale yapmadan gözlemlenmiş, notlar alınmış ve süreç videoya kaydedilmiştir.

Her oyunun ardından öğrencilerle açık uçlu sorularla görüşmeler yapılarak görüşmeler kayıt altına alınmıştır. Araştırmacı, gözlem ve görüşmeler sırasında öğrencileri

zorlamamış, kendi düşüncelerini sürece yansıtmamış, sadece öğrencilerin fikirlerini ortaya çıkarmaya çalışmıştır.

### Veri Analizi ve Yorumlama

Gözlemci notlarından ve öğrenci görüşmelerinden elde edilen nitel verilerin analizi betimsel analiz yöntemiyle yapılmıştır. Öğrenci görüşmelerinden elde edilen veriler doğrudan alıntılanmıştır. Doğrudan alıntılanan cevaplar anlamlı bir şekilde yorumlanıp açıklanmıştır.

Video ve ses kayıtlarında öğrencilerin kimlikleri gizlenmiş olup, analizler kendilerine verilen kodlar üzerinden gerçekleştirilmiştir.

### Sonuçlar

"Dürüstlük ve Boynuzlar Havaya" oyunu oynandıktan sonra yapılan görüşmeler sonucunda öğrencilerin en fazla dürüstlük değerini kazandığı belirlenmiştir. Öğrenciler genellikle dürüstlük kelimesinin ne anlama geldiğini bilmekte ve tamamı yalan söylemenin yanlış olduğunu düşünmektedir. Çocukların çoğu oyun oynarken arkadaşlarının kendilerine yalan söylememesini ve dürüst olmalarını istediklerini belirtmişlerdir. Öğrenciler bundan sonra oynayacakları oyunlarda çoğunlukla yalan söylemeyeceklerini ve dürüst olacaklarını söylemişlerdir.

"Doldur Boşalt ve Balonla Dans" oyunları sonrasında öğrencilerin çoğunlukla sabır değerinin farkına vardıkları görülmektedir. Çocuklar çoğunlukla sabır kelimesinin anlamını bilmekte ve sabırsız olmanın yanlış olduğunu düşünmektedirler. Öğrencilerin oyunları oynarken çok eğlendikleri ve oyunu tekrar oynamak istedikleri gözlenmiştir.

"Arkadan Dön, Yere Ulaş ve Kale" oyunlarını oynayan öğrencilerle yapılan görüşmeler sonucunda öğrencilerin sorumluluk değerinin farkına vardıkları görülmüştür. Yapılan gözlemlerde katılımcılar, öğrencilerin oyun esnasında sorumluluklarını yerine getirmemeleri nedeniyle oyunu kaybettiklerini ifade etmişlerdir. Bu durum görüşme sonuçlarıyla uyumludur. Çoğu çocuk sorumluluk kelimesinin anlamını bilmekte ve çocukların tamamı sorumsuzluğun yanlış olduğunu ifade etmektedirler. Katılımcıların çoğu takım arkadaşlarının görev ve sorumluluklarını yerine getirmelerini istediklerini, kendilerine verilen sorumlulukları sonraki oyunlarda yerine getireceklerini ifade etmişlerdir.

### Tartışma

Literatürdeki çalışmalara benzer şekilde (Bozkurt, 2017; Biter ve Çalışkan, 2019; Gündüz, Aktepe, Uzunoğlu ve Gündüz, 2017; Izgar, 2020) bu çalışmada da eğitsel oyunlarla yürütülen eğitimin değerlerle ilgili öğrencilerde farkındalık yarattığı tespit edilmiştir.

Öğrenciler en çok "Arkadan Dolaş, Yerine Ulaş" ve "Kale" oyunlarında sorumluluk değerinin farkına varmışlardır. Biter ve Çalışkan (2019), Bozkurt ve Mehmet (2018) bu araştırmaya benzer şekilde öğrencilerde sorumluluk değerinin oyunlarla geliştiğini tespit etmişlerdir.

Araştırmada öğrenciler oyun oynarken eğlendiklerini ve güzel vakit geçirdiklerini belirtmişlerdir. Bu araştırma sonuçlarına benzer şekilde Bolat (2018), Biter ve Çalışkan (2019) eğitsel oyunların dersi eğlenceli hale getirdiğini ifade etmişlerdir.

### Öneriler

Bu çalışmanın sınırlılıklarından yola çıkarak gelecekte yapılacak çalışmalarda; İncelenen oyun sayısının artırılması, daha fazla değerin incelenmesi, nitel ve nicel yöntemlerin birbirini destekleyecek şekilde kullanılması, uygulama süresinin artırılması; öğretmenlerin derslerde eğitsel oyunların kullanımını artırmaları; üniversitelerin eğitim fakültelerinde değerler eğitimi ile ilgili oyun tasarlama, yürütme ve değerlendirme süreçlerine ilişkin eğitim verilmesi; öğretmenlere değer eğitiminin oyun aracılığıyla yürütülmesi için hizmet içi eğitim verilmesi; araştırmacıların beden eğitimi ve oyun derslerinde değerler eğitimi üzerine çalışma yürütmeleri önerilmektedir.

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| Authors        | Contact                                                                          |
|----------------|----------------------------------------------------------------------------------|
| Büşra Usta     | Marmara University, Faculty of Education<br>E-mail: b.yildiz_79@hotmail.com      |
| Bilal Yorulmaz | Marmara University, Faculty of Education<br>E-mail: bilalyorulmaz@marmara.edu.tr |

# Bridging the Digital Divide in Migrant Education: Critical Pedagogy and Inclusive Education Approach

Aylin Akinlar\*, Merih Uğurel-Kamisli\*\*, Hilal Seda Yildiz\*\*\*, Aras Bozkurt\*\*\*\*

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**Abstract:** This review paper explores the relationship between migration and issues of social justice, inequalities, and access to education which have been exacerbated recently with the emergence of the Coronavirus (COVID-19) pandemic and have taken on a new dimension with the digitalization of education specifically for refugees among other immigrants. It addresses the use of Technology Enhanced Learning (TEL) and Information and Communication Technologies (ICTs) in practices of inclusion and adaptation of refugees. Additionally, this scoping literature review introduces accessible, sustainable, and effective practices that could help displaced adults and children overcome the adverse effects and inequalities experienced by migration. The idea that critical pedagogy provides a firm ground and implications for multicultural education is emphasized. Solutions and recommendations regarding program, curricula, and syllabi development are presented to create a more inclusive educational ecosystem for displaced people.

**Keywords:** Digitalization of education, digital divide, refugee experiences, critical pedagogy, scoping literature review

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\*  Corresponding Author: Assistant Prof. Dr. Bandirma Onyedi Eylül University, Türkiye, aakinlar@bandirma.edu.tr

\*\*  Assistant Prof. Dr., TED University, Faculty of Education, Türkiye, merih.kamisli@tedu.edu.tr.

\*\*\*  Lecturer Dr., Arden University, Academic and Professional Development, UK, hilal.yildiz@tedu.edu.tr.

\*\*\*\*  Associate Professor Dr., Anadolu University, Faculty of Open Education, Türkiye, arasbozkurt@anadolu.edu.tr.



## **Bridging the Digital Divide in Migrant Education**

Socio-economic and political transformations as well as improvements in communication and technology caused unprecedented numbers of people to move around the world (Arar et al., 2020; International Organization for Migration [IOM], 2020). According to IOM (2020), international migrants have reached around 272 million people globally constituting 3.5% of the world's population. According to a report published by the Organization for Economic Co-operation and Development (OECD, 2019a), the number of migrants in OECD nations has grown by 30% since 2000. The UN Refugee Agency Global (2020) reports that by the end of 2020, a total of 82.4 million people had been forcibly displaced due to human rights abuses, discrimination, or other conflicts. That included 26.4 million refugees, 48 million internally displaced people, 4.1 million asylum-seekers, and 3.9 million. Alarming, data on global migration show that children account for a critical number of global migration influxes, specifically the displaced population. Children under 18 comprise around 35 million (42%) of the 82.4 million displaced people (UNHCR, 2020).

Since most of the world's refugee population resides in developing countries and undeveloped countries host around 6.7 million refugees (UNHCR, 2020), the influx of migrants bears challenges for those countries with limited resources to provide accessible and quality education, support, and services to meet migrants' economic, social, and psychological needs. Accordingly, when compared to non-migrants, many migrants from lower socioeconomic backgrounds attend disadvantaged schools, have inferior academic performance, and report variable levels of life satisfaction (OECD, 2019b).

Furthermore, the recent COVID-19 epidemic has demonstrated that immigrant and refugee students were among the most vulnerable throughout the crisis. Worldwide school and university closures were brought on by the COVID-19 epidemic, which has had an impact on education (OECD, 2021b). More than a billion students had to continue classes online while others had to delay their education for a long time.

The epidemic has shown how vulnerable education institutions are to a sudden, unanticipated global disaster, but it has also made inequality and the digital divide in access to education and usage of digital technologies more evident than ever. The digital gap has become more pronounced for those who were already underprivileged because they did not have computers and the internet, neither the resources nor appropriate conditions to continue their education at home.

Undoubtedly, the crises that have occurred throughout the globe have had an evident impact on vulnerable populations. Thus, it is critical to investigate the circumstances generated by this influence and to disclose the existing condition to gain a deeper understanding of the relationship between displacement and education. In this study, a critical pedagogy lens was employed in the process of assessing the existing situation, identifying the impacts it has caused, and addressing the proposed solutions within the



framework of field research. As a result, strategies have been devised by studying the educational experiences of refugees as one of the most fragile groups worldwide.

## **Theoretical Framework and Related Literature**

Within the context of this study, critical pedagogy is defined as an understanding that views the main duties of educators as being to ensure that the future brings a socially fair world. A society in which the virtues of reason, freedom, and equality fight to change the underlying principles of life as part of a wider democratic mission (Freire, 2000). Pedagogy is always an intentional endeavor for educators as it affects the way knowledge is formed and acquired through social interactions. In that sense, it highlights the ways knowledge, power, intentions and experience are created in certain learning environments (Giroux, 2021). Giroux (2020) describes critical pedagogy “as an entry point in the contradictory nature of schooling, an opportunity to force it toward creating circumstances for a new public sphere” (p. 116). In order to be able to resist oppressive institutions and structures, it is the responsibility of the educator to help learners gain critical thinking skills (Freire, 2000).

Previous research in the related literature has demonstrated that programs based on Freire's concept of critical awareness may give a wide range of advantages to refugees and internally displaced people (Magee & Pherali, 2019). Garcia (2015) shows the significance of art-based critical education and raising immigrant students' social and political consciousness. In Stevenson and Beck's (2017) research on a literacy program for migrants, findings indicate that socio-culturally responsive critical literacy pedagogy with supporting teaching resources promotes students' development of conscientization. Fostering students' critical thinking skills to raise citizens that would promote and thus create a fair society is one of the most crucial aims of education. Therefore, critical pedagogy (Kantol, 1999; Uddin, 2019) may pave the path for reinforcing students' awareness of social justice and equality by providing instruments and strategies to examine and strive to change the learning environments.

Critical pedagogy is concerned with “human agency and their lived experiences as well as the role of class structure and struggles in developing consciousness” (Sleeter & Delgado-Bernal, 2004, p. 241). In terms of its core principles, ethical principles, and theoretical scope, critical pedagogy will contribute to this study by providing several concepts concerning multicultural education (Sleeter & Delgado-Bernal, 2004) which is crucial for students to develop the necessary knowledge, abilities, and viewpoints to become successful citizens across the world (Banks, 2019). As the definitional focus of educational technology also emphasizes, maintaining culture-related problems like relevance, access, equality, and inclusion front and center (Bradshaw, 2017), critical pedagogy posits a critical lens to investigate digitalization and migrant education.

Looking from the lens of critical pedagogy, the purpose of this scoping literature review is to investigate the research on the issues of social justice, inequity, and access to education that have recently been exacerbated by the emergence of the Coronavirus

(COVID-19) pandemic and have taken on a new dimension with the digitalization of education, specifically for refugees among other immigrants. This review paper specifically aims to investigate “What is known and what is the current situation regarding the democratization of education through digital technologies and the use of Technology Enhanced Learning (TEL) and Information and Communication Technologies (ICTs) in practices of inclusion and adaptation of refugees through a critical pedagogy lens?”

The novelty of the research is in the way it describes the use of digital technologies to democratize education and focuses on the application of Technology Enhanced Learning (TEL) and Information and Communication Technologies (ICTs) in refugee inclusion and adaptation strategies. Furthermore, this scoping literature review offers techniques that are accessible, durable, and effective in assisting displaced adults and children to overcome the negative effects and disparities associated with migration. It is underlined that critical pedagogy provides a solid foundation and has consequences for multicultural education. To build a more inclusive educational ecosystem for displaced individuals, solutions and proposals for program, curriculum, and syllabus development are offered.

## Method

A scoping literature review aims to outline the research on a particular subject or area of research and help researchers define the key concepts, knowledge gaps, and proofs to guide application, policy and practice (Daudt et al., 2013). Scoping literature reviews describe current literature and other sources of information, and they frequently contain findings from various study designs and approaches (Davis et al., 2009).

In this review, the trustworthiness of the findings was made more credible by adhering to well-known scoping review reporting requirements and a methodological approach. It was also important to manually explore the literature to guarantee the process's reliability (Sucharew & Macaluso, 2019). In order to enhance the validity of the scoping review, researchers adhered to the scoping literature review framework suggested by Arksey and O'Malley (2005) which provided structured steps for conducting the review. The review protocol was further refined by the PRISMA protocol (Page et al., 2021) which helped organize the identification of studies via data pages and registers as shown in Figure 1.

Data collection and analysis methods for scoping literature reviews are explained through the steps of the Scoping Literature Review Framework proposed by Arksey and O'Malley (2005). The scoping literature review framework proposed by Arksey and O'Malley (2005) includes the following five stages: (1) developing research questions, (2) identifying relevant studies and search terms, (3) study selection, (4) charting the data, and (5) summarizing and reporting the results.

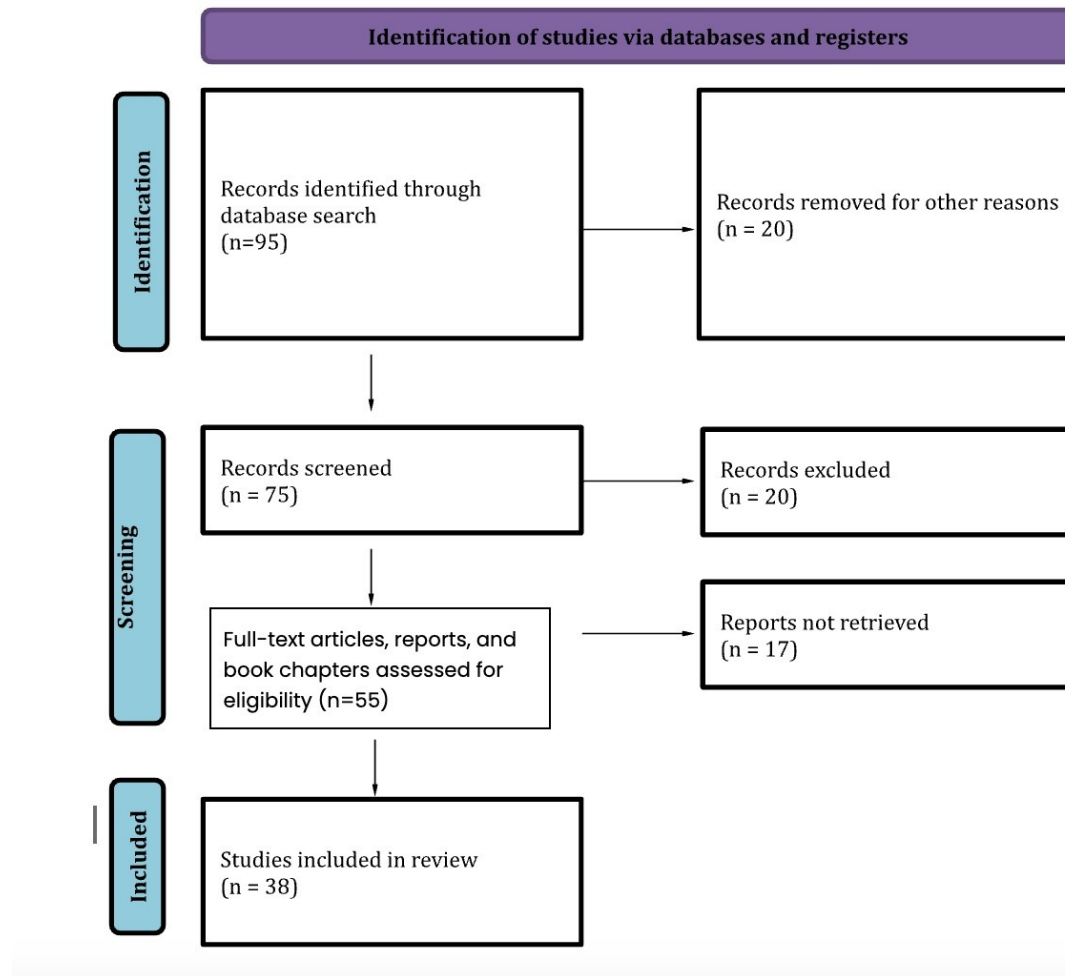
**1. Developing the research question:** As a first step in the study, we identified the research question which is “What is known and what is the current situation regarding the democratization of education through digital technologies and the use of Technology Enhanced Learning (TEL) and Information and Communication Technologies (ICTs) in practices of inclusion and adaptation of refugees through a critical pedagogy lens?”

**2. Identifying Relevant Studies and Search Terms:** In this stage, we searched the Scopus Database for relevant studies related to *the digitalization of education, the digital divide, refugee experiences, Covid-19, and critical pedagogy*, as well as the related grey literature publishers such as UNESCO, The World Bank, and the OECD which provided a broader representation of diverse populations. We used both single and combined search strings including: digitalization of education, digital divide, refugee and immigrant experience, Covid-19, and critical pedagogy. The combined search strings included: "Inclusion" AND "Digitalization of Education" AND "Migrant education" AND "Covid-19", "Inclusive education", "Critical Pedagogy" AND "immigrant learners" OR "refugee learners" AND "Digitalization of education".

**3. Study Selection:** After the search for related studies on the Scopus database and report providers such as UNESCO and UNHCR, we found studies (n=95) including conference papers (n=37), work-in-progress papers (n=20), published papers (n=20), recently published reports (n=15), and book chapters (n=3). The following diagram depicts the data selection process which includes the identification of studies via databases and registers through screening and inclusion criteria. As illustrated in Figure 1, following the PRISMA protocol (Page et al., 2021), a database search yielded 95 results. 20 records were eliminated for reasons such as being unrelated to population, context, or scope. 75 publications were reviewed, with 20 being rejected as they were irrelevant and not a good fit for the purpose of the study. We aimed to investigate literature with proof of practice, thus, conference papers were also excluded from the literature database. Full-text articles, reports, and book chapters were evaluated for eligibility (n=55), with 17 of them not retrievable. Finally, 38 studies were selected for inclusion.

Figure 1.

Identification of Studies via Databases and Registers through the PRISMA Protocol (Page et al. 2021)



A summary and count of themes we searched for, publication year ranges, and publication types are shown in the following Table 1.

#### 4. Charting the Data:

The charting of findings was the fourth phase. After we decided to include each study based on the inclusion and exclusion criteria, summaries for each article are combined under a number of themes. Table 1 illustrates the distribution of publications according to themes, publication year, and type. 22 of the publications discussed the digitalization of education, 20 discussed the digital divide, 32 discussed immigrant and refugee experiences, 5 discussed COVID-19, 11 discussed critical pedagogy, and 45 discussed inclusive education. 20 of the publications were articles, 3 were book chapters, and 15 were reports.

**Table 1.**

*Distribution of Publications according to Themes, Publication Year, and Type*

| Themes                 |                                |                    |                                       |          |                      |                        |
|------------------------|--------------------------------|--------------------|---------------------------------------|----------|----------------------|------------------------|
|                        | Digitalization of<br>education | Digital<br>Divide" | Immigrant &<br>Refugee<br>experiences | COVID-19 | Critical<br>Pedagogy | Inclusive<br>Education |
| n                      | 22                             | 20                 | 32                                    | 5        | 11                   | 45                     |
| Publication Year Range |                                |                    |                                       |          |                      |                        |
|                        | 1948-1999                      | 2004-2014          | 2015-2021                             |          |                      |                        |
| n                      | 1                              | 2                  | 35                                    |          |                      |                        |
| Type                   |                                |                    |                                       |          |                      |                        |
|                        | Articles                       | Book<br>Chapters   | Reports                               |          |                      |                        |
| n                      | 20                             | 3                  | 15                                    |          |                      |                        |

Following that, we discussed the determined themes in light of the literature we identified.

**5. Summarizing and Reporting the Results:** The final phase of the scoping literature review was to synthesize and submit results based on the steps taken. Creating summaries for each study made it easy to follow and debate the findings in light of the research questions.

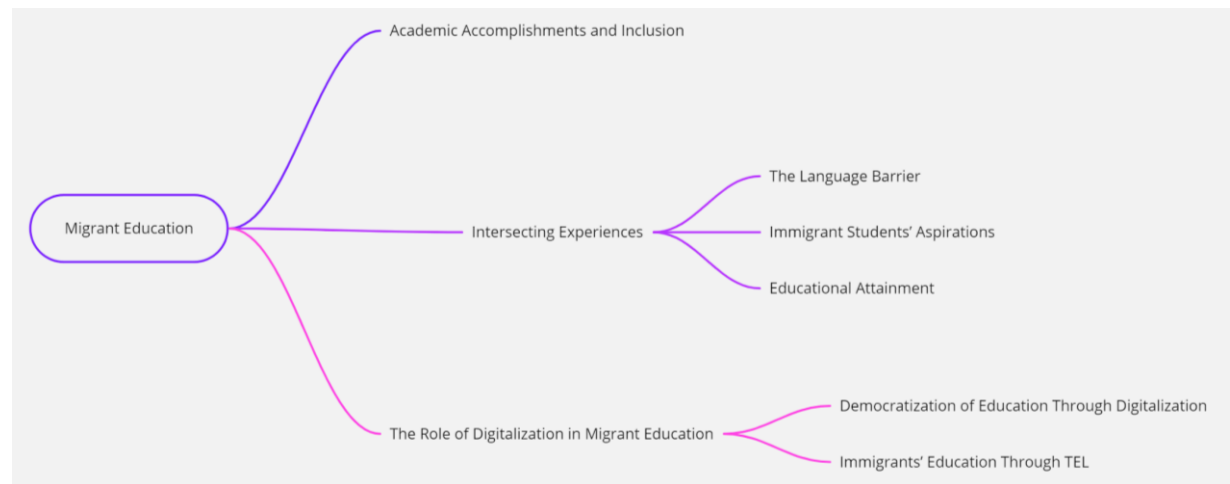
## Findings

The selected studies are discussed with regard to the research question: “What is known and what is the current situation regarding the democratization of education through digital technologies and the use of Technology Enhanced Learning (TEL) and Information and Communication Technologies (ICTs) in practices of inclusion and adaptation of refugees through a critical pedagogy lens?”

We organized the results into three major themes in this section (see Figure 2). The results include the OECD, UNHCR, and UN reports on (1) academic accomplishments and inclusion of migrants, (2) intersecting experiences that affect their adaptation: language barriers, aspirations, and educational attainment. Lastly, (3) the role of digitalization in migrant education: the role of digitalization in the democratization of education and immigrants’ education through TEL.

**Figure 2.**

*Themes Emerged as a Result of the Scoping Literature Review*



### 1. Academic Accomplishments and Inclusion

The findings of the scoping literature review resulted in a number of reports that are related to the academic accomplishments of immigrant and displaced students. We examined the Program for International Student Assessment (PISA) results which include all 37 OECD countries, and 42 of its partner economies to measure 7th and 8th graders' knowledge and skills to develop a thorough understanding of immigrant and displaced students' inclusion and academic accomplishment. PISA results inform us about students' inclusion and academic life regardless of their background and fairness in the way they are included in their social and academic life. The data on the academic performance and background of grade 7 or higher students enrolled in an educational institution (OECD, 2021a) show that 13% of the students in OECD countries are immigrants with a low-income profile. According to the PISA reading performance report (OECD,

2019b), nonimmigrant students scored 42 points higher than immigrant students across OECD countries. It is important to note that the countries where higher performance differences favoring nonimmigrants were observed have been the destination for immigrants with low income and low education backgrounds for a long time and recently experienced a migrant influx for humanitarian reasons. On the other hand, in some countries with successful education outcomes such as Canada, the United Kingdom, and the United States, immigrant students scored over the bottom score in general. When both the socioeconomic backgrounds of schools and students were considered, the relationship between immigrant students' performance and socioeconomic status was also significant in countries like Qatar and the United Arab Emirates, where most migrant students came from educated families with a higher socioeconomic background and outscored host country students (OECD, 2019a).

## **2. Intersecting Experiences**

The reports and studies included in the scoping review outline several challenges intersecting in the migrant and displaced student experiences. The immigrant integration report (OECD, 2019a) suggests immigrants experience various forms of disadvantages intersecting with their immigrant background. Some of the challenges include experiences of social exclusion and discrimination, language barriers, a higher risk of school leaving, and “neither employment education nor training (NEET)” than their nonimmigrant peers. Education and training programs are the primary means for immigrants to overcome those challenges. Through education, immigrants can gain skills that the labor market requires, contribute to the community, build social relationships, and learn about the cultural values and traditions of the host country.

The Universal Declaration of Human Rights (Article 26) states that the right to education is one of the basic human rights for everyone in the world, meaning that primary education is globally compulsory and free (UN, 1948). Article 26 states that *the right to education* also includes accessible elementary, fundamental, and higher education which is mostly free for everyone. However, as the review of intergovernmental global reports indicates, the host countries often struggle to integrate the influx of immigrants into their education systems. Thus, being left behind in education adds another layer of subordination to the immigrant and refugee background and challenges their integration into the host country. The major intersecting difficulties and gaps experienced by migrant children and youth in accessing education include the following: a lack of adequate training and guidance for teachers to provide psychological support for refugee and migrant students, and the need for advanced multiculturalism (UNHCR-UNICEF-IOM, 2019).

### **2.1. The Language Barrier**

The findings illustrated studies that indicate learning the language of the host country as part of the challenges in migrant education. When the language that immigrants speak at home is considered, the data (OECD, 2019a) indicate that immigrant students who

use the medium of instruction at home score higher than those who speak their mother tongue. Miyamoto et al. (2020), in their study of immigrant students' achievements and motivation, emphasize the role of using the medium of instruction in everyday life for immigrant students to attain better reading scores, ambition, academic motivation, and understanding. Matthews and López (2019) similarly, pointed out the relationship between speaking the language of instruction in the school context and academic achievement. However, they also suggest the benefits of language diversity and the need for a balanced focus on minority languages at home and instruction languages at school. Unfortunately, not many education systems support the language training immigrants need to have for successful integration into the host communities (OECD, 2015).

## **2.2. Immigrant Students' Aspirations**

A set of studies included in this review emphasized immigrant student goals and expectations in relation to social orientation, status, and academic achievement (Chykina, 2019; Feliciano & Lanuza, 2016). Immigrant students reported having greater goals than their nonimmigrant peers when their socio-economic backgrounds, reading scores, and school profiles were taken into consideration in response to the PISA (OECD, 2019b) survey. The results indicate that the higher the socioeconomic background and academic performance immigrant students had, the more they expected to complete tertiary education in the future. Similarly, compared to the parents of their non-immigrant peers who come from the same socio-economic background, immigrant students' parents reported having greater expectations for their children in terms of their attainment of tertiary education (OECD, 2015). In nations like Germany, Belgium, and Hungary, where immigrant kids do not do better academically or come from wealthier homes, parents expect their children to have a higher education degree. The findings show that both immigrant students and their parents have aspirations to continue education and pursue college degrees. They are keen to take advantage of educational possibilities in their host countries.

Since aspirations for education are related to further participation and commitment, it is important to understand the nature of expectations (Chykina, 2019). The positive and high educational expectations of migrant youths have been attributed to a variety of reasons such as the value of education for immigrants and the desire for an upward social status change (Hadjar & Scharf, 2019; Salikutluk, 2016), immigrant optimism (Kao & Tienda, 1995), the social atmosphere and ingroup orientation of immigrants at school, or to the migration background in general (Wicht, 2016).

## **2.3. Educational Attainment**

Another theme identified in the selected literature reviewed referred to the educational attainment of migrant learners in relation to inclusion and educational status. Contrary to the high aspirations of immigrant youth to continue education, the data from migrant integration statistics (Eurostat, 2020) drawn from the EU labor force survey (EU-LFS)



show that most of the 18-24 years old early leavers from education and training were immigrants. The number of immigrant early school leavers was lower only in a small number of countries such as Ireland, the Netherlands, and the United Kingdom. Similarly, the rate of immigrant youth aged 15-29 who had neither employment nor education or training (NEET) was greater (24.6%) than the percentage of the native-born population (18.6%) in the EU countries (Eurostat, 2020).

Immigrants' educational attainments greatly vary depending on their migration conditions and the immigration policies of the host countries. While the number of educated migrants might be high in countries with selective migration policies for some nations, the number of less-educated migrants can exceed the number of natives when the immigrants come from poorer countries with fewer educational resources and attainments (UNESCO, 2019). For example, according to the American Community Survey data (Bandyopadhyay & Grittayaphong, 2020), the number of immigrants who do not have a high school degree is greater than the non-immigrant population in the U.S. However, the number of non-immigrant populations is slightly lower than the rate of immigrants in terms of educational attainment above a high school degree. Educational attainment of immigrants is higher on both "no high school degree" and "graduate-level degree" rates reflecting the heterogeneity of immigrant backgrounds, the demand for the low-skilled, manual labor force as well as the changes in immigration policy towards favoring the highly skilled people in the U.S. (Radford & Krogstad, 2019).

In terms of the educational attainment of refugees among other immigrants, there is a notable divide between their capacities and opportunities to access education, specifically for girls. Even though 77% of refugee children enrolled in primary schools (remaining stable with the previous year), 31% of refugees were enrolled in a secondary school which included only 27% of girls (UNHCR, 2020). On the other hand, 3% of refugee youth participated in higher education programs comprising vocational and technical education courses. The data collected from the UNHCR database in 2019 suggests that, unfortunately, across the sample of 12 countries, 1.8 million school-age refugee children are out of school. Even though the 12 countries cannot represent the educational status of refugees globally, it provides an insight into the challenges experienced by refugees.

### **3. The Role of Digitalization in Migrant Education**

A set of reports responded to the research question on the use of Technology Enhanced Learning (TEL) and Information and Communication Technologies (ICTs) in practices of inclusion and adaptation of refugees from a critical pedagogy lens in the following themes and subthemes 3.1. and 3.2. As the UNHCR (2021) report reveals, living as a displaced person (refugee, asylum seeker, etc.) in a nation poses social, cultural, and economic obstacles. In order to overcome these obstacles, host countries should recognize current issues, devise innovative solutions, and guarantee that immigrants, refugees, and asylum seekers feel socially, culturally, and economically integrated. It is critical to address the educational demands of both adults and children and to establish

an inclusive living environment for migrants. Currently, there are 82.4 million forcibly displaced people as a result of conflict, violence, human rights violations, and persecution (UNHCR Statistics, 2021). This information gives researchers, social services, and governments liability for the social integration of immigrants into the new environment and for living equally with citizens. Having at least self-sustaining knowledge of the language and culture of the country of destination is one of the essential constituents of being a member of society.

Fairness and inclusion have been two essential topics to be discussed in terms of education but more specifically in immigrants' education which implicates issues i.e., academic resilience, democratizing education, well-being, and so on (OECD, 2019a). These two terms can be discussed concerning a variety of concepts such as learning loss, children/adults with disabilities, the digital divide, or displaced children/adults. In this review, therefore, the researchers mainly focused on the themes related to education and inclusion of displaced people and the digital divide arising from the lack of physical access to digital technologies. Indeed, the capacity to access and use technological tools, including the Internet, is one of the crucial components of social inclusion and integration.

### **3.1. Democratization of Education through Technology-Enhanced Learning**

Digitalization is the use of digital tools to adapt educational processes and materials for digital devices at the macro and micro levels (Habibi & Zabardast, 2020), and it has been a crucial part of people's lives for nearly 40 years. In light of this rapid change, the necessity of re-questioning the functions of traditional education and restructuring the various dimensions of learning has emerged (Yildiz-Aybek, 2017). International and national organizations have become influential in training individuals who can manage the digital age by developing both global and local strategies, have human values, respect nature, contribute to the national and global economy in the context of the workforce, are aware of inequalities and take responsibility in this regard.

In the study of Drenoyianni (2006) which is a comparison of the main ideas of Freire and Papert on the role of digitalization, mainly the use of ICTs, in both educational policies and practices, it is argued that the idea of democratizing the educational system with the help of ICTs is not the same as just changing the delivery method by using the ICTs. On the other hand, the transformative role of ICTs for both micro and macro-level strategies in education has been positively discussed as *technology as a facilitator* in recent literature (Asongu et al., 2019; Hori & Fujii, 2021; Ovcharuk et al., 2020) regarding concepts such as sustainability, poverty, accessibility, inclusiveness, and technology.

The role of digitalization in education in terms of inclusiveness has taken on a new significance with the start of the COVID-19 global pandemic. But even before the pandemic, the idea of using ICTs to provide open, accessible, flexible, environmentally friendly, and cost-friendly formal, informal, or non-formal learning opportunities has

been crucial in terms of democratizing educational practices (UNESCO IITE, 2021; Parkin, 2021). The use of digitally enhanced platforms such as Open Educational Resources (OERs), Massive Open Online Courses (MOOCs), and other open-access programs for underserved or vulnerable populations has been suggested as a pathway for the democratization of educational ecosystems (Jiang et al., 2016; Lambert, 2020; Stich, & Reeves, 2017).

### **3.2. Immigrants' Education through TEL**

Given that in today's technology-based network society, even natives of countries need ICTs-related skills to feel included, it is obvious that the same case is in question for the integration of refugees into the new environment. In the EU Action Plan on Integration and Inclusion (2021-2027) presented by the European Commission (2020), a new set of policies and guidance were introduced related to promoting the integration of disadvantaged groups, especially refugees. The major initiatives suggest providing inclusive education and opportunities for training, increasing job possibilities and skill recognition, advancing access to health services, and providing sufficient and affordable housing. In the related report, it is stated that 26.8% of non-EU-born migrants had a high-level education by the year 2019 but they face unmet life-related needs due to issues related to language, financial resources, and a lack of knowledge on how to access related services.

It is well known that access to education is one of the most important human rights and is indispensable for the practice of other human rights (UN, 1948). The use of digital technologies and environments has been an inevitable educational practice for several purposes such as inclusion, integration, and the preparation of migrants for the new environment. Considering the education theme as a focus, there are many good practices for overcoming the challenges related to the language barrier, job seeking, and skill recognition. The use of ICT for the inclusion, education, well-being, and adaptation needs of immigrants has been an important part of both TEL and Sociology related research areas. One of the most recent studies on the use of social media for refugees' health and welfare conducted by Pottie et al. (2020) suggests that refugee youth generally use ICTs for political rights, health information, social networking, and self-presentation. Mobile devices might have the potential to create positively enhanced interactions among newly arrived refugees. Being a member of the host society requires the participation of the refugees in different levels of civic engagement which improves overall well-being. In another recent study, Lenarčič and Dežan (2021) analyzed and explored a variety of ICT tools and how they support young migrants' integration into host countries.

ICT use in educational practices holds 'great promise' regarding the important role in escalated access to learning opportunities at low cost and with minimized time and place constraints (Wagner, 2017). Considering the urgent need for cost-effective, sustainable, and innovative education for displaced people, inclusive and quality education strategies have been on the agendas of global organizations. According to Joynes and James

(2018), the use of especially mobile technologies might be an opportunity in terms of providing and delivering digital content, training teachers, and improving the management of education information. Indeed, in addition to the literature published on the use of ICT for immigrants' education, recent practices reported by Wagner (2017) also support the idea of being mobile in terms of time and place and thus, mobile solutions for immigrants. It is seen as a basic survival tool for them to connect with the world (Maitland & Bharania, 2017). What follows is a brief overview of good practices in the use of technologies for refugee and immigrant education.

Read to Kids Jordan intervention (Garrahan, 2017) created a mobile app and a web-based platform including high-quality Arabic texts to help Syrian children with the toxic stress of displacement and to develop school readiness by improving language development. It helped nearly 50,000 children across Jordan and India in camp settings as well. The Read to Kids intervention showed that even if there are cost and promotion-related challenges it is still possible to reach out to refugee and immigrant kids to help them in mobile settings.

Planet Learning's "These Inspiring Girls Enjoy Reading (TIGER Girls)" and "Open Learning Exchange" (OLE) are another good example of employing digital technology to aid immigrants. Learning resources, books and courses, collaborative activities, and an accomplishment record are all available on OLE. The technology is being used in a Jordanian refugee camp to help teenage females build new friendships and cooperation skills. The TIGER program, according to Harvard Graduate School of Education's research, helps Syrian refugee girls build resilience in both life and education (Phimister, 2016).

Finally, the Learn Turkish Language MOOC platform is excellent practice. It assists individuals, specifically Syrian, Afghan, and Iraqi refugees, the majority of whom are in Turkey (UNHCR, 2020) to learn Turkish anytime, anywhere (Ozan et al., 2018). This view shows the urgent need to teach Turkish to displaced persons in Turkey who are asylum seekers, refugees, or immigrants. The platform is one of the early MOOC applications for teaching the Turkish language and culture to children and adults alike. Currently, the system has almost 17,000 students, mostly Syrians residing in Turkey (Ozan & Ozarslan, 2019). There are many useful methods and examples for helping immigrants adjust to a new environment, as well as an enormous, classified library of digital resources for mentors, instructors, and people (UNHRC, 2020). Nonetheless, issues like internet access, digital literacy, and the digital divide have been a problem for migrants, particularly those who left their homes due to war, violence, or poverty.

The digital divide, which means the gap between those who access and use ICTs and those without access to ICTs, has been a controversial issue especially when it comes to vulnerable and underprivileged populations (Mendonça et al., 2015). Alam and Imran (2015) demonstrate the role of ICTs in the social inclusion of refugee migrants; however, they also emphasize that there are inequalities regarding access to technological devices and the internet, the skills needed to use and manage digital technologies, and the ability

to pay for such services. While issues with physical access to ICTs are generally discussed in terms of the digital divide, recent studies and practices also introduced in this review study show that digital technologies are mostly considered as a bridge helping to increase social inclusion (Macevičiūtė & Wilson, 2018) and “community development, economic well-being, and financial inclusion, education, and health” (Patil, 2019, p.1).

## **Conclusion and Implications for Future Research Directions**

Having defined the scope of rapidly changing demographics through the influx of migrants around the globe, escalating issues of social justice and inequality in education for displaced people, and discussed the role of digital technology in helping adults and children to close the digital divide, we suggest the following implications regarding program, curricula, and syllabi development for which critical pedagogy would act as a lens for viewing education to transform our society into one that is more socially just (Katz, 2014), digitalization would function as an asset to create an accessible, up to date, and inclusive learning environment. Finally, sustainability for equal education will be addressed.

### **Bridging the Educational Gap in the Digital Era**

According to Wagner (2014), there are two achievement gaps in our education systems. While the first one is related to the divide between the standards of schooling for those from a better socio-economy and those who are mostly poor and minority, the second one is about the gap between what is being done in our best capacity in the best schools and what students need to achieve to be successful in today’s global economy. Wagner (2014) suggests seven basic skills for work, learning, and citizenship in the twenty-first century to help close those achievement gaps as follows: (1) Critical Thinking and Problem Solving, (2) Collaboration Across Networks and Leading by Influence, (3) Agility and Adaptability, (4) Initiative and Entrepreneurialism, (5) Effective Oral and Written Communication, (6) Accessing and Analyzing Information, (7) Curiosity and Imagination (pp. 1-42). These are necessary skills to prepare youth for the advances in global society and the digital era.

Given that critical pedagogy is a humanizing approach to educational practices, it is considered the foundation of the digitalization of learning and teaching. The seven survival skills suggested by Wagner (2014), especially those related to critical thinking, collaboration, and adaptability are also essential skills for the ever-changing digitalization. While today’s digital world enables people to learn anything from any location by using digital technologies, it also supports learners to see how education changes in terms of openness, and flexibility and indicates the need to acquire 21st-century survival skills to catch up with the world. Technological improvements and innovations provide alternative ways, techniques, and resources to learn or gain new skills. In other words, now learners can search, select, use, criticize, and evaluate learning materials, courses, instructors, and even organizations.

## **Sustainable and Equal Education for All**

One of the Sustainable Development Goals (SDGs) identified by the United Nations to close the gap is to promote inclusiveness and equal quality education globally for everyone (UN, 2020b). To ensure the sustainability of developments across diverse populations such as displaced people, we need the support of global organizations and structures. One promising example of such an endeavor is the 2030 Agenda for Sustainable Development by the UN. To end poverty, protect the planet, and improve the lives and futures of everyone, everywhere, all UN Member States adopted the SDGs in 2015. As part of the 2030 Agenda for Sustainable Development, a 15-year plan was set out to accomplish the Goals (UN, 2020b). Reimers (2021, pp. 44-46) believes that realizing Sustainable Development Goal 4 (SDG4), quality education for all, and other SDGs rely on the achievement of powerful education and learning systems. According to the UN (2020b), education is “a global common good and a primary driver of progress across all 17 SDGs as a bedrock of just, equal, inclusive peaceful societies” (p.3).

It is important to aim to educate the “whole child” (Reimers, 2021, p. 44), promoting learning outcomes and competencies to create an inclusive ecosystem that would also benefit the displaced and immigrants. Furthermore, it is necessary to appeal to cognitive, interpersonal, and intrapersonal competencies, and foster interaction and peer work. Rather than simply covering the content, it is essential to streamline the lesson and prioritize the main competencies for underprivileged populations. Instead of grade levels, children need to be placed according to their learning performance. Reimers (2021) also underlines that we need to design instructions that foster accelerated learning. Most of the current education systems prioritize covering the loss with remediation instead of focusing on accelerated learning (OECD, 2021b; as cited in Reimers, 2021). Personalized instruction based on the learners’ level and the use of formative feedback through online guidelines can support learners and help them gain independent learning skills.

When the provision of equal resources and access for all is possible, specifically for refugees or immigrants, we suggest the advanced use of digital technologies and artificial intelligence where face-to-face education is not possible. Some of the applications we recommend include Social Media platforms for collaboration with host communities, Augmented Reality for adaptation to the new environment, finding jobs and educational opportunities, MOOCs and OERs (Open Educational Resources) to remove the language barrier, assist, and improve learning, Digital Adaptive Systems to create alternative paths by using their personal and educational backgrounds for adult and youth education.

In conclusion, this study focused on the ever-increasing immigrant and refugee population. We proposed the adoption of critical pedagogy as a macro and micro-level lens set on digital technologies in order to address the difficulties of displacement, as well as the need for quality education, equity in daily life, and employment. However,



more research on these intricate and critical topics needs to be undertaken to gain a richer insight into the socio-economic and cultural mechanisms underlying the potential of digital technologies for reaching the global goals set by intergovernmental organizations, NGOs, and associations.

## Limitations and Strengths

The inclusion of current papers, book chapters, and reports gives us a comprehensive picture of our predetermined themes. In addition, we mostly included completed practice-based or empirical studies in order to report current results on the themes and research questions. However, since we established the main themes based on our prior experience and research, this study's inquiry technique is not totally exploratory, which can be considered a potential limitation.

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## Genişletilmiş Türkçe Özet

Bu makale, son zamanlarda Koronavirüs (COVID-19) salgınının ortaya çıkmasıyla şiddetlenen ve diğer göçmenlerin yanı sıra özellikle mülteciler için eğitimin dijitalleşmesiyle yeni bir boyut kazanan göç ile sosyal adalet, eşitsizlikler ve eğitime erişim konuları arasındaki ilişkiyi araştırmaktadır. Kuşkusuz, dünya çapında meydana gelen krizler, birçok kişi üzerinde belirgin bir etki yaratmıştır. Bu nedenle, zorunlu göç ve eğitim arasındaki ilişkiyi daha derinden anlamak için bu etkinin yarattığı koşulları araştırmak ve mevcut durumu ortaya çıkarmak çok önemlidir. Bu çalışmada mevcut durumun değerlendirilmesi, yarattığı etkiler ve çözüm önerileri eleştirel pedagoji çerçevesinde incelenmiştir. Paolo Freire'e göre eleştirel pedagoji, problem oluşturma eğitim yöntemiyle ilgilidir ve öğrencilerin kendi sosyal bağlamlarındaki baskın inançlarını tespit etme, analiz etme ve değerlendirme becerisine sahip olmalarını gerektirir (Maboloc, 2020). Öğretmenler, öğrencilerini kendi kültürlerindeki adaletsizliği anlamaya ve sorgulamaya teşvik eder (Freire, 1993). Bu çalışmada eğitimi demokratikleştirmek ve mülteci öğrenciler için uyum stratejilerinde kapsayıcı bir anlayış edinmek için Teknolojiyle Güçlendirilmiş Öğrenme (TEL) ve Bilgi ve İletişim Teknolojilerinin (BİT) uygulamalarına odaklanılmıştır. Bu çalışmanın metodunda kapsam belirleme derlemesinden yararlanılmıştır. Kapsam belirleme derlemesi belirli bir konu veya araştırma alanı ile ilgili çalışmaları, araştırmacıların politika ve uygulamaya rehberlik edecek temel kavramları, bilgi boşluklarını ve kanıtları belirlemelerinde kullanmaya yardımcı olmayı amaçlar (Daudt ve diğerleri., 2013). Kapsam belirleme derlemesi mevcut literatürü ve diğer bilgi kaynaklarının incelenmesi yoluyla elde edilen çeşitli çalışma tasarımlarından ve yaklaşımlarından bulgular içerir (Davis ve diğerleri, 2009). Bu incelemede, önerilen kapsam belirleme derlemesi gerekliliklerine ve metodolojik yaklaşıma bağlı kalınarak bulguların güvenilirliği sağlanmıştır. Sürecin güvenilirliğini garanti etmek için literatürü manuel olarak da araştırılmıştır (Sucharew ve Macaluso, 2019). Kapsam belirleme incelemesinin geçerliliğini artırmak için araştırmacılar, Arksey ve O'Malley (2005) tarafından önerilen ve literatür incelemesini yapılandırılmaya yarayan Kapsam Belirleme Çerçevesine bağlı kaldılar. İnceleme protokolü, veri sayfaları ve kayıtlar yoluyla çalışmaların tanımlanmasına ve düzenlenmesine yardımcı olan PRISMA protokolü (Page ve diğerleri, 2021) ile bir adım daha rafine edilmiştir. Taranan çalışmalar üç ana tema altında toplanmıştır. Bu temalar (1) göçmenlerin akademik başarıları ve kapsayıcılık, (2) Göçmenlerin adaptasyonunu etkileyen kesişen deneyimler: dil engeli, motivasyon ve eğitim kazanımları hakkındaki OECD, UNHCR ve BM raporları. Son olarak, (3) göçmen eğitiminde dijitalleşmenin rolü: dijitalleşmenin eğitimin demokratikleşmesi ve Teknolojiyle Güçlendirilmiş Öğrenmenin göçmenlerin eğitimi üzerindeki rolüdür. Sonuçların derlenmesine ek olarak bu çalışma, zorunlu göçe maruz kalmış yetişkinlere ve çocuklara göçle ilgili olumsuz etkilerin ve eşitsizliklerin üstesinden gelmede yardımcı olabilecek, erişilebilir, sürdürülebilir ve etkili teknikler sunmaktadır. Eleştirel pedagojinin çok kültürlü eğitim için sağlam bir temel oluşturduğunun ve sonuçları olduğunun altı çizilmiştir. Zoraki göç etmiş bireyler için daha kapsayıcı bir eğitim ekosistemi oluşturmada program, müfredat ve izlenim geliştirmeye yönelik çözümler ve öneriler sunulmaktadır. Herkes için, özellikle de

mülteciler ve göçmenler için eşit kaynak ve erişimin sağlanması mümkün olduğunda, yüz yüze eğitimin mümkün olmadığı durumlarda dijital teknolojilerin ve yapay zekânın ileri düzeyde kullanılmasını öneriyoruz. Önerdiğimiz uygulamalardan bazıları, ev sahibi topluluklarla işbirliği için sosyal medya platformları, yeni ortama uyum sağlamak, iş ve eğitim fırsatları bulmak için artırılmış gerçeklik, dil engelini kaldırmak, öğrenmeye yardımcı olmak ve geliştirmek için MOOC'lar ve Açık Eğitim Kaynaklarını içermektedir.

**Anahtar Kelimeler:** Eğitimin dijitalleşmesi, dijital uçurum, mülteci deneyimleri, eleştirel pedagoji, kapsam belirleme derlemesi

**Ethics Committee Approval:** Since the method of this research does not include any living participation, ethics committee approval has not been required.

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| Authors              | Contact                                                                            |
|----------------------|------------------------------------------------------------------------------------|
| Aylin Akınlar        | Bandırma Onyedi Eylül University, Türkiye<br>E-mail: aakinlar@bandirma.edu.tr      |
| Merih Uğurel Kamışlı | TED University, Faculty of Education, Türkiye<br>E-mail: merih.kamisli@tedu.edu.tr |
| Hilal Seda Yıldız    | Arden University, UK<br>E-mail: hilal.yildiz@tedu.edu.tr.                          |
| Aras Bozkurt         | Anadolu University, Türkiye<br>E-mail: arasbozkurt@anadolu.edu.tr                  |

# Assessment of Changes in Teacher Candidates' Perceptions of the Concept of the Environment

İsmail Dönmez\*

Salih Gülen\*\*\*

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**Abstract**

Higher education institutions are responsible for producing individuals with the knowledge, skills, and values to contribute to the improvement of society's quality of life. Environmental education is also one of the leading permanent solutions for environmental problems. The aim of this research is to understand teacher candidates' perceptions of the concept of "environment." In this context, a case study, as one of the qualitative research methods, was used. The participants consisted of 36 students enrolled in the primary school teaching department at a state university. The data collection tools included a word association test, metaphors, and drawing techniques. These data collection tools were applied before and after an environmental education course that participants attended for 14 weeks. From the research findings, it is understood that the participants' mental structures for the concept of "environment" shifted from being living creature-oriented to being pollution-oriented by the end of the environmental education course.

**Keywords:** Mental Structure, Drawing, Environment, Metaphor, Perceptions.

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\*  Corresponding Author's, Associate Professor, Mus Alparslan University, Bulanik Vocational School, Turkey, i.donmez@alparslan.edu.tr.

\*\*  Associate Professor, Mus Alparslan University, Malazgirt Vocational School, Turkey, s.gulen@alparslan.edu.tr.



## Introduction

The environment is a multidimensional living space with sociological, biological, economic, physical, chemical, and cultural aspects, where all living beings interact with each other throughout their full lifespans (Torunoğlu, 2013). Various dangers arising as a result of human activities, such as drying rivers, deforestation, pollution of water resources, climate change, toxic wastes, decreasing biodiversity in nature, and acid rains have led people to reconsider their attitudes and behaviors toward the environment and their duties and responsibilities toward nature (McKibben, 2015). Due to rapid population growth and technological advances, today's children are born into a world where there are many environmental problems threatening both human health and nature, such as global warming, decreased biodiversity, soil erosion, decreased natural food supplies, and energy and water shortages (Diamond, 2011; Gunderson, 2014). The main source of these problems is known to be human behavior (Koger, 2013). The problems caused by industrialization and population growth also negatively affect human health. Living beings need the environment, and so it is important that people take care of it. Education is the main way to reduce environmental problems (Miser, 2019). Because with the environmental education course, both ecological information is learned and the attitude toward the environment develops, on the other hand, attitudes turn into behavior (Erten, 2004). The increase in environmental problems has accelerated studies seeking to create permanent solutions to these problems. The decision that environmental education is necessary for a sustainable environment was taken at the Rio Conference in 1992 (Ahi & Özsoy, 2015; Eilam & Trop, 2012). In this context, environmental education issues have started to take place in the curriculum in many countries. Especially in the last thirty years, the impact and importance of three key areas in education have become clear (Durkan, 2020). These three areas are environmental education, education for sustainable development, and education for sustainability (Eilam & Trop, 2012). It is possible to say that environmental education is a learning process that helps to improve many skills, attitudes, behaviors, and types of knowledge related to the environment (Sola, 2014). Each individual must have the knowledge to protect the environment (Mahajan & Darbari, 2014). Environmentally conscious individuals are aware of the importance of not only protecting nature but also recycling materials such as plastic, glass, and paper. In this sense, environmental consciousness is important for promoting recycling (Miranda & Blanco, 2009).

Environmental education is an area in which people and organizations strive to make the world a better place not just in the future, but also today. However, one significant obstacle to accomplishing this inclusive goal is deciding on a shared definition of what 'a better place' means. It's challenging to establish who the beneficiaries should be, under what circumstances the improvements should occur, and in what manner or methods these enhancements should be implemented (Clark et al., 2020). The aim of

environmental education should not only be to prevent the deterioration of ecosystems but also to minimize and prevent problems that seriously threaten the lives of species at alarming levels (Valderrama-Hernández et al., 2017). Providing environmental education for students affects their behavior later in their lives (Özcan & Demirel, 2019). Li (2018) found that environmental education for university students, which included the study of revisions of environmental protection laws, created a great difference in their awareness of the environment and their attitudes toward it. Çiftçi and Kayaer (2022) stated in a study they conducted with university students that environmental education is a way to increase environmental awareness. Irmak-Kazazoğlu (2020) determined that attitudes towards the environment differ according to gender, family education level and environmental education. Yıldız et al. (2021) pointed out that there is an increase in the attitudes of environmental education university students towards the environment and environmental problems. Bülbül and Yılmaz (2019) concluded that university students consider their civic duties and responsibilities conscious in the focus of environmental education and environment, raise awareness of their environment, take environmental education and inform the people around them about nature, and at the same time protect the environment and are sensitive to the environment. Ardoin et al. (2020) stated in their systematic review of environmental education that many environmental issues have cognitive and affective dimensions. However, these studies did not sufficiently examine the change in the mental structure of pre-service university students before and after environmental education. Since pre-service university students are potential teachers in the future, they should be equipped with environmental education. Therefore, teachers must be environmentally conscious in order to be role models for students. As stated in Turkey for the teaching profession's general qualifications, "a teacher is sensitive to the protection of historical and cultural heritage within a natural environment" (Ministry of National Education [MoNE], 2017, p. 23). It is important that teacher candidates receive environmental education and that mental models be identified in order for teachers to be able to pass on the knowledge that they have to future generations.

Universities, which are among the most important institutions where social change and development take place, are poised to oversee great changes and expectations in economic, social, educational, technological, and environmental fields. Universities are also expected to respond flexibly to all humanitarian demands (Tufaner et al., 2020). The focus of environmental education programs in higher education has been to ensure that attitudes toward the environment change positively by increasing students' knowledge about the environment (Pooley & O'Connor, 2000). However, it is not possible to say that basic ecological knowledge given within the scope of environmental education always improves environmental awareness and related behavior patterns in individuals (Schmidt, 2007). The concept of environmental education is not only related to knowledge; it is also about values, attitudes, ethics, and actions (Davis, 1998), and

higher education institutions are responsible for producing individuals who have the necessary knowledge, skills, and values that will contribute to the improvement of the quality of life in global society (Corcoran, 2004). It is thought that the behaviors and attitudes of teacher candidates acquired through environmental education courses and the wealth of knowledge that they accumulate will affect the environmental education that they later provide to their own students (Öztürk & Erten, 2020). However, the effect of environmental education courses applied in higher education on mental structures has not been studied sufficiently.

### **Theoretical Background**

Mental models or mental images are personal and intrinsic representations of external reality that people build to make sense of the world (Greca & Moreira, 2000). A mental structure is a special kind of mental representation of beliefs, thoughts, or events produced by individuals as a result of cognitive processes (Harrison & Treagust, 2000). Although mental models are incomplete, inconsistent, and even contradictory (Norman, 1983; Greca & Moreira, 2000), they mediate between reality and our minds and they help us filter, organize, and understand new information. Each student forms different mental models while attending science classes as they have different cultural, educational, and personal experiences (Glynn & Duit, 1995). To a certain extent, science learning requires students to think about their existing mental models and create new conceptual models (Glynn & Duit, 1995; Mintzes et al., 1998; Greca & Moreira, 2000; Libarkin et al., 2003). This modeling process depends on the complexity of the current mental models of students (Libarkin et al., 2003). Well-developed and organized mental models provide students with new information for their existing models, while less-developed mental models can easily be replaced depending on new experiences (Libarkin et al., 2003). According to Hanke (2008), who stated that the learning process is also a process of mental model construction, this process consists of the following stages: "(1) The process of mental model construction begins with new knowledge or a phenomenon that causes a mental imbalance. (2) Existing knowledge must be used to make the new situation clear. (3) Research must be performed in order to learn more. (4) The new situation must be combined with the available knowledge in a mental model and the details of this mental model must be developed until the new information becomes credible."

Research on students' concepts has been recognized as a fundamental concern for science education, especially after Ausubel developed the idea that prior knowledge affects the learning of scientific knowledge (Ausubel, 1963). Although we know that it is important to understand students' prior knowledge and misconceptions, it is difficult to investigate students' mental models about complex and abstract concepts. (Chang, 2007). A modern theory of conceptual change framework suggests that students need to increase, recategorize and reorganize their cognitive structures to reach a more

scientific understanding (Vosniadou, 2013). Cognitive structures are part of long-term memory and are accessed by working memory as mental models to address a problem (Doyle et al, 2008). It is possible to find many studies in the literature showing that mental models cause conceptual change (Gadgil et al. 2012; Bergan-Roller et al, 2020). The study of conceptual change examines misconceptions and their persistence in mental models (Duit et al., 2013). Palmunen et al. (2021) show that the change in students' mental models is related to adding new information and changing the misconceptions in existing information. There are studies showing that exemplary activities in environmental education contribute to students' conceptual change and mental models (Reinfried, 2006). These studies focused on conceptual change through issues such as water consumption and sustainability (Benninghaus et al., 2018), regional floods (Bosschaart et al., 2015), and climate change (Deisenrieder et al., 2022). However, in conceptual change, the environment concept was not adequately explained through holistic and long-term mental models. Today, in environments of formal and non-formal environmental education, the processes of changing the concepts, thoughts, and attitudes of learners towards the environment in a sustainable way should be examined (Denis et al, 2015).

### **Importance of Study**

This research is important not only for pre-service teachers, but also for all stakeholders in the education system. Because research shows that pre-service teachers' knowledge of science-related content has both direct and indirect effects on classroom practices (Subramaniam & Esprivalo Harrell, 2013). Moreover, pre-service teachers who have more content knowledge tend to help students more to construct scientifically accepted knowledge (Gumala et al., 2019). This information can play an important role in determining education policies, organizing curricula and designing teacher training programmes. How models of concepts are developed in the minds of students in a classroom environment in higher education is an important question. Identifying the mental models of students can give us an idea of the extent to which a concept has been understood (Çiltaş & Işık, 2012). Inside a classroom environment, teachers or lecturers can measure the level to which in-class practices affect students' mental models in higher education. It is important to learn how to conduct interventions in a way that will help students review and eventually develop their current mental models with a deeper and more systemic understanding of the environment (Iliopoulou, 2016). Longitudinal studies of students developing their mental models are also useful in determining the effect of experience and education on students' conceptualization of the environment (Shepardson et al., 2007). Since mental models are personal representations of the concepts in the learner's mind (Coll & Treagust, 2003), eliminating the student's misconceptions about a subject will enable the mental models to turn into scientifically consistent information, that is, support them to create conceptual models (Ayvaci et al,

2018). Research in environmental education tends to focus less on students' factual knowledge of environmental issues, environmental attitudes, and behaviors, and less on students' environmental concepts; that is, while there are many studies investigating students' concepts of environmental phenomena, events, and topics, there are few studies that specifically examine how students conceptualize the environment (Shepardson et al., 2007; Petrou & Korfiatis, 2022). The aim of the study was to gain more insight into undergraduate students' understanding of the "environment" by investigating their underlying mental models and exploring implications for the teaching and learning of this concept. Research is to examine the conceptual change in mental structures of teacher candidates before and after a course on the environment in higher education. For this purpose, answers to the following sub-problems were sought:

"How do teacher candidates perceive their environmental education through the lens of their pre-application and post-application results in word association tests?"

"How do teacher candidates perceive their environmental education through the lens of their pre-application and post-application results in metaphors?"

"How do teacher candidates perceive their environmental education through the lens of their pre-application and post-application results in drawings?"

## Method

A case study approach, as one of the qualitative research methods, was used in this research. Qualitative research methods are preferred for understanding the experiences of participants and analyzing them carefully. The case study approach is to conduct an in-depth examination of a current issue, phenomenon, or situation in a real-life environment by focusing on the individual or group. In addition, in these studies, a special subject is associated with more than one source of evidence and data in a holistic framework. In order for the data to test and support each other, the data collection needs to be diversified (Merriam, 2013; Creswell, 2016). In the research, a holistic single-case design was preferred over case studies. This design aims to determine the status of a group on a topic by using different data sources (Ekiz, 2003; Yıldırım & Şimşek, 2016). The steps of the planning process in the case study are given below.

### Characteristics of the Region and Participants

There are 209 universities in Turkey, 131 of which are state universities while 78 are foundation universities. Of the total 209 universities, 93 have education faculties (Higher Education Statistics, 2022). This research was conducted in the education faculty of a state university located in Turkey's Eastern Anatolia region. This region is socioeconomically disadvantaged compared to the other regions of Turkey (Lynn et al.,

2015). People in the Eastern Anatolia region generally sustain themselves through agriculture and animal husbandry. The students attending the education faculty of the university where this study was conducted are generally from families from the Eastern Anatolia region. The success ranking of the university can be described as low to medium between 2017-2022 (University Ranking by Academic Performance [URAP], 2022). Courses in the teaching department of the education faculty are divided into three categories: field education courses, professional teaching knowledge courses, and general culture courses. According to the "Teacher Training Undergraduate Programs", which was updated in 2018, the Environmental education course is a field education course (Council of Higher Education [CoHE], 2022). Environmental education is a compulsory course in the education faculty where the research is conducted.

The participants of the research included 36 students studying in the classroom teaching department of the education faculty of this state university. Of those 36 participants, 55% (n=20) were female students and 45% (n=16) were male. None of the participants had ever taken an environmental education course before. The convenience sampling method, as a type of non-probability sampling method, was used to determine the research sample. In this sampling method, the researcher selects a situation that is easy to access. This accelerates the research and makes it more practical. Among the other reasons for using this sampling method, it is also cost-effective (Yıldırım & Şimşek, 2016). This sampling method allows in-depth and detailed studies to be conducted in situations that are rich in information (Büyüköztürk et al., 2019). The convenience sampling method is known as the most widely used sampling strategy because it provides the opportunity to conduct fast and useful research (Patton, 2018).

### **Ethical and Data Collection Process of the Study**

*Ethical process;* ethical permission for the research was obtained from the university where the research was conducted. Participation was provided on a voluntary basis throughout the research process. There were 40 students in the classroom teaching department and 36 of those students participated in the research process on a voluntary basis.

*Data collection process;* word association test, metaphor, and drawing techniques were used to collect data in this research. A four-part booklet was prepared accordingly. The first part contained text for the participants about the purpose, scope, and features of the research together with a reminder that participation was voluntary. Participants were asked to note their gender and whether they had taken an environmental education course before. In the second part, there was a word association test consisting of five words and one sentence. Participants were given 40 seconds to write associated words and 20 seconds to form a sentence. In the third part, participants were asked to complete a metaphor and provide an explanation of their choice. In the fourth part, it was



requested that participants draw a picture related to the concept of “environment.” There was no time limit for the metaphor and drawing parts. The entire application took approximately 30 minutes.

### **Data Collection Tools and Data Analysis**

Drawings, interviews, tests, scales, surveys (Ültay et al., 2017) and metaphors (Sözcü et al., 2016) are used to determine mental structures. The data collection tools used in the present research were a word association test, metaphors, and drawings. These techniques are also frequently used to determine mental structures. They have been used for the in-depth examination of situations that exist due to the nature of qualitative research rather than generalizations and to provide opportunities to examine situations from a broad perspective. In previous research, drawing-word association tests and drawing metaphors were used in a binary way. For example, in Yoğurtçu's (2021) study, the drawing-writing technique was used to determine students' conceptual structures and metaphorical perceptions about "cell". Again, Polat (2013) used a word association test to determine students' knowledge about the environment. It is understood that the same or similar measurement tools have been used before in the literature (Ercan et al., 2010). In addition, the diversity of measurement tools in data collection is also important. Thus, internal validity was increased (unlike in previous studies) by using the data triangulation technique (Houser, 2015; Streubert & Carpenter, 2011). Multi-source data are more meaningful for research because multiple sources provide a more complete understanding of the studied phenomenon (Bogdan & Biklen, 1998).

### **Word association test**

Word association tests are among the most common techniques used for resolving mental structures and the interconnections between concepts in those structures, as well as for identifying relationships between the concepts in an individual's long-term memory (Atasoy, 2004). Word association tests can reveal the concepts that students have created in their minds (Bahar et al., 1999). Thus, they can help uncover the conceptual associations that students have created in their minds about the environment and environmental concepts. In a word association test, a frequency table and conceptual networks are created in accordance with the answers, and the answers given are evaluated (Tokcan, 2015).



**Table 1.**

*Participants' Concepts in Pre- and Post-Application Word Association Tests*

| Pre-application                                                                                                                                                                                                                                         | Post-application                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Word 1: Building                                                                                                                                                                                                                                        | Word 1: Water                                                                                                                                                                                                           |
| Word 2: Tree                                                                                                                                                                                                                                            | Word 2: Drought                                                                                                                                                                                                         |
| Word 3: Soil                                                                                                                                                                                                                                            | Word 3: Rain                                                                                                                                                                                                            |
| Word 4: Human                                                                                                                                                                                                                                           | Word 4: Living being                                                                                                                                                                                                    |
| Word 5: Animal                                                                                                                                                                                                                                          | Word 5: Temperature                                                                                                                                                                                                     |
| Sentence: The <u>human</u> love for high-rise <u>buildings</u> and concrete negatively affects the trees growing from the <u>soil</u> , the water that feeds the <u>trees</u> , and the lives of the <u>animals</u> that need the fruit of those trees. | Sentence: As we waste <u>water</u> , the amount of our resources decreases, which causes <u>drought</u> . When it <u>rains</u> less and the <u>temperature</u> increases, <u>living beings</u> are negatively impacted. |

Table 1 shows an example of the findings obtained from pre- and post-application word association tests. In pre-application results, the words given by a participant were encoded as follows: buildings, trees, soil, humans, and animals. The sentence written by the participant was analyzed in order to check the words that he/she had provided. In the post-application results, the participant's words were encoded as water, drought, rain, living being, and temperature.

### Metaphors

A metaphor technique was used to examine the participants' perceptions of the concept of "environment" in the present research. Metaphors, as a special language form, allow humans to express themselves implicitly (Wu, 2020). Metaphor forms can be used as data collection tools to reveal participants' perceptions of the concepts given in the forms (Kilcan, 2017). The metaphor form applied in the present work was prepared as the environment is like/similar to ... because ... Teacher candidates were asked to create an analogy about the environment and explain their reasons for choosing those analogies (Kilcan, 2017).

**Table 2.**

*Participants' Pre- and Post-application Metaphors*

| Pre-application                                                                                                                                                                                                                                                                                      | Post-application                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The environment is like the <u>solar system</u> . At the center are human beings, and around them are planets, satellites, and stars that affect people. All of them are combined to form the environment, because the environment is composed of all the factors that exist with or without humans. | The environment is like the <u>human body</u> . Just as the disruption in the functioning of one of the organs in the human body affects the whole body, the slightest disruption in the surrounding area affects the whole environment. |

Table 2 shows the metaphors produced by a participant before and after the study application. In the pre-application results, it is seen that the participant thinks that the environment is like the solar system. It is also seen that the participant thinks humans are at the center of the solar system. In the post-application results, the same participant thinks the environment is like the human body and that any problem in a local environment can damage the whole system, as in the human body.

### Drawings

Participants were asked to make a drawing for the purpose of understanding their perceptions of the concept of "environment." In many studies, it has been stated that the drawings that children make are powerful tools in analyzing their perceptions and images of specific subjects (Rodari, 2007). It is also stated that it is possible to see participants' internal worlds, feelings, real thoughts, and desires within a visual structure through their drawings (Özsoy & Ahi, 2014).

**Figure 1.**

*Pre-Application (a) and Post-Application (b) Drawings of a Participant*



In the data analysis, the categories obtained by Özsoy (2012) were used, which are environment, people, animals, plants, abiotic items, buildings/vehicles, and garbage. Figure 1 shows a participant's pre- and post-application drawings. The participant drew buildings, flowers, trees, birds, rabbits, cows, cats, mountains, and the sun before the application. In the post-application drawing, a dirty environment is seen. It was observed that participants used the concepts of people, trees, garbage, papers, bottles, flowers, rivers, and grass. In Figure 1, it is also seen that the participant depicted the environment as both clean and dirty.

Descriptive analysis was used in the analysis of the data obtained in the research. The data obtained are summarized in a descriptive analysis and interpreted under previously

determined headings. It is important for the reliability of the research to get some quotations from the data sources in the data collection process. In descriptive analysis, the aim is to arrange the data in such a way that readers can easily understand the data and use it if they wish. The steps taken in the present research were as follows: 1) creating a framework for the descriptive analysis, 2) processing the data according to the thematic framework, 3) describing the findings, 4) interpreting the findings (Altunışık et al., 2010, p. 322). In this context, participant citations were examined by field experts. The codes determined as a result of the examination were placed in the appropriate categories by consensus. Thus, a suitable framework for descriptive analysis was created. Within the scope of this framework, the coding on the quotations is given (underlined) and interpreted. In this context, the findings were designed and presented with a thematic relationship in the study. The consensus was reached at all of these stages. Concept maps were created using the Concept MindMup program for the words obtained from the analyzes and pre-and post-applications. These maps are given as an indicator of the changes in the mental structures of the participants before and after the application.

### **Validity and Reliability**

Interviews were conducted with the participants to ensure the validity of the research and the participants were asked to explain their drawings about the concept of “environment” (these interviews were made as conversations after the research was completed and were not recorded). Thus, the findings obtained from each participant were examined comparatively in terms of the gains and the concepts of the environmental education program. The conceptual framework for the data collection was taken as a guide. In the study, it was aimed at increasing the validity by providing data diversity. The diversity of data collection in this study provides this. The adequacy of the working time also increases its validity. As a matter of fact, data collected from studies lasting between 6 and 8 weeks increases the validity of the research. Presenting the citations of the participants as they also affect the validity. Apart from these, the analysis of the quotations by taking expert opinions and reaching a consensus also increases the reliability (two academicians with a Ph.D. in Science Education). The reliability of the research was determined using the formula of Miles and Huberman (1994):  $\text{Reliability} = \frac{\text{Consensus}}{\text{Consensus} + \text{Disagreement}} \times 100$ . The consistency between the codes made by the experts was determined to be 93% in total. If the percentage of reliability is found to be over 70%, the research should be considered reliable (Miles & Huberman, 1994).

Table 3 illustrates the research process. Before the application, the word association test, metaphor technique, and drawings were used to determine the participants’ mental structures regarding the environment. In the course of the application, the researcher spent 12 weeks teaching the participants about the common characteristics of living beings, the classification of living beings, community ecology, living beings and energy,

environmental problems, environmental pollution and solutions, energy sources and recycling, biodiversity, environmental literacy, environmental pollution in teaching programs, methods and techniques used in environmental education, and out-of-school learning environments in environmental education. The course was taught using the narrative-based technique and the question-and-answer teaching technique.

**Table 3.**

*Research Process*

| Weeks | Subject                                                        | Explanation                                                                                                                                                                                                                  |
|-------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pre   | Data collection tools                                          | Word association test, Metaphor, Drawing                                                                                                                                                                                     |
| 1     | General characteristics of the living creatures                | It was ensured that the participant got to know the living thing and learn about its characteristics. The similar, common and different characteristics of living things were comprehended.                                  |
| 2     | Classification of living beings                                | It is provided to classify living things according to their similar and common characteristics and to learn the general characteristics of these classes.                                                                    |
| 3     | Ecological concepts                                            | It is provided to define ecology, to learn the concepts in ecology and to understand the relationship between them.                                                                                                          |
| 4     | Community ecology, living creatures, and energy                | Recognizing living things in ecologies, learning their characteristics and nutritional relations, defining energy and how energy transfer takes place are comprehended.                                                      |
| 5     | Environmental problems                                         | Environmental problems were defined, learned and classified.                                                                                                                                                                 |
| 6     | Environmental pollution and solutions                          | Environmental pollution was defined, solution suggestions were presented and participant opinions were taken.                                                                                                                |
| 7     | Energy resources and recycling                                 | Energy sources and renewable energies are defined and participatory ideas and sample applications are explained.                                                                                                             |
| 8     | Biological diversity                                           | Biodiversity is defined, examples from Turkey and the world are given, and the diversity in the immediate environment is indicated.                                                                                          |
| 9     | Environmental literacy                                         | Literacy and environmental literacy have been defined. The importance and steps of being literate are explained. Environmental media were introduced.                                                                        |
| 10    | Environmental pollution in curriculum                          | The environmental awareness that they will convey to the students in terms of their professional development and task processes has been emphasized. Environmental gains in the curriculum were transferred and interpreted. |
| 11    | Methods and techniques in environmental education              | The appropriate methods and techniques for achieving environmental education are explained and examples from the literature are given. Integrated with the participants' ideas on this subject.                              |
| 12    | Out-of-school learning environments in environmental education | Out-of-school learning approach, which is one of the most popular approaches in environmental education, is explained. Features and application examples are presented.                                                      |
| Post  | Data collection tools                                          | Word association test, Metaphor, Drawing                                                                                                                                                                                     |

## Findings

### Findings Obtained by the Word Association Test

In this part of the research, a word association test was applied to determine the concepts in the mental structures of the participants. For understanding the concepts obtained, concept mapping was used (Figures 3 and 4). The concepts that the participants frequently expressed related to the concept of "environment" as formed in their minds are shown closer to the center in the concept maps. For example, because the concept "human" was expressed 28 times, it appears closer to the concept "environment." In contrast, the concept "flower" was repeated only twice, and so it appears further away from "environment."

**Table 4.**

*Concepts in the Mental Structure Related to the Subject (Pre-Application)*

| Concept     | f  | %  | Concept            | f   | %   |
|-------------|----|----|--------------------|-----|-----|
| Human       | 28 | 15 | Natural Events     | 4   | 2   |
| Tree        | 14 | 7  | Lifeless           | 2   | 1   |
| Animal      | 12 | 6  | Building           | 2   | 1   |
| Life        | 12 | 6  | Child              | 2   | 1   |
| Society     | 10 | 5  | Soil               | 2   | 1   |
| Water       | 10 | 5  | Cloud              | 2   | 1   |
| Nature      | 10 | 5  | Flower             | 2   | 1   |
| Cleanliness | 10 | 5  | Sun                | 2   | 1   |
| Order       | 10 | 5  | Dirty              | 2   | 1   |
| Ailve       | 8  | 4  | Home               | 2   | 1   |
| Plant       | 6  | 3  | Shelter            | 2   | 1   |
| Oxygen      | 6  | 3  | Value              | 2   | 1   |
| Mountai     | 6  | 3  | Season             | 2   | 1   |
| Lifetime    | 6  | 3  | Universal          | 2   | 1   |
| Sea         | 4  | 2  | Ecologival Balance | 2   | 1   |
| Total       |    |    |                    | 182 | 100 |

Table 4 shows the pre-application mental structures of the participants before receiving environmental education concepts. The participants were observed to use the concepts of "human" (f=28), "tree" (f=14), "animal" (f=12), "life" (f=18), "nature" (f=10), "order" (f=10), "water" (f=10), "cleaning" (f=10), "society" (f=10), "living being" (f=8), "plant" (f=6), "mountain" (f=6), "oxygen" (f=6), "sea" (f=4), "ecosystem" (f=4), "forest" (f=4), "existence" (f=4), and "mentality" (f=4). The concepts of "human," "tree," and "animal" were used most frequently.

**Table 5.**

*Concepts in the Mental Structure Related to the Subject (Post-Application)*

| Concept          | f  | % | Concept        | f   | %   |
|------------------|----|---|----------------|-----|-----|
| Life             | 12 | 6 | Education      | 2   | 1   |
| Human            | 10 | 5 | Dissolution    | 2   | 1   |
| Pollution        | 10 | 5 | Family         | 2   | 1   |
| Waste            | 8  | 4 | Structures     | 2   | 1   |
| Global Warming   | 8  | 4 | Interaction    | 2   | 1   |
| Ecosystem        | 8  | 4 | Friends        | 2   | 1   |
| Water            | 6  | 3 | Peace          | 2   | 1   |
| Plastic Waste    | 4  | 2 | Plant          | 2   | 1   |
| Animal           | 4  | 2 | Grasshopper    | 2   | 1   |
| Sun              | 4  | 2 | Farmer         | 2   | 1   |
| Nature           | 4  | 2 | Baby           | 2   | 1   |
| Clear            | 4  | 2 | Atmosphere     | 2   | 1   |
| Rain             | 4  | 2 | Chain Of Cloth | 2   | 1   |
| Renewable Energy | 4  | 2 | Frog           | 2   | 1   |
| Tree             | 4  | 2 | Sky            | 2   | 1   |
| Sun              | 4  | 2 | Soil           | 2   | 1   |
| Living Space     | 4  | 2 | Fouling        | 2   | 1   |
| Green            | 4  | 2 | Mountain       | 2   | 1   |
| Future           | 4  | 2 | Relative       | 2   | 1   |
| Sea              | 4  | 2 | Energy         | 2   | 1   |
| Lifeless         | 4  | 2 | Items          | 2   | 1   |
| Drought          | 4  | 2 | Irregation     | 2   | 1   |
| Ignorance        | 4  | 2 | Color          | 2   | 1   |
| Heat             | 4  | 2 | Health         | 2   | 1   |
| Presence         | 4  | 2 | Snake          | 2   | 1   |
| Poison           | 2  | 1 | Organization   | 2   | 1   |
| Compliance       | 2  | 1 | World          | 2   | 1   |
| Agriculture      | 2  | 1 | Fish           | 2   | 1   |
| System           | 2  | 1 | Scrambling     | 2   | 1   |
| Wind             | 2  | 1 | Flower         | 2   | 1   |
| Plastic          | 2  | 1 | Education      | 2   | 1   |
| Birds            | 2  | 1 | Dissolution    | 2   | 1   |
| Total            |    |   |                | 210 | 100 |

Table 5 shows the number of concept in the mental structures of the participants after the application. The participants were observed to list more concepts following the application. These primarily included the concepts of "human" (f=10), "life" (f=10), and "pollution" (f=10). Concepts such as "ecosystem" (f=8), "global warming" (f=8), and "waste" (f=8) were also used.

It was initially seen that the participants prioritized the concepts of "human," "tree," and "animal." These concepts are biotic factors that make up the environment. In the post-application results, in contrast, they highlighted the concepts of "human," "life," and "pollution." Concepts such as "ecosystem," "global warming," and "waste" were also

found in their post-application mental structures. Thus, participants had a life-oriented mental structure regarding the environment before the application, while after the application, they also had concepts in mental structures pertaining to pollution, global warming, and waste. It is thought that the participants acquired life-oriented knowledge through situations such as TV, magazines, or hidden learning elements, whichever of the concepts related to the environment they came across in their daily lives. In fact, the number and variety of concepts before implementation prove this. With the application, it is seen that the participants learned new and various concepts together with environmental concepts, knowledge structure, and the structuring of knowledge.

### Findings Obtained with the Metaphor Test

In this part of the research, the conceptual changes in the mental structures of the participants are shown which are metaphors and metaphorical sentences. Results were organized into categories in order to understand the concepts obtained (Table 3). The metaphors constructed by the participants for the concept of “environment” as formed in their minds were expressed within particular categories. Results were expressed numerically as (f, %) to better understand similar metaphors.

*K1: The environment is like bird sounds, because the more beautiful it is, the better it feels.*

*K7: The environment is like human life, because human life is shaped around the environment, the two are separate wholes, and without one, it is not possible for the other to exist.*

*K11: The environment is like society, because the cleanliness of the environment depends on the order in the environment. The more the social mentality falls behind, the worse the environment will be.*

*K15: The environment is like a box, because it includes a lot of things like society and values.*

*K29: The environment is like a solar system, because it not only centers around the human but also includes all the factors that are human-independent.*

The pre-application metaphors provided by participants K1, K7, K11, K15, and K29 are given above. K1 saw a resemblance between the environment and a bird, with the explanation that they both make him/her feel better. K7 saw a resemblance between the environment and human life, with the explanation that the environment is shaped by humans. Therefore, humans are at the center of the environment. K11 saw a resemblance between the environment and society, as people’s and society’s awareness create humanity’s approach to the environment. K15 stated that the environment is like a box that contains society and its values. K29 saw a resemblance between the environment and the solar system and also indicated that people are at the center of both. It can be said that the above quotations of the participants and the codes underlined in their quotations are always human in the metaphors created for the environment.



K5: The environment is like a human, because you will be rewarded as much as you give. We get as much back as the value and importance that we give to the environment.

K13: The environment is like our lungs, because we need it to breathe well. It is like our homes, because we have to keep both of them clean.

K21: The environment is like a human body, because any malfunction of one of the organs affects the whole body, and the slightest disruption in the surrounding area affects the whole environment in the same way.

K27: The environment is like existence, because the life of all living beings depends on it.

Following the application, K5 saw a resemblance between the environment and humans with the explanation that humans get back as much value and importance as they give to the environment. It was stated that we need to give importance to the environment. K13 saw a resemblance between the environment and our lungs, stating that we need the environment to survive. K21, like K13, saw a resemblance between the environment and the human body, stating that just as any malfunction of one of the organs affects the whole body, the slightest disruption in the surrounding area affects the whole environment. K27 stated that the environment is similar to existence because the continuity of life depends on it. Participants thus saw the environment as a must-have, necessary structure.

**Table 6.**

*Participants' pre-application and post-application metaphors*

| Category                                            | Pre-application Metaphors                           | f  | %  | Post-application Metaphors                                                                  | f  | %  |
|-----------------------------------------------------|-----------------------------------------------------|----|----|---------------------------------------------------------------------------------------------|----|----|
| Environment as an expression of life                | Life (5), Bird (3), Living being (2)                | 10 | 27 | Breath (3), Life (3)                                                                        | 6  | 16 |
| Environment as an expression of importance          | Oxygen (1), Air (1)                                 | 2  | 5  | Lungs (3), Heart (1)                                                                        | 4  | 10 |
| Environment as an expression of reflectiveness      | Human (3), Society (1), Box (1), Paper (1)          | 6  | 13 | Human (2), Homeland (2), Deposit (2), Existence (1), Mirror (1), Lungs (1), Lizard tail (1) | 10 | 30 |
| Environment as an expression of a place             | Home (4), Lab (1), Room (1)                         | 6  | 16 | World (2), Home (3), Shopping Mall (1)                                                      | 6  | 16 |
| Environment as an expression of protection          | Baby (2)                                            | 2  | 5  | Tree (4), Child (2), River (2)                                                              | 8  | 22 |
| Environment as an expression of happiness and peace | Cloud (4), Rainbow (3), Solar system (2), Music (1) | 10 | 27 | Sun (1), Peace (1)                                                                          | 2  | 11 |

Table 6 shows the pre- and post-application metaphors created by the participants. There were 36 metaphors created by the participants before and after the application. The environment was divided into six metaphorical categories, which are "Environment as an expression of life," "Environment as an expression of importance," "Environment as an expression of reflectiveness," "Environment as an expression of a place," "Environment as an expression of protection," and "Environment as an expression of happiness and peace." It was seen that the participants' pre-application metaphors were concentrated within two main categories: "Environment as an expression of life," with metaphors of Life (f=5), Bird (f=3), and Living being (f=2), and "Environment as an expression of happiness and peace," with metaphors of Cloud (f=4), Rainbow (f=3), Solar system (f=2), and Music (f=1). It can be said that metaphors that affect people emotionally are formed in the categorization of metaphors produced. These categories and participant metaphors reflect a more self-centered perspective, where in the environment exists for life and provides happiness and peace. The post-application metaphors were particularly concentrated within the categories of "Environment as an expression of reflectiveness" with metaphors of Human (f=2), Homeland (f=2), Deposit (f=2), Existence (f=1), Mirror (f=1), Lungs (f=1), and Lizard tail (f=1) and "Environment as an expression of protection" with metaphors of Tree (f=4), Child (f=2), and River (f=2). Here, the environment is metaphorized as entities such as protected (child, living thing, etc.), sacred (homeland, human, etc.), and reflective (mirror). These results showed that after the application, the participants thought the environment was sacred and reflective and should be protected.

When the pre-application metaphors produced by the participants are examined, it is seen that they thought that the environment was for sustaining life and that it provided happiness and peace. Turning to the post-application metaphors, it is seen that the participants' concepts in mental structures were related to the protection of the environment, seeing the environment as a reflective tool. Therefore, the participants expressed themselves as the center and focus of the environment in their pre-application metaphors, while in the post-application metaphors they presented themselves as a part of the environment.

### **Findings from the Drawing Test**

In this part of the research, the drawing technique was used to determine the concepts in the mental structures of the participants. The concepts used in each of the drawings were noted and listed according to frequency. They were then thematically classified according to themes of "environment," "human," "plant," "animal," "abiotic elements," and "buildings/vehicles" (Table 7).

The pre- and post-application drawings of teacher candidates were compared. Before the application, drawings of clean environments (f=30) were more common than

drawings of dirty environments ( $f=6$ ). After the application, drawings of dirty environments ( $f=20$ ) were more common than drawings of clean environments ( $f=16$ ). This finding shows that the participants thought more about environmental problems after receiving environmental education. It was observed that the students produced 167 concepts after the application in comparison to 140 concepts before the application. These results were divided into six categories: "human," "plant," "animal," "abiotic items," "buildings/vehicles," and "garbage." Participants produced more concepts after the application. Before the application, the four concepts most frequently produced by the students were "trees" ( $f=17$ ), "home" ( $f=12$ ), "human" ( $f=18$ ), and "bird" ( $f=11$ ). After the application, the concepts of "tree" ( $f=21$ ), "human" ( $f=15$ ), "the sun" ( $f=13$ ), "cloud" ( $f=11$ ), and "home" ( $f=11$ ) were offered by the students most often. While participants perceived the environment as oriented toward humans, plants, and animals in their pre-application answers, they perceived it as being related to abiotic elements, buildings/vehicles, and garbage after the application. This may be due to the fact that while they had life-oriented concepts in mental structures before the application, they started to perceive the environment as a contaminated structure as a result of the environmental education.

**Table 7.**

*Pre-application and post-application drawings of teacher candidates who received environmental education*

| Environment             | Pre-application |     | Post-application |          |     |
|-------------------------|-----------------|-----|------------------|----------|-----|
|                         | <i>f</i>        | %   |                  | <i>f</i> | %   |
| Clean                   | 30              | 83  | Clean            | 16       | 45  |
| Dirty                   | 6               | 17  | Dirty            | 20       | 55  |
| Total                   | 36              | 100 | Total            | 36       | 100 |
| <b>Living Beings</b>    |                 |     |                  |          |     |
| Human                   | 18              | 13  | Human            | 15       | 8   |
| Plant                   |                 |     |                  |          |     |
| Tree                    | 17              | 12  | Tree             | 21       | 12  |
| Flower                  | 8               | 5   | Flower           | 3        | 1   |
| Apple                   | 3               | 2   |                  |          |     |
| Grass                   | 1               | 0.5 |                  |          |     |
| Total                   | 29              | 20  |                  | 24       | 14  |
| <b>Animal</b>           |                 |     |                  |          |     |
| Bird                    | 11              | 7   | Fish             | 7        | 4   |
| Dog                     | 2               | 1   | Bird             | 4        | 2   |
| Animal                  | 2               | 1   | Seahorse         | 2        | 1   |
| Rabbit                  | 2               | 1   | Octopus          | 2        | 1   |
| Cat                     | 1               | 0.5 |                  |          |     |
| Giraffe                 | 1               | 0.5 |                  |          |     |
| Snake                   | 1               | 0.5 |                  |          |     |
| Total                   | 20              | 14  |                  | 15       | 8   |
| <b>Abiotic Elements</b> |                 |     |                  |          |     |

|                           |            |            |                     |            |            |
|---------------------------|------------|------------|---------------------|------------|------------|
| Sun                       | 9          | 6          | Sun                 | 13         | 7          |
| Road                      | 8          | 5          | Cloud               | 11         | 6          |
| Mountain                  | 6          | 4          | Mountain            | 9          | 5          |
| Cloud                     | 5          | 3          | Flower              | 7          | 4          |
| Forest                    | 5          | 3          | Stream              | 5          | 3          |
| River                     | 3          | 2          | Grass               | 3          | 1          |
| Stream                    | 2          | 1          | Branch              | 3          | 1          |
| Rain                      | 2          | 1          | Sea                 | 3          | 1          |
| Water                     | 1          | 0.5        | Soil                | 2          | 1          |
| Soil                      | 1          | 0.5        | Moss                | 1          | 0.5        |
|                           |            |            | Rain                | 1          | 0.5        |
| Total                     | 42         | 30         |                     | 58         | 34         |
| <b>Buildings/Vehicles</b> |            |            |                     |            |            |
| Home                      | 12         | 8          | Home                | 11         | 6          |
| Car                       | 3          | 2          | Car                 | 7          | 4          |
| Building                  | 2          | 1          | Bridge              | 4          | 2          |
| Playground                | 2          | 1          | Way                 | 4          | 2          |
| Mosque                    | 1          | 0.5        | Building            | 4          | 2          |
| Fountain                  | 1          | 0.5        | Bank                | 2          | 1          |
| Helicopter                | 1          | 0.5        | Playground          | 2          | 1          |
|                           |            |            | Parking area        | 2          | 1          |
| Total                     | 22         | 15         |                     | 36         | 21         |
| <b>Garbage</b>            |            |            |                     |            |            |
| Trash can                 | 4          | 2          | Garbage             | 5          | 2          |
| Garbage                   | 2          | 1          | Acid Rain           | 3          | 1          |
|                           |            |            | Plastic             | 3          | 1          |
|                           |            |            | Carrier bag         | 3          | 1          |
|                           |            |            | Bottle              | 3          | 1          |
|                           |            |            | Nuclear Power Plant | 2          | 1          |
| Total                     | 6          | 4          |                     | 19         | 11         |
| <b>Final Total</b>        | <b>140</b> | <b>100</b> | <b>Final Total</b>  | <b>167</b> | <b>100</b> |

Table 7 allows for a comparison of the pre- and post-application drawings of teacher candidates who received environmental education. Before the application, more drawings reflected a clean environment ( $f=30$ ) than a dirty environment ( $f=6$ ). After the application, more drawings portrayed a dirty environment ( $f=20$ ) than a clean environment ( $f=16$ ). These findings show that the participants began thinking more about environmental problems. It was also observed that the students produced 167 concepts after the application compared to only 140 concepts before the application. Those concepts, as described above, were divided into six categories of "living beings," "plant," "animal," "abiotic items," "buildings/vehicles," and "garbage."

Differences can be seen in the pre- and post-application thematic analysis regarding the participants' drawings of the concept of "environment." Before the application, their drawings largely portrayed a clean environment. After the application, however,

participants depicted a dirty environment. Before the application, participants' drawings were oriented toward humans, plants, and animals, but after receiving environmental education, they produced drawings oriented toward abiotic elements, buildings/vehicles, and garbage. It can be inferred that they learned to perceive the environment as it is, as a contaminated structure, while before the application they had living-oriented mental structures.

## Results and Discussion

In this study, which examines the conceptual changes in the minds of teacher candidates regarding the concept of "environment", word association tests, metaphors and drawings were used to analyze the mental conceptual changes of students before and after receiving environmental education at the university level. The high total frequencies of the responses given by the participants in the word association tests provide information about the concept of "environment" in the mental structures of the teacher candidates who participated in the research (Özata Yücel & Özkan, 2015). When the concepts that participants created in the word association test before receiving environmental education are considered, it is clear that they had concepts of "human," "tree," and "animal" at the forefront. These are some of the biotic factors that constitute the environment. After the application, however, the concepts of "human," "life," and "pollution" came to the forefront. It was also observed that concepts such as "ecosystems," "global warming," and "waste" were present in their mental structures. The participants had life-oriented concepts in mental structures regarding the environment before the application but had concepts in mental structures involving pollution, global warming, and garbage after the application. These findings show that conceptual changes occurred in the mental structures of these pre-service teachers with the environmental education they received. It is possible to say that the environmental education caused them to think about environmental problems. As McKibben (2015) stated, environmental problems such as drying rivers, deforestation, water pollution, climate change, toxic wastes, decreased biodiversity, and acid rains drive people to review their attitudes, behaviors, duties, and responsibilities toward the environment and nature by questioning their relationships with nature. When the participants' metaphors were examined, it was observed that they often produced metaphors involving life, clouds, and home before the application while they produced metaphors about breath, lungs, and trees after the application. Similar research was conducted by Aydın (2011), who concluded that students in education and technical faculties often produced metaphors of home, children, and family. Meral et al. (2016) stated that the metaphors of social studies teacher candidates for the concept of "environment" entailed family, mothers, and homes. Examining these previous studies, it is seen that the students' metaphors, except for "home," are not generally similar to each other. This situation reveals that students

studying in different faculties or departments experience different conceptual changes in their mental structures based on different experiences and different prior knowledge. Similarly, Hoban et al., (2011) stated that individuals focus primarily on concrete situations for environmental issues and create mental schemas for concrete concepts.

When the pre-application metaphors produced by the participants were examined, they were seen to reflect a self-centered perspective, whereby the environment is for life, and provides happiness and peace. Humans were portrayed as being at the center of the environment by these students, with a common human-centered perception, as in the example of "The environment is the natural habitat for humans," rather than humans being just one element that interacts with other elements of the environment (Desjean-Perrotta et al., 2008; Moseley et al., 2010; Özata Yücel & Özkan, 2015).

After the application, the participants saw the environment as a reflective tool, and they had gained a mentality for protecting it. Therefore, it can be said that the participants had a conceptual scheme in their minds that saw themselves as the center and focal point of the environment before they received environmental education. It is clear that after receiving this training, conceptual changes have occurred in their mental schemas and they see themselves as a part of the environment. These findings show that the perceptions of teacher candidates can be shaped through environmental education based on the possible consequences of environmental problems (Kızılay, 2020). This conclusion is consistent with the results of the word association test. While humans were first considered to be the center of the environment with a life-oriented mentality, the environment was subsequently considered as a whole with abiotic and non-living elements and a mentality oriented toward taking environmental problems into consideration. It is clear from previous studies that drawings can be used to understand the mental structures for the concept of "environment" at various age levels (Moseley et al., 2010; Judson, 2011; Pan & Liu, 2018). For example, such conceptual change in mental structures was examined through drawings with preschoolers (Ahi & Alisinanoğlu, 2016), primary schoolers (Pınar & Yakışan, 2017), middle schoolers (Taş, 2016; Özcan & Demirel, 2019), secondary schoolers (Shepardson et al., 2007), and university students (Moseley et al., 2010). Shepardson (2005) concluded that forests and trees were dominant in students' drawings. Similar results were reached in the present research. When the post-application drawings of the participants were examined, it was seen that they depicted the environment as dirty. In pre-application drawings, participants portrayed the environment as oriented toward humans, plants, and animals, while after the application they portrayed it as a whole with abiotic elements, buildings/vehicles, and garbage.

Moseley et al. (2010) found that 66.4% of teacher candidates made irrelevant drawings with biotic elements on their own, while 57% of drawings had abiotic elements. In this research, this percentage decreased from 47% before the application to 30% after the

application for biotic elements, while it decreased from 34% before the application to 30% after the application for abiotic elements. Accordingly, the drawings shifted in content to become more oriented toward buildings/vehicles and garbage. This shows that the participants dissected the elements of nature, rather than seeing them as a whole, and understood that the environment has been corrupted and polluted, with the integrity of the concept being lost with human activities (Moseley et al., 2010). The people in the drawings were often depicted as polluting the environment or trying to clean up the polluted environment. As also observed by Özsoy (2012), these findings reveal that people are not only affected by environmental pollution; they also think that human activities are a factor that pollutes the environment. The results obtained with the data collection tools in these studies are consistent with each other. Although more concepts were produced with word association tests compared to metaphors and drawings, the drawing technique is thought to be a more understandable practice in demonstrating conceptual concepts in the mental structures of participants. With a holistic view of the environment, peers, teachers, parents, and social interactions can all focus on how concepts change in mental models about the environment. Environment-related education is increasingly important in higher education (Liu & Lin, 2015). Graduates of secondary and higher education institutions must demonstrate not only assimilation of basic environmental information but also independent deepening, enrichment, systematization, and application under varying conditions (Jefferson et al., 2017). Teacher education programs are challenged to develop curricula and programs that support pre-service teachers' development of a conceptual model of the environment that integrates humans with the abiotic and biotic factors within the environment (Moseley et al., 2010). The findings of the current research show that as a result of environmental education, participants experience an environmentally-centered conceptual change in their minds rather than a self-centered environmental view. In general, when the pre-test and post-test data of the participants are compared, it can be said that a conceptual change has taken place in their minds. The mental conceptual structures of the participants for the concept of the environment have changed from being self-centered to being a part of the environment. It is assumed that 12-week training in environmental education provides these changes. In addition, these changes were determined by the concept association test, metaphor, and drawing-based data collection tools. It is thought that the participation of the participants in the environmental education process strengthens this. It is thought that the suggestions are given within the scope of the research purpose and the consistency of the results will contribute to the field. Environmental education seems to contribute to the development of conceptual change in mental models; in the present work, the environmental education of teacher candidates in higher education allowed them to develop new perspectives on the environment. As teacher candidates will work as teachers in the future, they have the power to influence the next generation. It was understood in the course of this training that human beings harm the environment more than other biotic factors. Therefore, it is



thought that these teacher candidates will play important future roles in producing environmentally conscious students and reducing the negative impact of people. Environmental education should be implemented in all departments of higher education because it should focus not only on knowledge and skills related to advanced professions but also on social values and sustainability. Increasing the number of individuals in higher education who are sensitive to the environment and who believe in sustainability will facilitate the production of social solutions for environmental problems.

### **Recommendations**

Building on the present research, the socioeconomic level, age, gender, education, and department of participating candidates can be compared with the methods of word association, metaphors, and drawing in order to better understand the conceptual change in mental structures of students who have received or have not received environmental education.

It is clear that the comparisons of previous studies have been largely built upon quantitative data. Environmental education processes should be compared according to both quantitative and qualitative data in the future to make the findings more valuable.

In the present research, participants received environmental education for 14 weeks. In this work, the process of environmental education was carried out using traditional methods of education. Future research could be supported by enriched and student-centered applications. The contribution of different educational methods to conceptual change in mental structures can also be examined in future research.

### **Limitations and Assumptions**

The research is limited to the voluntary participation of 36 teacher candidates. It is assumed that the participants responded to the data collection tools in an objective way without worry or expectation. In the research, conceptual changes in the minds of the participants were discussed based on the interpretation of the data obtained from these data collection tools. In the pre-test results of the research, it was determined that the participants had conceptual structures about the environment and environmental education, they formed some conceptual relations and had a certain knowledge. Although they thought of themselves as the center of these conceptual structures and relations, this research is limited to developing and changing the existing knowledge of the participants and the conceptual structure-relationships. Considering the pre-application and post-application knowledge of the participants, it is assumed that they construct the knowledge. The visible changes when comparing the pre-application responses with the post-implementation responses prove this.

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## Genişletilmiş Türkçe Özet

Çevre, insanların yaşamları boyunca etkileşim içinde oldukları çok boyutlu bir yaşam alanıdır (Torunoğlu, 2013). Ancak günümüzde, nehirlerin kuruması, ormansızlaşma, su kaynaklarının kirlenmesi, iklim değişikliği, zehirli atıklar, biyoçeşitlilik kaybı ve asit yağmurları gibi çevre sorunları, insanları çevreleri ve çevrelerine yönelik tutumlarını gözden geçirmeye zorlamıştır (McKibben, 2015). Özellikle hızlı nüfus artışı ve teknolojik gelişmeler hem insan sağlığını hem de doğayı tehdit eden birçok çevresel sorunla karşı karşıya bırakmıştır (Diamond, 2011; Gunder-son, 2014). Bu sorunların temel kaynağı ise insan davranışlarıdır (Koger, 2013). Bu nedenle, insanlar ve çevre arasındaki ilişki artık daha da önemlidir, çünkü insanların doğadan ihtiyaçları her geçen gün artmaktadır. Sanayileşme ve nüfus artışının yarattığı sorunlar, insan sağlığını olumsuz etkilemektedir. Bu nedenle, çevre sorunlarını azaltmanın temel yolu eğitimidir (Miser, 2019). Eğitim, insan yaşamının ayrılmaz bir parçasıdır ve pratik deneyim kazanmamızı sağlar. İnsanlar arasında eğitime ihtiyaç duyan tek canlı organizma insanlardır. Bu nedenle, insanların ihtiyaç duyduğu eğitim sürekli olarak geliştirilmeli ve yeniliklere açık olmalıdır. Doğaya uygun bir eğitim, gelecek nesillerin daha mutlu ve çevre dostu olmalarını sağlayabilir (Bartlett ve Burton, 2014). Çevre eğitimi, insanlara çevre ve çevre sorunları hakkında bilgi kazandırma, çevre sorunlarıyla başa çıkma becerileri ve uzmanlık geliştirme, bilinçli kararlar alma ve çevresel sorunlara çözümler bulma motivasyonunu teşvik eden bir süreçtir (Ryan ve diğerleri, 2020). Özellikle son yıllarda çevre eğitimi, çevre sorunlarına kalıcı çözümler sunma konusundaki önemini artırmıştır. Bu bağlamda, çevre eğitimi, çevre ile ilgili birçok beceriyi, tutumu, davranışı ve bilgiyi geliştirmeye yardımcı olan bir öğrenme sürecidir (Sola, 2014). Çevreye duyarlı bireyler, doğanın korunmasının yanı sıra geri dönüşüm gibi çevresel önlemlerin de önemini kavramışlardır (Miranda & Blanco, 2009). Ancak, çevre eğitiminin etkili bir şekilde uygulanması ve çevre bilincinin geliştirilmesi için eğitim kurumlarının, özellikle üniversitelerin, önemli bir rol oynaması gerekmektedir. Bu nedenle, bu çalışmanın amacı, öğretmen adaylarının çevre eğitimi derslerinin öncesi ve sonrasındaki zihinsel yapılarını incelemektir. Çalışmanın alt problemleri, öğrencilerin kelime ilişkilendirme testleri sonuçlarını, metaforları ve çizimlerini uygulama öncesi ve sonrası olarak karşılaştırmayı amaçlanmıştır.

Bu çalışmada, nitel araştırma yöntemlerinden biri olan durum çalışması yaklaşımını kullanmıştır. Katılımcılar, bir devlet üniversitesinin eğitim fakültesinde sınıf öğretmenliği bölümünde öğrenim gören 36 öğrenciden oluşmaktadır. Araştırmanın yapıldığı üniversiteden etik izin alınmış ve katılımcılar araştırmaya gönüllülük esasına göre katılmıştır. Veri toplama yöntemleri olarak kelime ilişkilendirme testi, metaforlar ve çizimler kullanılmıştır. Veri analizi betimsel analiz kullanılarak yapılmıştır. Bulgular, tematik çerçeveye göre işlenmiş ve yorumlanmıştır. Araştırmanın geçerliliği katılımcılarla yapılan görüşmelerle sağlanmış ve güvenilirlik % 93 olarak hesaplanmıştır.

Çalışmanın sonuçlarına göre, öğrencilerin zihinsel yapılarında önemli değişiklikler gözlemlenmiştir. Kelime çağrışım testi sonuçlarına göre, çevre kavramı öncesi zihinsel

yapılarında katılımcılar sıklıkla "insan," "ağaç," ve "hayvan" gibi biyotik unsurlarla ilişkilendirilirken, çevresel eğitim müdahalesi sonrasında bu ilişkilendirilen terimler "insan," "hayat," ve "kirlilik" gibi kavramlara kaymıştır. Bu değişim, çevresel eğitimin katılımcıların çevresel sorunlar hakkında daha derin düşünmelerine yol açtığını göstermektedir. Metafor analizi sonuçları, öğrencilerin çevre kavramını önceki olarak insan merkezli bir perspektifle gördüklerini, ancak çevresel eğitimi takiben çevreyi bir yansıma aracı olarak gördüklerini göstermektedir. Bu, çevresel eğitimin katılımcıların kendilerini çevrenin ayrılmaz bir parçası olarak görmelerine katkıda bulunduğunu yansıtmaktadır. Çizim testi sonuçları, öğrencilerin çevreyi önceki olarak temiz bir şekilde tasvir ettiklerini, ancak çevresel eğitim sonrasında kirli bir çevreyi daha sık tasvir ettiklerini göstermektedir. Ayrıca, çevresel eğitimi takiben katılımcıların çevreyle ilgili daha fazla kavram ürettikleri ve bu kavramların öncelikle abiyotik unsurlar, binalar/araçlar ve çöpler gibi faktörlere odaklandığını göstermektedir. Bulgular, çevresel eğitimin öğrencilerin zihinsel yapıları üzerinde önemli etkileri olduğunu göstermektedir. Özellikle çevre kavramını daha geniş bir perspektiften anlamalarına ve çevresel sorunlara daha fazla dikkat etmelerine katkıda bulunmuştur. Bulgular, çevre eğitiminin önemini göstermekte ve çevresel farkındalığın artırılması için eğitim programlarının çevre odaklı bileşenlerle güçlendirilmesinin gerekliliğini göstermektedir. Araştırma, üniversite düzeyinde çevre eğitimi alan öğretmen adaylarının "çevre" kavramına yönelik zihinsel değiştiğini göstermektedir.

Çalışma, önceki çalışmaların sonuçları ile uyumlu bir şekilde, yükseköğretim müfredatına çevre eğitimi dahil etmenin önemini vurgulamakta ve özellikle öğretmen adayları arasında çevreyi daha iyi anlamalarını ve çevresel sorunları ele almalarını sağlayacak bir bütüncül kavram modeli geliştirmeye odaklanması gerektiğini göstermektedir. Çalışma, gelecekteki araştırmalar için birkaç yol önermektedir, bunlar arasında çevre eğitimi alan ve almayan öğrencilerin kavramsal yapılarındaki değişimi anlamak için kelime çağırışımı, metaforlar ve çizimler yöntemleriyle farklı sosyo-ekonomik düzeyler, yaş grupları, cinsiyetler ve akademik bölümler arasında karşılaştırmalar yapılabilir. Ayrıca, gelecekteki araştırmalar farklı ve daha öğrenci merkezli çevre eğitimi yöntemlerinin etkisini inceleyebilir. Ancak, bu çalışmanın sınırlamalarını kabul etmek önemlidir, bunlar arasında yalnızca 36 gönüllü katılımcının kullanılması ve katılımcıların veri toplama araçlarına objektif yanıtlar verdiği varsayımı bulunmaktadır. Bu araştırma, öncelikle mevcut bilgi ve kavramsal yapıdaki değişiklikleri değerlendirmeye odaklanmış ve bilgi oluşturma sürecine derinlemesine inmemiştir. Sonuç olarak, bu çalışma, çevresel eğitimin bireylerin çevre algılarını şekillendirmedeki dönüştürücü potansiyelini vurgulamakta ve özellikle gelecekteki öğretmenler arasında çevresel sorunlara yaklaşmalarını sağlayacak bilinçli bireyler yetiştirmenin önemini vurgulamaktadır.

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| Authors       | Contact                                                               |
|---------------|-----------------------------------------------------------------------|
| İsmail Dönmez | Muş Alparslan University, Turkey<br>E-mail: i.donmez@alparslan.edu.tr |
| Salih Gülen   | Muş Alparslan University, Turkey<br>E-mail: s.gulen@alparslan.edu.tr. |

# Online Counseling through the Eyes of University Students

Funda Barutçu Yildirim\*, Selin Onayli\*\*, Nureda Taşkesen\*\*\*

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**Abstract:** This study examined university students' knowledge levels, experiences, opinions, preferences, and suggestions for improving online psychological counseling services with a phenomenological qualitative research design. The data were collected in two stages using the Online Counseling Interview Form (OCIF) developed by the researchers. In the pre-COVID-19 period, researchers interviewed ten university students, and during COVID-19, they reached out to 11 more students. Descriptive analysis showed that students' knowledge levels and experiences increased, and most students were eager to use online counseling services. Moreover, students provided worth-stressing information about their preferences and suggestions regarding the announcement, design, and implementation of online counseling to improve online counseling services in universities.

**Keywords:** University students, online counseling, counseling services, mental health services, distance counseling.

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\*  Corresponding Author's: Asist. Prof. Dr., Middle East Technical University, Faculty of Education, Department of Educational Sciences, Psychological Counseling and Guidance Program, Türkiye, barutcu@metu.edu.tr.

\*\*  TED University, Faculty of Education, Department of Educational Sciences, Psychological Counseling and Guidance Program, Türkiye, selin.onayli@tedu.edu.tr.

\*\*\*  Ph.D. candidate, Norwegian University of Science and Technology, Department of Psychology, Norway, nureda@metu.edu.tr.



## Introduction

The increase in the prevalence of mental illness in the 21<sup>st</sup> century is a controversially debated topic, with research resulting in mixed results (Bor et al., 2014; Richter et al., 2019). It was not until the COVID-19 pandemic that an indisputable increase was observed in psychological symptoms such as depression, anxiety, stress, and alcohol use (Ahmed et al., 2020; Conti et al., 2022; Wang et al., 2020; Wettstein et al., 2022). With increasing trends, especially after COVID-19, information and communication technologies (ICT) have diffused into almost every aspect of our lives, such as communication, education, trade, health, etc. Like many other areas, mental health disciplines are also exposed to transformation with ICT integration, and new modalities have emerged. Online counseling (OC) is one of them. Different terminologies can be used interchangeably for OC: distance counseling, e-therapy, and cybertherapy (ACA, 2014; Manhal-Baugus, 2001). OC is defined as 'any delivery of mental and behavioral health services by a licensed practitioner to a client in a non-face-to-face setting through distance communication technologies such as the telephone, asynchronous e-mail, synchronous chat, and videoconferencing' (Mallen & Vogen, 2005, p. 764).

Formerly, OC was found feasible, especially for typically isolated people who are reluctant or unable to receive face-to-face mental health services, such as patients with chronic illnesses (see Mallen & Vogen, 2005 for a review). However, this situation seems applicable to millions of people around the world after the outbreak of the COVID-19 pandemic (WHO, 2020). In 2014, it was predicted that 25% to 50% of healthcare services would be conducted online by 2020 (Weinstein et al., 2014). Before the COVID-19 pandemic, 36% of mental health practitioners were using online services; however, in May 2020, 85% of the respondent practitioners said that online services are used by more than  $\frac{3}{4}$  of their clients (APA, 2020). Recent conditions are changing attitudes toward internet-based applications, and studying the subject in different contexts is becoming essential.

Until today, OC literature includes the history and development of OC (Skinner & Zack, 2004), ethical issues (Childress, 2000; McVeigh & Heward-Belle, 2020; Stoll et al., 2020), training and supervision of online counselors (Mallen et al., 2005) practitioners' experience and attitudes regarding OC (Barker & Barker, 2022; Barnett et al., 2021; Kupczynski et al., 2017), clients' attitudes toward OC (Amos et al., 2020; Rochlen et al., 2004a; Young, 2005), implementation of OC in specific problem areas such as depression, anxiety, or post-traumatic stress disorder (Andersson et al., 2014; Andrews et al., 2018; Berryhill et al., 2019; Kuester et al., 2016), comparison of OC with face-to-face counseling (FTFC) (Barak et al., 2008; Drago et al., 2016; cf. So et al., 2013), and advantages and disadvantages of OC.

Previous studies showed that OC has a lot of advantages, including accessibility, flexibility, immediacy, an enhanced sense of safety (Fang et al., 2018), convenience (Vongtangswad et al., 2017), reasonable prices (Centore & Milacci, 2008), anonymity (Young, 2005), lower stigma related to specialist visits, and specific benefits for diagnosis such as agoraphobia (Aboujaoude et al., 2015). Moreover, clients living in



geographically remote areas or who are disabled could access online counseling more easily (Sussman, 2004). Some challenging parts have also been discussed regarding the therapeutic alliance, technology-related difficulties, concerns with confidentiality (Aboujaoude et al., 2015), and lack of face-to-face interaction resulting in limited nonverbal communication (Callahan & Inckle, 2012).

Since face-to-face communication is not possible in OC, as mentioned as a disadvantage, non-verbal communication becomes very limited, which is crucial for understanding the client's message correctly. It has long been known that nonverbal communication accounts for as much as 93% of interpersonal communication (Mehrabian, 1971), regulating interactions by giving hints about individuals' intentions and emotional states (Patterson, 1983). In order to overcome the limitation of non-verbal messages in OC, emojis can be used, especially in written communication (e.g., chatbox, email, instant message, etc.). According to Evans (2017), in written communication formats where facial and bodily expressions are lacking, emojis are the visual representations used to convey feelings and ideas (Evans, 2017). Although they are pretty popular in social media and instant messaging apps, the scientific literature is relatively limited.

Every day, the diversity and usage of emojis are growing, reaching more than 3,353 available emojis for 2021 and 5 billion emojis sent a day (Buchholz, 2020). These graphic symbols might fail to compensate entirely for nonverbal communication patterns, but research shows that they strengthen the attention and understanding of the reader (Kralj Novak et al., 2015). Also, a study that was conducted with young individuals who keep records of their emotional states with an emoji app showed that emoji use changed for clinical and non-clinical youth groups, supporting the idea that tracking the use of these symbols might be used meaningfully in professional counseling (Van Dam et al., 2019).

However, research advises caution in interpreting emojis because they might be used in various forms and frequencies in different cultures and genders (Rodrigues et al., 2018; Takahashi et al., 2017). Also, in online clinical conversations, students tend to perceive counselors as having less expertise when counselors do not match their language use with students and have an informal tone of communication by using more abbreviations and emoticons than themselves (Haberstroh, 2010). Emojis may affect interactions in online communication, whether clinical or not. Lack of nonverbal communication and an increased likelihood of misunderstandings are noted disadvantages of online therapeutic interactions (Rochlen et al., 2004b). However, it is still unclear if the appropriate emoji use can shift these criticisms toward a more positive side. Thus, evaluating students' approach toward emoji use in OC interactions becomes essential, as this study intends to.

Different delivery formats come into prominence, considering OC's specific characteristics. While former OC practitioners often employed asynchronous formats such as e-mails or texts (Ström et al., 2000; Jones, 2003) and described them as the easiest way to reach clients (Sussman, 2004), improvements in technology diversified the



range of convenient online mental health delivery techniques with video calls, live chats, voice messages, etc. However, the utility of each format may differ regarding its specific qualities. For example, asynchronous formats, such as e-mails or text messages (SMS), might have the advantage of the client and counselor accessing therapeutic conversations at any time, but the same quality might risk confidentiality due to decreased data security (Andersson, 2016; Childress, 2000).

Moreover, researchers previously stated that the utility of OC services might differ according to the client's characteristics or the content of the problem. For example, online mental help was less suitable for counselees with psychiatric disorders such as personality disorders or severe suicidality (Mallen et al., 2005; Manhal-Baugus, 2001; Rochlen et al., 2004b). However, Caspar and Berger (2005) offered a contrasting discussion by remarking that it might be exceedingly feasible for some clients with severe psychological issues such as schizoid personality disorder because diverse formats of OC might prepare the client for intense face-to-face therapy that the client would not be able to enter otherwise. Similarly, it might be helpful for topics involving shameful issues (Mallen et al., 2005).

The demand for mental health services increases in different contexts, such as higher education (CCMH, 2021). When common developmental challenges such as relationship and family issues, career problems, and high academic stress come together with limited financial resources during university years, receiving psychological help might become very difficult for this age group. However, these ages are essential to contributing to their future lives (Eisenberg et al., 2007). Considering university students' excessive use of technology in their personal lives and academic tasks (Jones et al., 2007), OC might target university students by utilizing its advantages.

Diverse implementations of online mental health services in higher education were researched (Day et al., 2013; Fang et al., 2018; Thomas et al., 2015; Wagner et al., 2014; Walsh & Richards, 2017), and studies showed an increase in mental health outcomes of university students such as greater well-being and life functioning (Benton et al., 2016) as well as symptom reduction for depression, anxiety, hopelessness, low self-esteem, and automatic negative thoughts (Wagner et al., 2014), and stress (Day et al., 2013). No significant difference was found between face-to-face and OC regarding these symptoms (Wagner et al., 2014) or life satisfaction, positive affect, and negative affect (Zeren et al., 2020). Also, students' motivators and demotivators in engaging with different formats of online therapy (Hanley & Wyatt, 2020) and their reasons for dropping out of the online services were explored (Buyruk Genç et al., 2019). It was shown that OC might be an effective and efficient form of psychological help for university students. Therefore, it is important to understand students' views, first-hand experiences, and preferences to provide better opportunities for future implications of OC in the higher education context. This study intends to do so by also considering gaps in the literature.

As mentioned earlier, the COVID-19 pandemic increased the use of ICT in many aspects of our lives, and OC services are one of them. This study, conducted before and during



the pandemic, becomes unique by investigating university students' knowledge of and experiences in OC in two different timelines to consider the effect of the pandemic.

While examining OC, most studies focus on one of the OC formats and discuss these interventions accordingly. Few studies have focused on the preferences of particular online formats or their effectiveness according to the problem area (Armoiry et al., 2018; Liu & Gao, 2021; Wentzel et al., 2016), and the number of these studies is even fewer in the context of higher education (Hanley & Wyatt, 2020). However, as discussed before, different OC formats hold several strengths and challenges, and the preferences of OC formats might differ for the problem areas presented by the client. Therefore, it is essential to understand these preferences and suggestions for improvements in OC within the higher education context, where mental health services are vital and should be enhanced, especially in light of the continued trend of OC services in the future. Similarly, consideration of possible facilitators in particular formats, such as emojis replaced by non-verbal communication, is an important area to explore through the opinions of university students since their effects on online communication are recognized (Kralj Novak et al., 2015), but still debated for OC services (Haberstroh, 2010; Rodrigues et al., 2018; Takahashi et al., 2017). Therefore, this study intends to fill the related gaps in the literature by examining university students' knowledge levels, experiences, opinions, preferences, and suggestions for improving online psychological counseling services with a phenomenological qualitative research design.

## **Method**

Two studies in which a phenomenological qualitative research design was utilized were conducted by considering the effect of COVID-19 on OC prevalence and applications. Both studies had the same purpose and method. However, the data were collected before the pandemic in Study 1 and during the pandemic in Study 2.

### **Participants**

To examine a phenomenon in depth, the number of participants should be limited (Yildirim & Simsek, 2011). For this reason, ten university students (six female and four male) participated in Study 1. None of the participants studied in a department related to mental health (psychologist, psychiatrist, psychological counselor, social services, etc.). The participants of Study 1 consisted of two aerospace engineering, two business administration, one political science and public administration, one chemistry, one mathematics, one computer engineering, one architecture, and one elementary mathematics teaching department student. The age of Study 1 participants ranged between 19 and 25 ( $M = 22.50$ ,  $SD = 2.51$ ). Two were first, two were second, one was third, four were fourth, and one was fifth-grade students.

The participants of Study 2 included 11 university students, six female and five male. Two students from physics, one student each from mathematics, molecular biology and genetics, industrial engineering, metallurgical and materials engineering, aerospace

engineering, economics, political science and public administration, and industrial design department participated in Study 2. The Study 2 participants' ages ranged between 19 and 27 ( $M = 22.18$ ,  $SD = 2.48$ ). Two were first, two were second, two were third, and five were fourth-grade students.

### **Instrument**

Researchers developed a semi-structured Online Counseling Interview Form (OCIF) by reviewing the literature. As Kempler and Kelly (2007) suggested conducting cognitive interviews while developing self-reported measures, three cognitive interviews were conducted. In the cognitive interviews, students shared their thoughts about the questions (i.e., content validity, clarity, readability) and their suggestions to improve the questions. Afterward, two experienced psychological counselors with Ph.D. degrees reviewed the form and mentioned that the questions were clear and adequate. OCIF includes questions related to demographic information (i.e., gender, age) and assesses students' knowledge level, views, experiences, preferences, and suggestions regarding OC.

### **Data Collection Procedures and Analyses**

After obtaining the approval of the university's ethics committee, participants were invited by e-mail. Volunteer participants signed the consent forms before the interview. The interviews in Study 1 were conducted face-to-face before the pandemic. The interviews in Study 2, using the same interview form, were conducted online as the pandemic continued.

Recorded interviews were transcribed verbatim. The descriptive analysis method was used because the themes were created by considering previous study findings and research questions (Yıldırım & Şimşek, 2011). Two researchers coded the data independently to increase the internal reliability (Lecompte & Goetz, 1982). Then, the coding was checked for consistency, and it showed that they were largely compatible with each other. Finally, common codes and themes were clarified, and the quotations that best expressed these themes were selected.

## **Results**

### **Knowledge of OC and Experiences with FTFC and OC**

We asked our participants what OC is and what they knew about OC practices. In study 1, five reported that they had not known about OC. Five participants said that they had already known about OC. Some of their descriptions are 'a consultancy service provided in an online environment where video and sound can be shared (P1),' and 'psychological counseling received through video calls via electronic tools (P7).' P4 searched OC and found different options such as Skype calls, e-mailing, and websites. P5 filled out an application form for OC, but the center replied that the stated problem area was inappropriate for receiving OC and referred P5 to face-to-face counseling. In study 2, five had not known. However, six knew about OC: Some described OC as a

'helping process with applications such as Skype over the Internet (P11)' and 'a process, led by a real expert, which aims to increase self-awareness via some devices' (P13).'

We asked about their history of receiving FTFC and OC. In study 1, four participants received FTFC, but none received OC. We also wondered if they would receive OC if their university had OC services and they needed counseling, too. Seven would receive OC, but two would not. One mentioned that her first choice would be FTFC, but she would receive OC if required.

In study 2, six participants received FTFC, and four received/were receiving OC on academic challenges from their university center using videoconferencing applications. Regarding their experiences, P11 said:

I cannot say I feel a huge difference. I did not have any self-disclosure problems or any communication difficulties. However, sometimes, whether it is Zoom or Skype, you cannot hear the other person while you are talking, or something strange happens, and sometimes the conversation is interrupted. Aside from this weirdness, I do not have many complaints.' P13 said, 'I think it is very nice to see the person face to face directly on the screen. Because we do not focus on other movements, I usually look at your hand to see if it is moving. However, it does not disrupt my attention when it is on the internet. I think it was very nice in this respect.

After the pandemic outbreak, the prevalence of OC services increased inevitably, and the university where we collected data started to provide OC to a limited extent. In study 2, we asked whether they would receive OC when needed. Nine reported that they would receive OC, but two would not.

### Views on the Advantages and Disadvantages of OC

Participants' views on the advantages and disadvantages of OC are summarized in Table 1.

**Table 1**

*Participants' Views on the Advantages and Disadvantages of OC*

|               |                                                    | f1 | f2 |
|---------------|----------------------------------------------------|----|----|
| Advantages    | Cheaper cost                                       | 7  | 5  |
|               | Increased accessibility                            | 7  | 2  |
|               | Saving time and energy                             | 6  | 10 |
|               | Flexible scheduling                                | 6  | 7  |
|               | Sense of comfort/ easier self-disclosure           | 5  | 6  |
|               | Anonymity                                          | 4  | 4  |
|               | Exceeding geographical limitations                 | 5  | 5  |
|               | Receiving OC in their comfort zone                 | 3  | 5  |
|               | Privacy                                            | 2  | 4  |
| Disadvantages | A lack of face-to-face communication               | 10 | 10 |
|               | Difficulty in establishing a trustful relationship | 6  | 3  |
|               | Difficulty in non-verbal communication             | 5  | 5  |
|               | Decreased intimacy                                 | 2  | 3  |
|               | Decreased authenticity                             | 1  | -  |
|               | Technology problems                                | 7  | 10 |

Note.  $f_1$  = frequency in study 1,  $f_2$  = frequency in study 2

## Preferences on the Formats of OC

We provided six formats to assess the format preferences and asked them to rank from the most preferred to the least. The results are summarized in Table 2.

**Table 2**

### *Participants' Preferences on the Formats of OC*

|           | <i>Format (<math>f_1</math>)</i>       | <i>Format (<math>f_2</math>)</i> |
|-----------|----------------------------------------|----------------------------------|
| 1. choice | VC (6), PC (2), LC (2)                 | VC (11)                          |
| 2. choice | PC (6), VC (2), LC (1), EM (1)         | PC (9), LC (1), TM (1)           |
| 3. choice | VE (7), TM (2), PC (1).                | LC (7), PC (1), TM (1), EM (1)   |
| 4. choice | LC (6), VC (1), TM (1), EM (1), VE (1) | VE (9), LC (2)                   |
| 5. choice | TM (5), VE (2), PC (1), LC (1), EM (1) | TM (8), VE (1), LC (1), EM (1)   |
| 6. choice | EM (7), TM (2), VC (1),                | EM (9), TM (1), PC (1)           |

Note.  $f_1$  = frequency in study 1,  $f_2$  = frequency in study 2, VC = Video call, PC = phone call, LC = live chat, EM = e-mail, VE = Voicemail exchange, TM = text message.

## Views of the Usage of Emojis in Written Formats of OC

We asked participants to what extent they think emojis can replace body language and facial expressions in written OC. In study 1, nine participants, and in study 2, seven participants reported that emojis could not replace body language and facial expressions, but some gave credit to emojis to a limited extent. P3 stated:

Emojis cannot replace body language and facial expressions entirely because mimics and gestures are something that cannot be replaced with anything else. Although there are many different emojis, they are still limited for expressions, but of course, I think emojis can reveal something approximate....

Most of the participants reported authenticity problems related to the use of emojis in written communication. P20 explained it as follows:

When I use emojis, they do not reflect my current feelings. I can send a smiley face when I am sad or a sad face when I am not.

### Preferences for Receiving OC or FTFC Services According to the Problem Areas

To reveal the participants' preferences for receiving OC or FTFC according to the problem areas, we provided a list including some common difficulties university students may encounter. Participants rated each problem area on a five-point scale (1 = Definitely prefer online, 2 = Maybe prefer online, 3 = Either, 4 = Maybe prefer face-to-face, 5 = prefer face-to-face). Table 3 summarizes participants' preferences for counseling types according to the problem areas.

**Table 3**

*Participants' Preferences for Counseling Types According to the Problem Areas*

|                                | Study 1 |      | Study 2 |      |
|--------------------------------|---------|------|---------|------|
|                                | M       | SD   | M       | SD   |
| Adaptation to university life  | 3.30    | 1.34 | 3.55    | 0.82 |
| Academic concerns              | 3.60    | 1.10 | 3.18    | 1.17 |
| Romantic relationship issues   | 3.80    | 1.03 | 3.64    | 1.21 |
| Friendship problems            | 3.40    | 1.26 | 3.36    | 1.03 |
| Conflict at home/dormitory     | 3.00    | 1.15 | 3.73    | 1.01 |
| Career planning                | 3.40    | 1.17 | 2.91    | 1.37 |
| Family issues                  | 4.40    | 1.07 | 4.00    | 1.83 |
| Health problems                | 4.10    | 1.10 | 3.18    | 1.08 |
| Concerns about sexuality       | 3.60    | 1.26 | 3.55    | 1.57 |
| Sexual abuse/violence          | 4.00    | 1.33 | 4.27    | 1.62 |
| Internet addiction             | 3.10    | 1.37 | 3.36    | 1.50 |
| Substance use                  | 4.00    | 1.33 | 4.09    | 1.37 |
| Physical appearance/body image | 3.00    | 1.25 | 3.60    | 1.26 |

Note.  $f_1$  = mean scores lower than 3 indicate a preference for OC; mean scores equal to 3 indicate equal preferences for OC and FTFC; mean scores higher than 3 indicate a preference for FTFC.

### Suggestions for Increasing the Effectiveness of OC Services at Universities

We wanted participants to share their suggestions for increasing the effectiveness of online psychological counseling services at universities. In study 1, participants made suggestions about the announcement or advertisement ( $n = 6$ ), the format of the OC ( $n = 4$ ), and the administration of the OC ( $n = 7$ ). P6 and P10 emphasized that students should be made to trust the OC system during the announcement phase. P6 specifically suggested that students who benefited from OC could anonymously share their experiences in the announcements. Similarly, P7 and P10 suggested that the advantages of OC might be shared with students in the announcements. The suggestion for the announcement and advertisement of P8 is:

Maybe most people ask if it works because it is a new thing. Is it possible? It is necessary to show them how it works and the consequences.



The suggestions for the format of OC applications at universities are as follows:

I think it should not be synchronized all the time. It depends on the problem. For personal problems, synchronized formats would be much better. Still, for the problems that everyone can encounter, like career planning or university adaptation, asynchronized formats can be more efficient and time-saving (P1)

WhatsApp can be used. If it is possible, I suggest using synchronized formats. In addition, a phone line can be created for special and urgent topics like suicide (P2).

Different format options should be provided to students, depending on students' choices; it could be video or phone calls (P9).

In addition to the announcement and format, some participants made suggestions about the administration of OC. P1 suggested that the university can make a pilot application, and then, according to the feedback, the number of services can be enlarged. P2 suggested developing a system that categorized the reported students' problems and referred them to the right expert. P3, P5, and P8 indicated that the counseling services should reach more people. P8 especially suggested that the counseling service could agree with the counselors working out of the university. P9 suggested that clients choose the format, meeting hours, and counselor. P4 suggested that an isolated environment should be arranged for the clients. The suggestion from P9 is:

If it were like an application and people could choose the doctor they wanted and meetings could be arranged at any time they wanted....

In study 2, they made suggestions about announcement/advertisement ( $n = 8$ ), the format of OC ( $n = 6$ ), and the administration of OC ( $n = 8$ ). Students suggested using social media (P 11, P16), e-mail (P14), and the university's web page (P18) for sharing announcements. P13 and P17 added announcements should include the advantages and effectiveness of OC. Regarding the format, P12 and P18 suggested video calls, and P16 underlined not to choose any written format for severe problems. P15 suggested using a questionnaire at the beginning of the semester to let the students choose the format. The appointments that should be made on the online system were the suggestion of P11. P19 suggested that starting with FTFC and then continuing with OC would be better to reduce the disadvantages. Study 2 participants had suggestions for the administration of OC. P11 suggested prioritizing emergency conditions and clients and creating a hotline, and similarly, P18 said students should reach out via message in severe conditions. P12 and P16 suggested having more counselors to get more students. P13's solution for raising the number of counselors is:

...Maybe some experts could be volunteers, and I can also reach them. Maybe it will help more; for example, one of our instructors has 3 hours of free time a week. He may want to volunteer to do it. Students can also be directed to him.

Another suggestion was for the students staying in the dormitory; P17 suggested an online meeting center where confidentiality can be provided for students staying in dormitories. Students with disabilities should be able to reach the system regularly, was the suggestion of P13. P21 said the meeting hours should be flexible, and online group

counseling services should be offered. P19 suggested providing financial support to students with internet problems and added

*...about confidentiality. Because that is one of the things that stops most people at this point. I also have it in my company. For example, I have a friend who pays attention to even the smallest of his movements as if they will harm him in any aspect of his life. Will my information be used somewhere or something like that?... That's why this part is also essential. People think. I think this can be solved by signing a declaration, as we have just discussed, that shows the information will not be used anywhere and will remain only between us. These kinds of things can make people talk more.*

## Discussion

This research examined university students' knowledge level, experiences, views, preferences, and suggestions on OC services. Online psychological help might be especially suitable for university students, considering their developmental challenges, academic loads, and other issues, such as financial difficulties (Walsh & Richards, 2017). The findings from this qualitative study can help mental health professionals and university administrations when implementing OC in educational settings. By considering the current results and the discussions of the topics in the literature, it might be possible to understand how to implement OC in a higher education context more efficiently.

Previous research on mental health services shows that individuals who formerly received psychological help develop more positive attitudes towards it, especially those with positive experiences (Vogel et al., 2005). These results seem to apply to OC and the current study. Results show that most students are positive about using OC services at their university. Also, the predominance of online services in the university after the COVID-19 pandemic seems to increase the likelihood of OC experience and positive attitudes toward these services.

Regarding the advantages of long-distance psychological support, previous research focuses on benefits related to geographical flexibility, convenience, targeting specific disabilities such as agoraphobia or social anxiety, and the low-cost nature of OC (Aboujaoude et al., 2015; Pollock, 2006; Young, 2005). Likewise, these themes emerged the most in the results of our study, under the names of cheaper cost, increased accessibility, saving time and energy, flexible scheduling, and having access to counseling services without leaving one's comfort zone.

A current review by Hanley and Wyatt (2020) on higher education students' experiences with OC showed that students feel safer and more comfortable when they avoid face-to-face contact and remain anonymous. Online platforms for communication are regarded as less intimidating in other studies (Lewis et al., 2003). Also, stigma regarding getting psychological help brings negative feelings such as shame and fear of judgment (Hanley & Wyatt, 2020). The current study yields similar results on students' views on the advantages and disadvantages of OC. Using online platforms for counseling is associated with a sense of comfort and easier self-disclosure. Anonymity and privacy — not being seen in the counselor's office— are regarded as advantages. One of our





participants stated that going to a counselor's office might bring negative feelings such as feeling needy or fear of being seen and judged by others. Nobody else has to see someone getting help on online platforms unless they want to share it on purpose. This might reduce psychological pressure when getting mental help (e.g., Aboujaoude et al., 2015; Amos et al., 2020; Young, 2005). Studies provide similar outputs by participants sharing that *'I had a problem asking for help. Online therapy attracted me because I thought it would indicate whether I was worthy of talking to someone and getting help.'* (Dunn, 2012, p. 323) and *'... It is very intimidating sitting one-on-one with someone and chatting about yourself.'* (Walsh & Richards, 2017, p. 26) In this regard, OC can provide a good opportunity for university students to get psychological help in their comfort zone and level of tolerance in a less threatening environment.

However, in the current study, not having face-to-face communication is also considered a disadvantage. It is associated with difficulty understanding each other, difficulty evaluating facial expressions, gestures, limited body language, and decreased intimacy between counselor and client. Also, it is stated that online communication might create a more suitable environment for clients to hide their real emotions. It might increase the possibility of being dishonest with the counselor. In the studies of Cui et al. (2010) and Lewis et al. (2003), very similar results are presented in terms of this contradiction. Although participants were more comfortable and willing to disclose themselves in OC, they demonstrated higher genuineness in FTFC and a less emotional bond with the counselor in OC (cf. Mallen et al., 2003).

To understand this dichotomy, it might be beneficial to consider different formats of OC. The most preferred formats in our study were synchronous, and they included video and voice exchanges such as video calls and phone calls. Asynchronous and text-based communication methods such as emails and text messages were relatively less preferred. Considering the disadvantages of OC presented in our study, concerns about lack of face-to-face communication based on limited body language, decreased intimacy and trust, and forming a setting for dishonesty might originate from the idea of asynchronous text-based formats of OC. In a recent study by Amos et al. (2020), university students expressed similar concerns in email and text message-based interactions with counselors. Though written formats of OC are now being researched and discussed as more feasible due to the shortage of counselors, time constraints, and high costs of face-to-face delivered treatments (McLean et al., 2020).

Participants also frequently mentioned concerns with technological problems and privacy and security issues. In the interviews during the COVID-19 pandemic, these concerns seem to increase in possible problems such as family issues and conflict at home or in the dormitory. This might be because of the lockdown rules and 'stay at home' calls across the country, making it harder to maintain privacy at home. Online psychological services may be less suitable for individuals suffering from violence, sexual abuse, or high psychiatric disturbance (Abbott et al., 2008; Caspar & Berger, 2005). In the current study, security and trust issues in OC are prevalent in possible problem areas that require high self-disclosure, such as sexual abuse/violence and substance use. In both studies, most participants strongly preferred FTFC over online services, stating that it would be

easier to trust the specialist in the same physical environment when the mentioned problems are present. Participants chose OC on topics that do not require in-depth self-disclosure, such as career planning, academic concerns, and internet addiction.

As Skinner and Zack (2004) stated, synchronous and asynchronous formats of OC serve unique purposes. They possess a different combination of advantages and disadvantages of OC. Choosing the best option might be possible by considering individual characteristics, preferences, and problem areas. When implementing OC services in universities, students' suggestions should be considered to improve the effectiveness of these services. Results show that efficient announcements and information policies are essential to increasing students' trust in OC services. Multiple formats can be offered due to the students' diverse preferences and problem areas, and a unique phone line can be created for urgent problems. Also, the number of online counselors should be high to meet the increasing needs. By examining the university's results, mental health professionals and university administrations can offer more efficient OC services in universities.

The suggestions for future research could include having participants who have used FTFC at least once in their lives. Therefore, we can see their views of them according to their experiences. Moreover, a study that includes counselors will be helpful in assessing their opinions about OC.

The present study results will contribute to the implications for counseling practice. The participants' suggestions are critical to making the OC system effective. The universities' counseling services could meet the needs of the students. Therefore, OC could be for more students than at present. According to the participants, good announcements, being able to reach the counselor in risky conditions, having service when they need counseling sessions, and choosing the format by considering their aim could be regarded as reaching students through OC. Furthermore, this study will be helpful to the counselors because they know the exceptions of students. In conclusion, by considering the results of the present study, counseling services and counselors could improve their systems.

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## Geniřletilmiř Trke zet

evrimii psikolojik danıřmanlık, yz yze olmayan bir ortamda, telefon, e-posta, eřzamanlı sohbet, videokonferans gibi uzaktan iletiřim tenolojileri aracılıęıyla danıřa sunulan ruh saęlıęı hizmetleri olarak tanımlanmıřtır (Mallen ve Vogen, 2005, p.764). 2014 yılında, 2020 yılına kadar saęlık hizmetlerinin %25 ila %50'sinin evrimii olarak yrtleceęi ngrlmřtr (Weinstein vd., 2014). Normal řartlar iin yapılan bu ngr, pandemi sreci ile birlikte deęiřiklięe uęramıřtır. COVID-19 salgınından nce, ruh saęlıęı uzmanlarının %36'sı evrimii hizmetleri kullanırken bu oran pandemiden sonra hızla artmıřtır; Mayıs 2020'de yapılan bir alıřmada, ankete katılan ruh saęlıęı uzmanlarının %85'i, evrimii hizmetlerin danıřanlarının drtte nden fazlası tarafından kullanıldığını belirtmiřtir (APA, 2020). Gncel kořullar, internet tabanlı uygulamalara ynelik tutumları deęiřtirmekte ve konunun farklı baęlamalarda incelenmesi elzem hale gelmektedir.

evrimii danıřma literatrnde, evrimii psikolojik danıřmanlıęın tarihesi ve geliřimi (Skinner ve Zack, 2004), etik konular (Childress, 2000; McVeigh ve Heward-Belle, 2020; Stoll vd., 2020), evrimii danıřmanların eęitimi ve denetimi (Mallen vd., 2005), ruh saęlıęı uzmanlarının deneyim ve tutumları (Barker ve Barker, 2022; Barnett vd., 2021; Kupczynski vd., 2017), danıřanların tutumları (Amos vd., 2020; Rochlen vd., 2004a; Young, 2005), depresyon, anksiyete veya travma sonrası stres bozukluęu gibi belirli sorun alanlarında evrimii psikolojik danıřmanlıęın uygulanması (Andersson vd., 2014; Andrews vd., 2018; Berryhill vd., 2019; Kuester vd., 2016), yz yze danıřmanlık ile karřılařtırılması (Barak vd., 2008; Drago vd., 2016; bkz. So vd., 2013), avantaj ve dezavantajları gibi konular ele alınmıřtır. Bu alıřmada ise, kiřisel ve akademik yařamlarında teknolojiyi ok fazla kullanan (Jones vd., 2007), evrimii psikolojik danıřma iin uygun bir hedef kitlesi olan niversite ęrencilerinin evrimii psikolojik danıřmaya dair bilgi dzeylerinin, deneyimlerinin, grřlerinin, tercihlerinin ve evrimii psikolojik danıřmanlıęın geliřtirilmesine ynelik nerilerinin incelenmesi amalanmıřtır.

Bu arařtırmada, COVID-19'un evrimii psikolojik danıřmanlıęın yaygınlıęı ve uygulamaları zerindeki etkisi gz nnde bulundurulurken, fenomenolojik arařtırma deseninin kullanıldığını iki alıřma yrtlmřtr. Her iki alıřma da aynı ama ve ynteme sahiptir. Ancak veriler alıřma 1'de pandemi ncesinde, alıřma 2'de ise pandemi sırasında toplanmıřtır. alıřma 1'e altısı kadın, drd erkek olmak zere on; alıřma 2'ye altısı kadın ve beři erkek olmak zere 11 niversite ęrencisi katılmıřtır. alıřma 1 katılımcılarının yařları 19 ile 25 arasında ( $M = 22.50$ ,  $SD = 2.51$ ); alıřma 2 katılımcılarının yařları 19 ile 27 arasında deęiřmektedir ( $M = 22.18$ ,  $SD = 2.48$ ).

Veriler, arařtırmacılar tarafından geliřtirilen yarı yapılandırılmıř evrim İi Danıřmanlık Grřme Formu ile toplanmıřtır. Formun ilk blmnde, demografik bilgilere (cinsiyet, yař gibi), ikinci blmnde ise ęrencilerin evrimii danıřmanlık ile ilgili bilgi dzeylerine, grřlerine, deneyimlerine, tercihlerine ve nerilerine iliřkin sorular yer almaktadır. Etik kurul onayı alındıktan sonra katılımcılar, alıřmaya e-posta aracılıęıyla davet edilmiřtir. Gnll katılımcılar grřme ncesinde onam formlarını imzalamıřlardır. alıřma 1'deki grřmeler pandemi ncesinde yz yze; alıřma 2'deki

görüşmeler ise aynı görüşme formu kullanılarak pandemi devam ederken çevrimiçi olarak gerçekleştirilmiştir. Ses kaydı alınan görüşmeler kelimesi kelimesine yazıya aktarılmıştır. Temalar önceki çalışma bulguları ve araştırma soruları dikkate alınarak oluşturulduğu için betimsel analiz yöntemi kullanılmıştır (Yıldırım ve Şimşek, 2011). İç güvenilirliği artırmak için iki araştırmacı verileri bağımsız olarak kodlamıştır (Lecompte ve Goetz, 1982). Daha sonra kodlamaların tutarlılığı kontrol edilmiş ve birbirleriyle büyük ölçüde uyumlu oldukları görülmüştür. Son olarak, ortak kodlar ve temalar netleştirilmiş ve bu temaları en iyi ifade eden alıntılar seçilmiş ve bulgular raporlanmıştır.

Bilgi ve deneyim düzeylerini anlamak için katılımcılara çevrimiçi psikolojik danışmanlığın ne olduğu, hakkında ne bildikleri ve geçmiş deneyimleri, ihtiyaçları olması durumunda çevrimiçi danışma alıp almayacakları sorulmuştur. Çalışma 1 grubundaki katılımcıların yarısının sınırlı bilgiye sahip olduğu ve hiçbirinin çevrimiçi psikolojik danışma almadığı; Çalışma 2 grubundaki katılımcıların yarısından fazlasının daha fazla bilgiye sahip olduğu, dört katılımcının çevrimiçi psikolojik danışma aldığı bulunmuştur. Ayrıca Çalışma 1’de sekiz, Çalışma 2’de dokuz katılımcı ihtiyaçları olması halinde çevrimiçi danışma alabileceğini belirtmiştir.

Her iki çalışmada da katılımcılar çevrimiçi psikolojik danışmanlığın avantajlarını, daha düşük maliyet, artan erişilebilirlik, zaman ve enerjiden tasarruf, esnek zamanlama, kendini daha kolay açabilme, rahatlık hissi, anonimlik, coğrafi sınırları aşabilme ve gizlilik olarak belirtirken; dezavantajlarını, yüz yüze iletişim eksikliği, güvene dayalı ilişki kurmada zorluk, sözel olmayan iletişimde zorluk, yakınlığın azalması, özgünlüğün azalması, teknoloji sorunları, gizlilik ve mahremiyetin ihlali olarak belirtmişlerdir. Katılımcılara çevrimiçi psikolojik danışmanlık için kullanılabilecek altı format opsiyonu verilmiş ve bunları en çok tercih ettiklerinden en az tercih ettiklerine doğru sıralamaları istenmiştir. Çalışma 1 katılımcılarının altısı videokonferansı, ikisi telefon görüşmesini ve bir tanesi de canlı sohbeti ilk tercihi olarak belirtirken, yedisi e-postayı, ikisi telefon mesajını, bir tanesi de videokonferansı son tercihi olarak belirtmiştir. Çalışma 2’deki 11 katılımcının tamamının ilk tercihi videokonferans olurken son tercihleri için dokuzu e-postayı, biri telefon mesajını, biri de telefon görüşmesini belirtmiştir. Katılımcılar format olarak en çok eş zamanlı görüntü ve sesin iletilebildiği yüz yüze görüşmeye en yakın videokonferans yöntemini tercih ederken en az yazılı seçenekler olan e-posta ve telefondan mesajı tercih etmişlerdir. Katılımcılara ayrıca yazılı mesajlarda emojiğin beden dili ve yüz ifadelerinin yerini ne ölçüde karşılayabileceği sorulmuştur. 1. çalışmada dokuz, 2. çalışmada ise 7 katılımcı emojiğin vücut dili ve yüz ifadelerinin yerini alamayacağını ancak bazı emojiğin sınırlı ölçüde olsa da değerli olduğunu belirtmişlerdir.

Konuya göre katılımcıların çevrimiçi veya yüz yüze psikolojik danışma alma tercihlerini belirlemek için katılımcılara üniversite öğrencilerinin yardım talep edebilecekleri bir konu listesi verilmiştir. Her konuyu 1 kesinlikle çevrimiçi danışmanlık tercih ederim ile 5 kesinlikle yüzyüze psikolojik danışma tercih ederim arasında değişen bir skalada değerlendirilmeleri istenmiştir. Ailevi sorunlar, cinsel taciz, madde bağımlılığı gibi sorun alanlarında yüz yüze danışma tercih edilirken, kariyer planlaması, akademik problemler,

yurt/ev arkadaşıyla sorunlar gibi konularda çevrimiçi psikolojik danışmanlığın da tercih edilebileceği görülmektedir.

Son olarak çevrimiçi psikolojik danışmanlığın üniversite psikolojik danışma merkezlerinde geliştirilmesi için önerileri sorulmuştur. Katılımcılar çevrimiçi danışmanlığın olumlu sonuçlarını da içeren duyuruların yapılmasını, öğrencilere uygun farklı format seçeneklerinin sunulmasını, öğrencilerin geri bildirimlerini alabilecekleri pilot uygulamalar yapılmasını ve sistemin gelen geri bildirimler doğrultusunda güncellenmesini, bu konuya hakim daha fazla uzmanın görevlendirilmesini, öğrencileri bekletmek yerine sistemsel olarak sorun alanına göre sınıflandırıp, doğru uzmana yönlendirilmesinin daha kısa sürede yapılmasını, acil vakaların önceliklendirilmesini önermişlerdir.

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| Authors                | Contact                                                                  |
|------------------------|--------------------------------------------------------------------------|
| Funda Barutçu Yıldırım | Middle East Technical University, Türkiye<br>E-mail: barutcu@metu.edu.tr |
| Selin Onaylı           | TED University, Türkiye<br>E-mail: selin.onayli@tedu.edu.tr              |
| Nureda Taşkesen        | Norwegian University, Norway<br>E-mail: nureda@metu.edu.tr               |

# Management of Artistic Practice Pedagogies of Interdisciplinary Art Students with Critical Analysis Learning Method\*

Önder Yağmur\*\*

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**Abstract:** This study aims to ensure that graduate students from plastic arts disciplines (sculpture, graphics, painting, ceramics) can develop their critical analysis skills through their jewelry design practices from the perspective of their own art disciplines. A group of 25 students participated in the study, which was planned for three hours a day, one day a week, for a total of 28 weeks during the autumn and spring semesters of 2021-2022. In the study, we conducted interviews with designers, artists, and academicians about their production processes. The participants in the study were given the opportunity to experience jewelry design projects in a digital environment by teaching and using the "Nomad Sculpt" software. The participants presented their own jewelry design projects with the criticism system developed by Feldman which consists of description, formal analysis, interpretation and judgement stages, and dialogues in which learning processes questioned with this research program were also included in the evaluation process. This process was evaluated with an analytical approach by a committee of faculty members involved in the project. The study aimed to explore and reveal the efficiency of the interdisciplinary working processes of the participating students across all artistic production stages, the awareness of the principles and elements of art, and the connections between artistic production and theoretical knowledge. Some of the results obtained from the study were that the participants who expected to improve their design skills met these expectations, and that the participants in the study were able to produce discourse on their artistic productions with the attainment of interdisciplinary work.

**Keywords:** Art, Design, Art Education, Interdisciplinary Art, Jewelry Design

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\*\*  Corresponding Author's, Management of Artistic Practice Pedagogies of Interdisciplinary Art Students With Critical Analysis Learning Method, Atatürk University, Fine Arts Faculty, Türkiye, oyagmur@atauni.edu.tr.

## Introduction

The general implementation of art education in Turkey is based on teaching basic principles through workshop lessons and practice. Art practices are taught with the paradigm of each discipline (Öztütüncü, 2016), and the theoretical background of art is provided by disciplines such as aesthetics and art history (Self, 2019). Students who graduate from arts education ought to have mastered and adopted these two components; moreover, they should also be able to demonstrate the integrated state of these two components in their art production processes. In addition, candidates studying in the art discipline must be prepared to speak and write about art, as well as art production practices. There are certain causes in the process of artistic production from idea (Özkök, 2005) to development. As a requirement of this, those who receive arts education should present a discourse regarding certain artistic outputs. Terry Barrett (2020) revealed in his work titled "CRITS: A Student Manual" that students across the globe have trouble creating discourses on art that involve written or spoken contributions. Therefore, it becomes necessary to examine in detail the approaches that can offer a solution to this issue.

Those who take a formalist approach to the work of art (Anderson, 1986) strive for the ideal relationship between the formal qualities constituted by the forms of the work of art in a vacuum rather than contextualization. The analysis to be made through this approach creates a limitation in itself by focusing on formal relations considering there are underlying causes in the origin or formation of the work of art. These causes, internalized by the artist, have been personalized and emerged as plastic forms in the work of art.

At the root of art, when the concept of formal relations is taken into account (Rosenberg, 1966), there are psychological, socio-economic, historical, cultural, etc. instruments. It is by its very nature that art is not neutral -to a certain degree- as the processes of artistic production and analysis clarify the values of aesthetic form, and for this reason, art (criticism, analysis, reading) has become a social act. It is a social act to communicate with the work of art by producing discourse about the form from a critical perspective. Speaking and writing in order to strengthen or clarify the formal values of the artistic output can be defined as social. Although some artistic works are interpreted with more specific approaches for reasons originating from their structure, this does not negate the fact that they have a social practice (Ferraello, 2019), even if they have formal or contextual foci.

The quantitative research method (Thurber, 2004), which has been used since the nineteenth century (Hitchcock & Hughes, 1989), was used to quantify emotional or subjective qualitative factors through observation and to observe patterns. The information obtained from the data was utilized to make future-oriented predictions

about the cases. Although it is considered real or scientific knowledge, the quantitative research method is based on the qualitative data it quantifies (Sullivan, 2004).

The humanities (Laverty, 2004) employ qualitative research methods that can be applied to different approaches. Qualitative research methods are interpretative, and therefore ensure that no single point of view is held. They also focus on human beings as a social context along with their behavior, beliefs, and value systems, and try to reveal findings and make inferences that cannot be reached via statistical tools (Strauss & Corbin, 1990). Applied art-based studies in the workshop, where the emphasis is on practical aspects rather than theoretical knowledge, are the component of the semantic, perceptual messages of the formal expressions of the emotional and intellectual approaches of the people who produce in the field of art and their written expression. Contextualization (Sullivan, 2005), theorization and semanticization of artistic works with creative and intellectual aspects constitute the basis of workshop practices. Therefore, the richer the background database of artistic works, the stronger the artistic processes will be.

Criticism practices aimed at the proper construction of the relational arrangements between the dynamics of artistic production such as material, form, context and meaning teach the students in the workshop to criticize each other. Data regarding their approaches to problems, preferences and knowledge is thereby questioned. The involvement of students in this process is necessary for them to develop critical thinking skills, the ability to think from different perspectives, and an artistic dialectic in their artistic production processes (Subramaniam et al., 2016). Since artistic production and criticism practices will provide feedback, experience, knowledge, and skills, they will contribute to students' future and professional fields of study.

In basic terms, art criticism is the process of making a systematic (Geahigan, 1983) judgement and discourse through an objective examination of a work of art. This process endeavors to inform and educate society by providing insights on the meaning of artistic outputs. The cultural and social values presented by the work of art develop the individual's understanding of art through criticism. Although art criticism continues to function within philosophical terminology, in practice it is a subjective artistic discourse that matures on the linguistic or semantic discoveries of artistic productions.

In addition to its primary purpose of producing written and oral discussion (Greer, 1984) and discourse on the meaning of the artwork, art criticism also fulfills related purposes by raising the perception, exploration, and identification of the visual worlds of individuals, their sense of meaning and value, feelings and thoughts towards individuals and other beings as components of society, and the level of human values. Moreover, when the elements of art criticism (description, analysis, interpretation, judgment) are integrated with aesthetic elements (aesthetic subject, aesthetic object, aesthetic

experience, aesthetic imagination, aesthetic emotion, aesthetic pleasure, etc.), it develops aesthetic experience, which is defined as either completed or in-progress.

In workshop-based art education where artistic critical perspective is included (Barrett, 1988), descriptive and interpretive activities should be part of the process in order to increase students' ability to think deeply about artistic practices and to produce reasoned discourse about them. This has the capability of providing students with more guidance from artistic production to critical writing and professional competence. As an essential component of artistic development, art criticism evolves from the abstract to the concrete through analysis, examination, evaluation, and interpretation. Art criticism has a common methodology that progresses step by step and forms the whole by constructing information one on top of the other. In art practice, one observes, analyzes, interprets, and evaluates. The work of art is defined and analyzed from its sensory features (line, color, form, texture, etc.) (Feldman, 1982) to its formal features (balance, rhythm, etc.), interpreted as internal and external meaning, and then completed by making judgments. Feldman's method of art criticism, which consists of steps of description, formal analysis, interpretation, and judgment, is effective in establishing the theoretical and practical connections of art in a reliable manner during the stages of artistic education.

### **Feldman's Critical Learning System**

Criticism has an important place in art education. The experience of individuals in art production is related to their internalization of the basic principles and elements of art. Inseparable from art and art practices (Feldman, 2001) is conversation and discussion on the topic. Evaluating (Ecker & Kaelin, 1978) and criticizing the work of art enables what has been learned in the process of experience to be reused as action research in subsequent studies (Mace, 2006). The process, which starts with visual data and proceeds to inferences of meaning, provides the students with a visual dialectic in artistic productions (Bennetts, 2006), and allows for the development of artistic productions by conducting research in various directions. Feldman presents this dialectic of art production with an inductive system. This system, which offers an objective approach, is planned to define, and identify the visible characteristics of the artwork, to analyze the visual characteristics of the artwork by creating visual evidence (Esser, 2006), to explain the artwork, and to subject it to judgment and evaluation. As artistic productions made in accordance with this plan are more consciously crafted by their makers and when they can talk about them with the same awareness, artistic acquisitions will be strengthened. Discussing art is a crucial step in the development of critical experience as well as the interpretation of artistic creation because explaining the artistic work reveals both its meaning(s) and its relationship with life and what it encompasses, such as human beings, nature, etc. (Feldman, 1982). The inductive critical learning method consists of 1) description, 2) analysis, 3) interpretation, 4) judgment.



## **Description**

Description, which is the first stage of the critical process, is to make observations on the visual/physical appearance of art and artistic productions. In this observation process, visual data should be created and presented with an objective approach rather than including personal opinions and inferences. For instance, information such as what is written in the text of the work, who is or are the artist(s) of the work, where and when the artistic production was made, defining the compositional principles of the work (such as line, movement, space, light, texture, rhythm, balance, contrast, form, etc.), as well as the technical characteristics of the artistic output (material, construction technique, etc.) (Jones, 2008) explaining the subject and searching for recognizable visual references should be obtained from the artistic production in the description stage.

## **Formal analysis**

Analysis, which is the second stage of the critical process, provides information about the organization of artistic production. The emphasis here is on the analysis of the basic principles of art (rhythm, emphasis, movement, balance, etc.) and compositional elements (line, form, color, texture, etc.) and the message they convey. At this stage, with artistic information, the spectator discovers the relationality between the basic principles of art and the organization of compositional elements. This process can be addressed in two aspects: formal and content. Formal analysis explains the relationship between the data collected from the work of art at the description stage. Content analysis is the association of implicit meanings hidden in the work of art with visual elements. With the help of both formal and content analysis, the observer can offer an interpretive approach to the purpose of producing an artwork (Duqa, 2021).

## **Interpretation**

Through interpretation, which is the third stage of the critical process, the observer both states what the artist expresses for the art spectator and reveals artistic discourse with the qualities that express meaning and emotion conveyed by the work of art. This interpretation process, which is shaped as a search for meaning in terms of form and content, is managed by the information obtained from the stages of description and formal analysis. Hypotheses are put forward regarding the work and the emotion and thought system reflected by the artist in his/her artistic work are interpreted, thus ensuring a certain level of understanding and making sense of the work. In this way, the meaning of the artistic work associated with questions and approaches that stimulate memory and experiences is sharpened (Anderson & Milbrandt, 2005).

## **Judgment**

The fourth stage of Feldman's critical learning process (Alsaggar & Tubaishat, 2021) is to make judgments on the work of art. While making judgments on artistic practices, the

perceiver makes subjective inferences. The aesthetic dimension of the work is evaluated in relation to other works in its class. The judgment process of the artistic work is the result of the data obtained from the previous stages (description, formal analysis, and interpretation). As the most challenging stage of the critical learning process, artistic judgment offers inferences about whether the artwork is successful or not (Feldman, 1994). The inferences presented with the support of aesthetic theories, cultural tendencies, intellectual knowledge, or indicators are the answers to a set of questions. The given answers are indicators that can help others evaluate the work in question. Feldman's four-stage critical learning system places more emphasis on subjective inferences in evaluating artistic works in terms of form and content. These subjective judgments support artistic education and production by forming stronger arguments in aesthetic, social and communal terms.

### **Applied Art Education in the Workshop**

Plastic arts education is a reflective process of transforming our experiences into an artistic whole in one aspect, raising our level of artistic learning to a higher level and adding continuous development. This reflective process is a formal and critical combination of assumptions (Weber, 2003), prejudices, perspectives on phenomena, and events in artistic practices (Hoffman et al., 2003). In the formation of this type of artistic education, the necessity of the meaning-context relationship in artistic workshop practices, that is, the accurate constitution of the action-reflection-application cycle defined as praxis (practice). The linguistic use of the term praxis (practice) dates back to the Aristotelian period. The Aristotelian term "praxis" connotes action towards a planned goal, while the Louis Althusserian term "praxis" refers to the unity of the theoretical-practical relationship, and the Karl Marxian term "praxis" refers to the unity of theory and practical knowledge, the effectiveness of the subject-object relationship. In artistic workshop-based practices, praxis is the presentation of formal and conceptual productions in the integrity of visual principles, innovation, expression, aesthetics, and critical competence (Marshall, 2010). Interpretation, which is an integral part of the literary and artistic methods of the formal production practices required in the workshop, is the stage where the context of the art production process is created through observation, description, and analysis.

The basic literary necessity of artistic practice is asking the relevant research questions. Does artistic work have a relationship with contemporary examples? How do they relate? Does it have antecedents that can be related? How is it similar or dissimilar to them? Candidates in the applied artistic education workshop should reveal the components of literary and creative production through the integration of both theory and practice. Art production involves a process in which the stages of influence, creation, and analysis are integrated with each other. People in the artistic production process (artists, students, etc.) show their reactions in an artistic way with changed and removed elements in their

works based on their observations. The formal arrangements carried out in this creative process signify making criticisms and developing discourse through art. Moreover, due to the nature of art, creative production and critical reaction cannot be considered separately as they are mutually complementary. Creative production is inherently critical and critical reflection is intrinsically creative, and the relationship between them is symbiotic (Marshall, 2010). Art feeds criticism and criticism feeds art. There are discursive approaches (meta-theories/criticism) that are used at various levels to describe, interpret, and evaluate the process of artistic creation and the object of art. These approaches have a systematic structure for defining, analyzing and evaluating the principles and methods of the work of art and examining its theoretical foundations, purpose and context. This systematic structure does not have a hierarchical order, but rather an order formed by the necessity of art and discourse. Thus, the whole process of artistic creation (interaction, design, planning, implementation, interpretation, judgment, etc.) is included in the evaluation. Workshop-based art education is purposefully grounded in a cyclical process of active aesthetic practice consisting of observation, planning, reflection, and mixed strategies that consist of identifying the data underlying this artistic practice, as well as analyzing the connections between the artistic production process and the data. Artistic education is thus enriched both technically and linguistically.

### **Applied Art Education Research Methodology in the Workshop**

Workshop-based art education carried out in institutions of higher education is transferred predominantly through practical implementation. In this type of art education, the concern lies in the plastic language of artistic practices and their interpretation. In workshop-based art education (Adler, 1979), students (Madge & Weinberger, 1973) actualize their artistic productions in terms of both technique and material for professional art life. In this process, the complexity of learning (Cornock, 1984), the student profile in relation to faith and culture and how this affects artistic creative production, the effect of the relationship between student, social environment, and the curriculum on art education (Dinham, 1987) cannot be overlooked.

Critics' approaches and methodologies for examining works of art (Androutsos, 2019) should be learned by the participants (artist candidate students) in workshop-based art education. These review methodologies also contribute to the development of students' artistic practices. The theoretical/practical harmony between applied art education and artistic criticism (Medola, 2021) will be the most important factor in achieving the holistic goal of art education.

## Method

### Research model

This study aims to ensure that graduate students from plastic arts disciplines (sculpture, graphics, painting, ceramics) can develop their critical analysis skills through their jewelry design practices from the perspective of their own art disciplines. In this research, in order to analyze the necessity of the relationship between applied art education and artistic criticism, an analytical approach was used, which is defined as evaluating a subject by dividing it into parts by means of the deductive method. In this study, which is an experimental research design (Denzin & Lincoln, 1998) (Creswell, 2011), it may reveal a one-time situation (Gürbüz & Şahin, 2018) that tries to handle and understand the subjective point of view (Karataş, 2015) of the participants through experience and interpretation. It is thought that analytical research is more appropriate for medium and small sample groups (Aydoğdu et al., 2017).

### Study group

The study group consisted of 25 postgraduate students from the field of plastic arts disciplines (sculpture, graphics, painting, ceramics), who are assumed to have received the education curriculum in which the basic components of art are given. The sample group was selected using the purposive sampling method (Fraenkel & Wallen, 2009), which is widely used in qualitative research to identify and select cases rich in information for the most effective use of limited resources (Yağar & Dökme, 2018).

### Data collection process

In the fall and spring semesters of 2021-2022, 25 students participated in the study, which was planned to be three hours a day, one day a week, for a total of 28 weeks. At the beginning of the study programme, contemporary jewellery designer Burcu Büyükcünal shared with the participants the socio-cultural history of jewellery, the semantics of the materials used, the importance of research, empathy, project development and testing stages in jewellery design processes, the invited jewellery designer shared her experiences with the participants, and the invited designer shared her own design processes with the participants (Picture 1).

**Picture 1.**

*Jewellery designer Burcu Büyüknallın jewellery designs*



Other invited artists and academicians who were continuing their studies in the field of plastic arts shared the formation processes of their artistic practices with the participants within the scope of plastic elements and composition principles. The participants in the study were given the opportunity to experience their jewellery design works in the digital environment by teaching and using the "Nomad Sculpt" digital programme, which has an easier and more practical user interface and does not create time and space restrictions for the participants to realise their designs by using a single version on mobile phones, tablets and computers. The participants in the study presented their own jewelry design practices with the criticism system developed by Feldman, which consists of the aforementioned description, formal analysis, interpretation and judgment stages, and dialogues in which learning processes were questioned with this research program were also included in the evaluation process.

### Data analysis

The committee consisting of faculty members who have taken part in prestigious artistic works, competitions and applications organised by both private and public institutions in Turkey and abroad, and who have gained academic competencies as well as artistic production, has evaluated the process with an analytical approach.

### Credibility and Ethics

Within the scope of credibility in qualitative research (Lincoln & Guba, 1985), the number of participants, their characteristics, their selection, data collection and analysis (Creswell & Miller, 2000) are explained. Obtaining, analyzing and evaluating the opinions of the participants (Creswell, 2013) was carried out in accordance with ethical standards and research procedures. In the Denzin and Lincoln (2011) research, the cultural diversity of the participants is seen as a contributing factor in the evaluation of the data obtained by the researchers in this study. Ethical principles were treated sensitively at every stage of the research and the participants' time (Hatch, 2002) and their efforts were seen as important ethical behaviors, especially for the project..

## Findings

### Findings obtained as a result of the evaluation

The artistic production process of the research determined for the students, the jewelry works that are created after discussing the basic principles and elements of art through descriptive and interpretive examples, and the critical analysis presentations prepared with Feldman's four-stage model, which was introduced to the students during the research process, were evaluated by a five-person educator committee. **Participant (P6) made an explanation as follows: "I gave importance to the relationship between material and form both in jewellery (picture 2) applications and in their expressions, considering that the material and form used constitute the content of a work".** In the aspect of description and formal analysis, the students who took part in the research conceptualized the works in terms of subject and subject material, and in this process, they showed that they interacted with artistic productions by including their own artistic language in the discourse.



**Picture 2.**

*Design made by the participant (P6)*



It was found that students internalized Feldman's four-dimensional critical method in a remarkable way. They were stronger in the dimensions of description and formal analysis than in the dimensions of interpretation and judgment. **Participant (P19) argued for experiencing the physical contact of the object in their work (picture 3) by stating that "a strong research should be the basis of an artistic practice".** In response to these arguments, they questioned the interaction of geometry with the human body as a space. As a result of the evaluations, the committee stated that the students who were successful in the critical analysis stage were also successful in the workshop practices.



**Picture 3.**

*Design made by the participant (P19)*



Participant (P4) stated that **"colour, shape, composition and textures are important in artistic production"** (picture 4). Students presented clear, detailed, and meaningful information to the committee in the dimension of description. Participant (12) used the expression **"visual elements and principles are fundamental in artistic production"** (picture 5). In the formal analysis dimension, they were able to explore the relationship between design principles and elements. Participant (P22) used the expression **"context is important in artistic production"**. In the interpretation dimension, it was found that students mostly took an approach to establishing cultural hypotheses. Participant (P15) used the expression **"the relationship established with artistic production is important"** (picture 6). And in the judgment dimension, it was found that students implemented aesthetic and emotional approaches.

Picture 4-5-6.

*Design made by the participants (P4-P12-P15)*

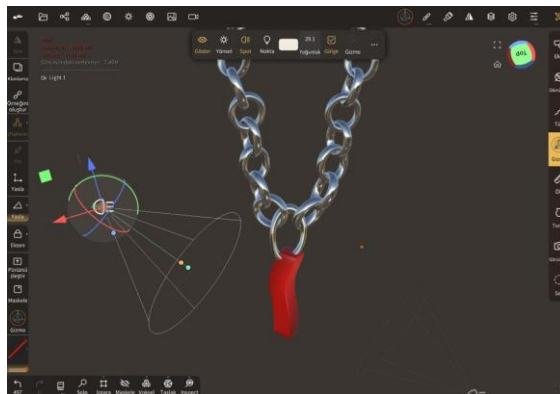


The interdisciplinary students who took part in the research on the interpretation and judgment stages of Feldman's four-stage model put forward a discourse by associating the idea of the author with the use of design principles in the evaluation of the produced jewelry works. The evaluation committee asked the participating students to make judgments in the socio-cultural context of the meaning associated with the design principles of the jewelry works. **Participant (P2) stated that "working with people from different cultures in artistic production has been instructive and motivating"**. It was evaluated by the committee that the judgment discourses were shaped by interactions during the production stages of the works in the workshop and developed through in-workshop interviews and activities during the research.

The participants in the research were asked about the reason for their participation in this education programme and their expectations since they were from different disciplines. **In one of the answers received, the participant (P20) used the expression "I hope and want to improve my design skills"**. **Participant (P5) used the expression "my expectations in the design process and design development processes"**. The participants stated that the opportunity offered to carry out studies in a digital programme (Nomad Sculpt) (picture 7), which has an easier and more practical user interface and does not create time and space restrictions for the participants to realise their designs by using a single version on mobile phones, tablets and computers, is above expectations.

**Picture 7.**

*Design made by the participant (P5)*



Participants were asked to evaluate the education program they attended; in the answers received, it was found that interdisciplinary work was considered an achievement and that both the advantages and the disadvantages of using a digital design program had been encountered. Participants explained how interdisciplinary work gave them self-confidence, contributed to the development of socialization attitudes, and offered the opportunity to quickly identify the problems of their artistic practices and develop solutions by using digital programs. The participants stated that designing a digital programme provides advantages. As one of the participants (P11) stated, the digital programme, which **"visualises the design idea and helps to see mistakes in advance and intervene faster"**, offered an advantage by allowing jewellery designs to be seen from different angles, different colours and different dimensions. A few participants, for example (P8), drew attention to their lack of technological experience by saying **"I think I am not ready to design jewellery using a digital programme without having enough technological knowledge and experience, although it provides many opportunities"**.

**Discussion and Conclusion**

The aim of this research was to ensure that graduate students in the field of plastic arts disciplines (sculpture, graphics, painting, ceramics) can develop their level of critical analysis through jewelry design practices they develop with the acquisition of their own art disciplines. In this study, which creates an opportunity for students to produce their artistic productions in more conscious processes in line with the relationship between artistic production and artistic analysis, it was seen that graduate students from the field of plastic arts disciplines (sculpture, graphics, ceramics, painting) contributed positively to the critical analysis of the jewellery design applications they put forward with their own art disciplines.

Students should follow national and international artists and artwork while producing and making sense of art. This situation will contribute positively to students gaining artistic production skills in the art education process. K peli (2014) stated in his research

that the examination of various artists and their works contributes to the candidates in the art education process to put forward different perspectives and original artistic compositions, Parkins (1994) stated that the examination of artworks encourages candidates in art education to naturally stimulate their thinking activities, Broome et al., (2018) stated that the examination of artists and artworks provides thinking strategies by using art criticism in their research, and this is in line with our study about the importance of examining artists and their works to create a supportive platform in the artistic production process.

In the university phase of art education, curricula mainly include practice. However, they lack course content that can produce art criticism or artistic discourse. It is thought that this deficiency should be tried to be overcome with various in-class activities and this will contribute to the development of students' artistic critical thinking skills. Although attempts must be made to overcome this deficiency through various in-class activities, it is debatable to what extent this will contribute to the development of students' artistic critical thinking skills. In his research, Alashari (2021) stated that curricula that can produce art criticism and artistic discourse contribute to the development of students' artistic production and discourse, which is in line with the result presented in our study. Ferraello (2019) stated in his study that in-class activities, interviews, discussions, workshops contribute to the decision-making and implementation processes of the participants in their artistic productions and draw a parallel with the importance of in-class activities presented in our study.

Interdisciplinary cooperation in artistic production processes has a significant impact on learning, and will provide participants with a more creative, broader perspective on artistic practices. Androutsos and Brinia (2019) stated in their study that interdisciplinarity provides more innovative output in artistic production methodologies, Blackwell et al., (2009) stated that interdisciplinary studies encourage critical thinking in their studies, and our study is in parallel with the creative and stimulating contribution of interdisciplinarity in the artistic production process.

Cultural diversity will provide a positive gain in artistic production processes. The participants' feeding on the data of different cultures in their artistic productions will help them reach original and creative outputs. Chalmers (1996) stated in his research that cultural diversity in interdisciplinary art education has an effect on critical thinking and creativity in art production, Acer (2012) stated in his research that students from different cultures produce creative and original works of art with different art understandings and techniques, Keuchel (2016) stated in his research that interdisciplinary art education contributes to the development of an original and creative art language with cultural differences, and supports our research that the participants construct and interpret their artistic production and critical processes with cultural hypotheses.

Artistic criticism, asking questions about the work of art and making artistic inquiries, collecting information about the work of art and turning it into data to evaluate the work of art, interpreting abstract forms of artistic expression and putting forward analyses that

will create data, comparing all these gains with different artistic interpretations, and readings will provide students with important achievements in both artistic production and artwork analysis. In his study, Jones (2008) states that meaningful relationships between the object-object relationships of the participants in artistic production processes are formed through a research process and provides parallel indications with our research that the character of artistic production is shaped by both production and analysis.

Giving students an artistic critical approach at the sketching stage of artistic production will also encourage them to take risks in artistic production practices. Such approaches will provide students with more artistic knowledge and equipment, improve their perceptual skills, and support them with the power of perception and awareness to evaluate their environment and the phenomena in this environment with a different visual expression. Bernabei (2017) stated in his study that they will offer innovative artistic outputs by being in more communication and interaction with the environment in artistic and jewellery design processes and supports the relationship of the visual perception and awareness power revealed in our study with the environment.

Supporting artistic production with technological possibilities is important both in terms of the age of requirement and the contribution it offers. Using a 3D programme not only contributes to the learning process, but also allow the deficiencies to be seen and intervened in advance during the production phase and prototypes to be seen before production. Medola et al., (2021) stated that the use of 3D programmes in design processes is positive for the learning and production processes of the participants, supporting the importance of using digital platforms in artistic production revealed in our study.

It has been observed that artistic criticism, which is thought to have an important effect on the development of creative approaches in artistic productions, provides an important gain in art education. Lampert (2006) stated that artistic production and artistic criticism in art education show positive parallels with each other, Butler et al., (2017) stated that the artistic critical approach to be acquired in art education is effective in solving problems, and this supports the issue that artistic criticism positively shapes artistic production in the art education process.

Since the study is experimental research and a one-time case study, it is open to improvement. The weakness of the study is how it will yield results in the long term. The number of participants in the study may be a limitation for generalising the findings. The weakness of the research is how the study will yield results with a larger participant group. Obtaining a comprehensive view of the subject by collecting data through observation, interview-like dialogues and artistic practices is the strength of the study. The study being interdisciplinary and exploring the learning processes of the participants with another discipline that they are not familiar with is a strength of the research.

This research is valuable in terms of reflecting the utilitarian aspect of the orientation process of the interdisciplinary working system in the transition of the individual to working life after school education, and researchers can be recommended to conduct research on these issues in multiple disciplines and with different social compositions.

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## Genişletilmiş Türkçe Özet

Bu araştırma plastik sanatlar disiplinleri (heykel, grafik, resim, seramik) alanından lisansüstü öğrencinin kendi sanat disiplinleri bakış açısıyla ortaya koydukları takı tasarım uygulamaları üzerinden eleştirel analiz düzeylerini geliştirebilmelerini amaçlamaktadır. Çalışmada yer alan 25 öğrenci 2021-2022 güz ve bahar yarıyılarında toplam 28 haftada birer gün ve günde 3 saat olmak üzere planlanan eğitime katılmışlardır. Eğitim programında tasarımcı, sanatçı ve akademisyenlerden üretim süreçleriyle ilgili söyleşiler gerçekleştirilmiştir. Çalışmada yer alan katılımcılara “Nomad Sculpt” dijital programı öğretilip kullanılarak takı tasarım çalışmalarını dijital ortamda deneyimleme fırsatı sunulmuştur. Çalışmaya katılan katılımcılar kendi takı tasarım uygulamalarını Feldman tarafından geliştirilmiş betimleme, biçimsel analiz, yorum ve yargı aşamalarından oluşan eleştiri sistemiyle sunmuş, değerlendirme sürecinde bu araştırma programıyla öğrenme süreçlerinin sorgulandığı diyaloglara da yer verilmiş, projede yer alan öğretim üyelerinden oluşan komite tarafından bu süreç analitik yaklaşımla değerlendirilmiştir. Çalışmada tüm sanatsal üretim aşamasında katılımcı öğrencilerin disiplinlerarası çalışma süreçlerinin verimliliğini, sanatın ilkeleri ve öğelerinin farkındalığı ve sanatsal üretimle teorik bilginin bağlantılarını keşfetme ve ortaya koyma amaçlanmaktadır. Tasarım becerilerinin geliştirilmesi beklentisi olan katılımcıların bu beklentilerine karşılık buldukları ve araştırmada yer alan katılımcıların disiplinlerarası çalışma kazanımı edinmeleri ile sanatsal üretimleri üzerine söylem üretebilmeleri çalışmadan elde edilen sonuçlardan bazılarıdır.

### Atölye Uygulamalı Sanat Eğitimi Araştırma Metodolojisi

Yüksek öğrenim kurumlarında yürütülen atölye uygulamalı sanat eğitimi pratik uygulamanın ağırlıkta olduğu bir yaklaşımla verilmektedir. Bu sanat eğitimi sürecinde sanatsal uygulamaların plastik dili ve onun anlamlandırılması kaygısı yatmaktadır. Bu araştırma plastik sanatlar disiplinleri (heykel, grafik, resim, seramik) alanından lisansüstü öğrencinin kendi sanat disiplinleri bakış açısıyla ortaya koydukları takı tasarım uygulamaları üzerinden eleştirel analiz düzeylerini geliştirebilmelerini amaçlamaktadır. Çalışmada yer alan 25 öğrenci 2021-2022 güz ve bahar yarıyılarında toplam 28 haftada birer gün ve günde 3 saat olmak üzere planlanan eğitime katılmışlardır. Eğitim programında tasarımcı, sanatçı ve akademisyenlerden üretim süreçleriyle ilgili söyleşiler gerçekleştirilmiştir. Çalışmada yer alan katılımcılara “Nomad Sculpt” dijital programı öğretilip kullanılarak takı tasarım çalışmalarını dijital ortamda deneyimleme fırsatı sunulmuştur. Çalışmaya katılan katılımcılar kendi takı tasarım uygulamalarını Feldman tarafından geliştirilmiş betimleme, biçimsel analiz, yorum ve yargı aşamalarından oluşan eleştiri sistemiyle sunmuş, değerlendirme sürecinde bu araştırma programıyla öğrenme süreçlerinin sorgulandığı diyaloglara da yer verilmiş, projede yer alan öğretim üyelerinden oluşan komite tarafından bu süreç analitik yaklaşımla değerlendirilmiştir.

Çalışmada tüm sanatsal üretim aşamasında katılımcı öğrencilerin disiplinlerarası çalışma süreçlerinin verimliliğini, sanatın ilkeleri ve öğelerinin farkındalığı ve sanatsal üretimle teorik bilginin bağlantılarını keşfetme ve ortaya koyma amaçlanmaktadır. Tasarım becerilerinin geliştirilmesi beklentisi olan katılımcıların bu beklentilerine karşılık buldukları ve araştırmada yer alan katılımcıların disiplinlerarası çalışma kazanımı edinmeleri ile sanatsal üretimleri üzerine söylem üretebilmeleri çalışmadan elde edilen sonuçlardan bazılarıdır.

### **Atölye Uygulamalı Sanat Eğitimi Araştırma Metodolojisi**

Yüksek öğrenim kurumlarında yürütülen atölye uygulamalı sanat eğitimi pratik uygulamanın ağırlıkta olduğu bir yaklaşımla verilmektedir. Bu sanat eğitimi sürecinde sanatsal uygulamaların plastik dili ve onun anlamlandırılması kaygısı yatmaktadır. Atölye uygulamalı sanat (Adler, 1979) eğitiminde öğrenciler (Madge ve Weinberger, 1973) sanatsal üretimlerini gerek teknik gerekse malzeme açısından profesyonel sanat yaşamına yönelik olarak gerçekleştirirler. Bu süreçte, atölye uygulamalarının kimi zaman öğrenme (Cornock, 1984) karmaşıklığı, öğrenci profilinin inanç ve kültürle olan ilişkili durumları ve bunun sanatsal yaratıcı üretime nasıl etki ettiği, öğrenci, sosyal ortam, müfredat ilişkisinin sanat eğitimine etkisi (Dinham, 1987) kesinlikle yadsınamaz.

Eleştirmenlerin sanat eserlerini inceleme yaklaşım ve metodolojileri (Androutsos, 2019) atölye uygulamalı sanat eğitimi sürecinde yer alan katılımcılar (sanatçı aday öğrenciler) tarafından öğrenilmesi gerekir. Bu inceleme metodolojileri öğrencilerin sanatsal uygulamalarını geliştirmelerinde de katkı sağlamaktadır. Atölye uygulamalı sanat eğitimi ile sanatsal eleştiri arasındaki teorik/uygulama uyumu (Medola, 2021), sanat eğitiminin bütünsel olarak hedefine ulaşmasında en önemli etken olacaktır.

### **Yöntem**

#### **Araştırma Modeli**

Bu çalışmada atölye uygulamalı sanat eğitimi ile sanatsal eleştiri arasındaki ilişkinin gerekliliğini analiz etmek için, bir konuyu tümdengelim yöntemi ile parçalara ayırarak değerlendirmek olarak tanımlanan analitik yaklaşım kullanılmıştır.

#### **Çalışma grubu**

Çalışma grubu plastik sanatlar disiplinleri (heykel, grafik, resim, seramik) alanından lisansüstü toplam 25 öğrenciden oluşmuştur.

## Verileri Toplama Süreci

Çalışmada yer alan 25 öğrenci 2021-2022 güz ve bahar yarıyıllarında toplam 28 haftada birer gün ve günde 3 saat olmak üzere planlanan eğitime katılmışlardır. Eğitim programının başlangıcında günümüz takı tasarımcısı Burcu Büyükünall tarafından katılımcılarla söyleşi gerçekleştirilerek davetli tasarımcı kendi tasarım süreçlerini katılımcılarla paylaşmıştır. Plastik sanatlar alanında akademik ve sanatsal çalışmalarını sürdüren davetli sanatçı/ akademisyen katılımcılar sanatsal pratiklerinin oluşum süreçlerini plastik öğeler ve kompozisyon ilkeleri kapsamında katılımcılarla paylaşmışlardır. Çalışmada yer alan katılımcılara “Nomad Sculpt” dijital programı öğretilip kullanılarak takı tasarım çalışmalarını dijital ortamda deneyimleme fırsatı sunulmuştur. Çalışmaya katılan katılımcılar kendi takı tasarım uygulamalarını Feldman tarafından geliştirilmiş betimleme, biçimsel analiz, yorum ve yargı aşamalarından oluşan eleştiri sistemiyle sunmuş, değerlendirme sürecinde bu araştırma programıyla öğrenme süreçlerinin sorgulandığı diyaloglara da yer verilmiştir.

## Verilerin Analizi

Projede yer alan öğretim üyelerinden oluşan komite süreci analitik yaklaşımla değerlendirilmiştir.

## İnandırıcılık ve Etik

Nitel araştırmalarda inandırıcılık (Lincoln ve Guba, 1985) kapsamında gereken yapılmış, katılımcıların sayısı, özellikleri, araştırma için seçilmeleri, verilerin toplanma ve analizleri (Creswell ve Miller, 2000) açıklanmıştır. Katılımcılardan görüşlerinin alınması, analizi ve değerlendirilmesi (Creswell, 2013) etik standartlar ve araştırma prosedürlerine uygun olarak yönetilmiştir. Denzin ve Lincoln (2011) araştırmada yer alan katılımcıların kültürel çeşitliliği, bu çalışmada araştırmacılar için elde edilen verileri değerlendirmede katkı noktası olarak görülmektedir. Araştırmanın her aşamasında etik ilkelere duyarlı olunmuş, katılımcıların özellikle projeye ayırdıkları zaman (Hatch, 2002) ve çaba önemli etik davranış sayılmıştır.

## Sonuç

Bu araştırmanın amacı plastik sanatlar disiplinleri (heykel, grafik, resim, seramik) alanında lisansüstü öğrencinin kendi sanat disiplinleri kazanımıyla oluşturdukları takı tasarım uygulamaları üzerinden eleştirel analiz düzeylerini geliştirebilmelerini sağlamaktır. Sanatsal üretimin sanatsal analizle ilişkisi doğrultusunda öğrencilere sanatsal üretimlerini daha bilinçli süreçlerde üretme fırsatı oluşturan bu çalışmada plastik sanatlar disiplinleri (heykel, grafik, seramik, resim) alanından lisansüstü

öğrencinin kendi sanat disiplinleri edinimleriyle ortaya koydukları takı tasarım uygulamaları üzerinden eleştirel analiz gerçekleştirmişlerdir.

## Öneriler

Öğrenciler sanat üretiminde ve sanatı anlamlandırmada ulusal ve uluslararası sanatçı ve sanat eserlerini izlemelidir. Sanat eğitiminin üniversite aşamasında müfredatlar ağırlıklı uygulama içermektedir. Ancak sanat eleştirisi veya sanatsal söylem üretebilecek ders içeriklerinden yoksundur. Bu eksikliğin giderilmesi çeşitli sınıf içi etkinliklerle sağlanmaya çalışılmalı da bunun öğrencilerin sanatsal eleştirel düşünme becerilerini geliştirmeye katkısının ne kadar olacağı tartışmalıdır.

Sanatsal eleştiri, sanat eserine soru sormak ve sanatsal sorgulamaları yapmak, sanat eseriyle ilgili bilgi toplayarak onları sanat eserini değerlendirmek için veri haline getirmek, soyut sanatsal ifade biçimlerini yorumlamak ve veri oluşturacak çözümlemeler ortaya koymak, bütün bu kazanımlarıyla farklı sanatsal anlamlandırma ve okumalarla da karşılaştırmak öğrencilere hem sanatsal üretim hem de sanat eseri analizi konusunda önemli kazanımlar sağlayacaktır. Sanatsal üretimin eskiz aşamasında sanatsal eleştirel yaklaşımın öğrencilere kazandırılması, onları sanatsal üretim pratiklerinde risk almaya da sevk edecektir. Bu türden yaklaşımlar öğrencilere daha fazla sanatsal bilgi ve donanım katacak, algısal becerilerini geliştirerek çevrelerine ve bu çevrede yer alan olayları farklı bir görsel ifadeyle değerlendirecek algılama ve farkındalık gücü sağlayacaktır.

**Ethics Committee Approval:** The ethics committee approval for this study/research was obtained from 79332546-000.E.2000167692 (Ref number).

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| Authors      | Contact                                                                |
|--------------|------------------------------------------------------------------------|
| Önder Yağmur | Atatürk University, Fine Arts Faculty<br>E-mail: oyagmur@atauni.edu.tr |



# A Multiple Case Study on the Reflection of Cultural Capital on Educational Strategies: Private and Public High School Graduates

Cem Serkan Atli\*, Yıldız Akpolat\*\*

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**Abstract:** The main purpose of this study is to describe the cultural capital possessed by graduates of private and public high schools and how that capital shapes educational processes. Accordingly, the study focuses on the cultural capital of graduates of public and private high schools and the strategies they have implemented throughout their educational processes. The research problem of this study is the elucidation of the inequalities created by cultural capital between private and public high school graduates. The study was conducted with a multiple case design due to the qualitative methodology adopted. The sample of the study was selected using maximum variation sampling in accordance with the chosen qualitative method. A semi-structured interview form was administered to 45 participants, 23 of whom had studied in private high schools and 22 of whom had studied in public high schools. MAXQDA 2022 software was used to analyze the data. As a result, it was concluded that private high school graduates and their parents had more institutional cultural capital than public high school graduates. In terms of educational processes, it was observed that participants with higher levels of familial institutional cultural capital preferred schools providing high-quality education rather than schools located closer to home for enrollment. Therefore, it is recommended that state policies be established to remedy the deficiencies of students with low levels of familial cultural capital.

**Keywords:** Cultural capital, private and public high school, educational strategies.

## About the Article

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\*  Corresponding Author, Dokuz Eylul University, Faculty of Letters, Turkey, cemserkan.atli@deu.edu.tr.

\*\*  Dokuz Eylul University, Faculty of Letters, Turkey, yildiz.akpolat@deu.edu.tr.



## Introduction

The subject of education has been addressed by sociologists since the emergence of the field of sociology. Among classical sociologists, Durkheim discussed education on the basis of the general sociological theory of structural functionalism. According to him, education is the institution that raises an individual who has just joined society, allowing that individual to become suitable for said society (Durkheim, 2016: 54). More precisely, education teaches children how to behave in society and trains them as individuals who will conform to society. Following Durkheim's sociological theory, Parsons (1959) also argued that education is an institution that serves to socialize and select individuals. When the studies of functionalists are examined in general, it can be said that they consider educational systems as socialization tools and structures that serve to spread education. Another important claim put forth by functionalists is that education will lead to a meritocratic societal view that will ensure equality of opportunity.

Despite the proliferation of access to education in the 1970s, factors such as race, gender, and religion still played roles in educational achievement and this led to the affirmation of the views of social scientists who had adopted conflict theories on education. In contrast to functionalists, conflictualists regard educational systems as organizations that reinforce the dominance of the upper classes. According to Althusser (2014), a conflictualist, education is an ideological state apparatus that imposes language and literature, which reproduce the ideology of the elites, on the lower classes and transforms them into individuals suitable for their future roles. Bowles and Gintis (2002) also argued that education is reproduced to the benefit of the upper classes. According to Bernstein, who is also considered a conflictualist, the class to which one belongs determines the codes that one adopts (Bernstein and Henderson, 1969). Accordingly, it is argued that lower classes with restricted codes are disadvantaged in educational systems in comparison to upper classes with more elaborate codes.

According to Bourdieu, a social reproduction theorist in line with Bowles, Gintis, and Bernstein, education is the mechanism by which the cultural capital possessed by those subscribing to the dominant ideologies is reproduced. Bourdieu claimed that in order to understand inequalities in an educational system, it is necessary to examine the contents of cultural capital. Cultural capital is a type of capital that belongs to the upper class and is difficult to access. Bourdieu (1979) classified cultural capital within three forms. The first of these is objectified cultural capital, which includes the possession of cultural products such as paintings or antique items. The second is the embodied form of cultural capital. This form of cultural capital manifests in the mind and body of an individual over a long period of time and becomes that individual's character (Throsby, 1999). The embodied form of cultural capital is acquired through socialization and ultimately determines cultural predispositions. The third and final form of cultural capital is the institutionalized form. In short, the institutionalized form of cultural capital consists of credentials and diplomas obtained as a result of academic success (Symeou, 2007). This form also involves titles obtained as a result of educational processes (Jourdain and Naulin, 2016: 107). According to Bourdieu, earned titles play a major role in institutionalizing an individual's cultural capital (Bourdieu, 1979: 6). The successful use



of embodied cultural capital in educational processes leads to the successful use of institutionalized cultural capital (Dumais, 2002). Another type of capital that can be considered as directly related to organizational cultural capital is educational capital. This type of capital gives legitimacy to educational institutions and is measured by the diplomas obtained (Bourdieu, 2017: 28).

### **Cultural Capital and Education**

The most important field in which cultural capital shows its effects is education. In education, students are expected to reciprocate cultural capital that they are not taught (Bourdieu and Passeron, 2015: 173). Long-term familiarity is the key to the acquisition of the cultural codes required for success in school. The easiest way to acquire these cultural codes is for the family to possess cultural capital and impart that form of capital to the child in the course of socialization. The elements that constitute cultural capital, such as distinguishing how to talk to teachers and friends at school or knowing school dress codes in advance by learning from one's family, may create important distinctions between students.

The level of familiarity with cultural codes differs according to social classes. For those who do not know these cultural codes, adapting to school is more difficult. Thus, students who have access to cultural capital thanks to their families are in a more advantageous position in educational systems, and education mediates the reproduction of existing inequalities between classes (Bourdieu and Passeron, 2015).

According to Bourdieu, the inequality that exists between classes results in the elimination of those who do not possess cultural capital at the end of a process that he defined as natural. In other words, those who do not possess cultural capital fall away from the system at some point in their educational lives. Students who are eliminated from the educational system perceive the reason for that elimination as their own "incompetence," which contributes to the further reproduction of inequalities. The process of elimination that starts with dropping out of high school, for example, results in not being able to gain admission to a university, or enrollment only in departments that are not prestigious or lead to limited job opportunities.

Bourdieu argued that the cultural capital acquired from one's family is not the only condition required for the phenomenon of inequality. One's family's investment strategies regarding education, as another element of cultural capital, are also decisive for educational inequalities (Bourdieu, 2017: 185). It should be noted that one's family's educational investments are shaped in line with the family's volume of cultural capital (Bourdieu, 2015: 35-36). According to Swartz, as families realize the importance of graduating from a prestigious university rather than merely being a graduate of any university, caused by the increase in the numbers of higher education graduates, they start to implement various educational strategies for their children (Swartz, 2011: 112-113). The educational strategies of families with more opportunities and more cultural capital are focused more heavily on increasing cultural competencies (Bourdieu, 2017: 184). On the other hand, families with limited cultural capital cannot implement such strategies to the same extent.

Both the international and national bodies of literature addressing this issue contain various studies measuring the effects of cultural capital on academic achievement. The works by Farkas, Grobe, Sheehan, and Shaun (1990), Roscigno and Ainsworth-Darnell (1999), and Dumais (2002) in the United States and those by Jaeger (2009) in Denmark, Yamamoto and Brinton (2010) in Japan, and Kraaykamp and van Eijk (2010) in the Netherlands showed significant relationships between cultural capital and academic achievement in their respective countries. In addition, the studies of Tramonte and Willms (2010) and Bodovski, Jeon, and Byun (2017), who measured the impact of cultural capital on academic achievement across different countries using data from the OECD's Programme for International Student Assessment, also support this relationship.

There are also studies on the effect of cultural capital on academic achievement in Türkiye. İnce (2014) concluded that cultural capital, which was examined together with social capital, was effective on academic achievement due to factors such as family participation in the educational process, expectations, attitudes, social networks, and habitus. In Atmaca's (2019) study, which compared public schools in two districts of İstanbul, it was found that students who were academically successful had higher levels of cultural capital. In addition to these studies, the findings of Arastaman and Özdemir (2019) suggested the existence of a relationship among academic aspiration, academic self-efficacy, and cultural capital.

Although various studies on cultural capital have been conducted in Türkiye, there are a limited number of studies examining the differences between private and public schools related to cultural capital. One of these studies was conducted by Cansız, Özbaylanlı, and Çolakoğlu (2018) on the role of cultural capital in the academic achievement of middle school students, using data published by the Ministry of National Education. Altun Aslan (2019) also conducted a study on parents' choices regarding private schools according to their levels of cultural capital.

In line with these theories of institutionalism and the findings presented in the literature, the present study focuses on the role of institutionalized cultural capital in the educational processes of graduates of private and public high school. The aim of this study is to examine the educational strategies of private and public high school graduates and their parents on the basis of cultural capital. To do so, the ways in which graduates of private and public high schools accumulate institutionalized cultural capital will first be examined. Subsequently, the differences between graduates who possess cultural capital and those who lack this type of capital will be described in terms of educational processes. Accordingly, the main research problem of this study is the elucidation of the inequalities created by cultural capital between private and public high school graduates.

The research questions addressed in this study in line with the research problem described above are as follows:

1. In what ways does the institutionalized cultural capital of graduates of different status of schools and their parents differ?
2. What are the similarities and differences among the strategies followed in educational processes by graduates who differ in terms of the possession of cultural capital?



This study on how cultural capital shapes educational processes is distinctive in several ways. First, this is a qualitative study of the cultural capital accumulation processes of private and public high school graduates. In other words, this study is distinct from other studies in that it focuses on graduates and their families rather than current students or their parents in order to see the impact of schooling after graduation. Furthermore, this study examines cultural capital through elements of institutionalized cultural capital. In other words, this study examines cultural capital within the framework of institutionalized cultural capital, which Bourdieu defined as the diplomas and titles gained as a result of educational capital (Bourdieu and Passeron, 2015). Therefore, the participants' and their parents' educational statuses and professional knowledge constituted the cultural capital examined in this study.

## **Method**

### **Research Design**

This study, which examines the cultural capital and educational processes of private and public high school graduates, was designed as a case study, which is a qualitative research design. This design facilitates the complete and holistic analysis of a situation (Yin, 2017). Among case study patterns, the multiple case study pattern described by Creswell was used in order to reveal different perspectives on the examined situation (Creswell, 2020: 102). Specifically, this pattern of case study design was used to examine how the cultural capital possessed by graduates of private and public high school.

According to Creswell (2020: 100), the process of a case study begins with the identification of a specific, limited, and defined case. In this study, the cases of private and public high schools were examined. In order to draw comparisons, two different status of high schools that contain multiple units of analysis were selected. Thus, different cases were utilized to reveal similarities and differences between cultural capital in different status of high schools (private and public). Four private and four public high schools in the Konak district of İzmir were selected through purposive sampling to allow comparisons between the cases. A total of eight high schools were selected to examine how the possession of cultural capital shapes educational processes.

### **Study Group**

The participants of this study were selected using maximum variation sampling in accordance with the chosen qualitative method. This type of sampling is used to create a sample group comprising cases that have certain different characteristics and qualities (Creswell, 2017: 268). Accordingly, private and public high school graduates were selected for the sample. In accordance with the research questions and design, high schools located in the Konak district and defined as Anatolian high schools were identified. This district was chosen because older high schools in İzmir as per establishment dates are located here. Only Anatolian high schools were selected in order to have schools with similar characteristics.

In line with these criteria, the participants of the study consisted of graduates of eight high schools in the Konak district of İzmir. The high schools included in the study are presented in Table 1.

**Table 1.***High Schools Included in the Study*

| Public High School   | Private High School        |
|----------------------|----------------------------|
| İzmir Kız Lisesi     | İzmir Amerikan Koleji      |
| Konak Anadolu Lisesi | İzmir Saint-Joseph Lisesi  |
| Konak 50. Yıl Lisesi | İzmir Tevfik Fikret Lisesi |
| İzmir Karataş Lisesi | İzmir Türk Koleji          |

In total, 45 in-depth interviews were conducted with 23 graduates of private high schools and 22 graduates of public high schools. Information about the participants in the study group is presented in Table 2.

As can be seen in Table 2, seven of the public high school graduates interviewed were graduates of Konak 50. Yıl High School, five were graduates of Konak Anatolian High School, five were graduates of Karataş High School, and five were graduates of İzmir Girls' High School, while six of the private high school graduates were graduates of İzmir Türk Koleji, six were graduates of Saint Joseph High School, five were graduates of İzmir American College, and five were graduates of Tevfik Fikret High School. Twenty-three of the participants were female and 22 were male. The age range of the participants was 20 to 47 years old.

**Data Collection Tool and Process**

The in-depth interview technique, a qualitative data collection technique, was used in this study. A semi-structured interview form was applied to the participants. The form was prepared in accordance with the literature to increase the validity of the study. Expert opinions were obtained before finalizing the interview questions.

After the form was finalized, an application was submitted to the relevant ethics committee. The interview form was approved as ethically appropriate by the Dokuz Eylül University Social and Human Sciences Scientific Research and Publication Ethics Committee on 22/02/2023. After the approval of the ethics committee was obtained, participants were sought. Administrators, alumni associations, and social media platforms were utilized to contact graduates. After the content of the study was explained to the participants in detail, written informed consent was obtained from those who volunteered to participate in the study. Participants were informed that the interviews were being conducted for a scientific study and that their identities would remain anonymous. It was also stated that the participants had the right to decline to answer any question and to terminate the interview at any time. Data were collected in March, April, and May 2023. These interviews lasted one hour on average.

**Data Analysis**

The in-depth interviews conducted within the scope of the research were audio-recorded with the permission of the participants. The recordings were then transcribed by the authors for analysis. MAXQDA 2022 software was used to evaluate the transcribed data. The data obtained through in-depth interviews was categorized into codes, themes, and categories with the help of MAXQDA 2022 software. The code types described by



Saldana (2019) were used in this process. Qualitative coding and descriptive coding were performed first, followed by axial coding.

Themes, categories, and codes were created in line with Bourdieu's theory of cultural capital, which served as the theoretical basis of this research. The codes created in the consideration of institutionalized cultural capital were combined into themes and categories within the framework of that theoretical basis. As a result of the analysis, one theme and three categories were defined. The codebook of the study is provided in Table 3.

**Table 3.**

*Codebook of the Study*

| Theme (Dimension)                  | Category                 | Code                                       |
|------------------------------------|--------------------------|--------------------------------------------|
| Institutionalized Cultural Capital | 1. Professional Status   | 1.1. Professional Statuses of Participants |
|                                    |                          | 1.2. Professional Background of Family     |
|                                    | 2. Educational Status    | 2.1. Educational Statuses of Participants  |
|                                    |                          | 2.2. Educational Background of Family      |
|                                    | 3. Educational Processes | 3.1. Primary School Choices                |
|                                    |                          | 3.2. High School Choices                   |
|                                    |                          | 3.3. University Habitus                    |

Theme analysis of the data was also conducted. To do so, themes were defined based on codes coded by the researchers using data obtained from the interviews (Glesne, 2020: 259). The two-case model and the hierarchical code-subcode model of MAXQDA 2022 software were utilized to visualize the data. The two-case model was selected to reveal the differences between public and private school graduates.

### Validity and Reliability

To ensure the validity of the study, expert review, member checking, and researcher triangulation strategies were applied. The expert review process consisted of consulting two experts on the subject about the draft interview form prepared in line with the literature. After the form was finalized in line with expert feedback and permission was obtained from the relevant ethics committee, the interview form was administered to the participants.

Member checking was performed by giving participants detailed information about the research and asking them whether they agreed to volunteer to participate in the study before conducting the in-depth interviews. The consent of the volunteering participants was also obtained before making the audio recordings of the interviews.

Researcher triangulation was also used to increase the validity of the study. An academic who was an expert in qualitative research was asked to evaluate the design, sample, and data analysis of the study. As a result of that feedback, the design, sample, and data analysis were finalized.



To increase the reliability of the study, the interviews were recorded with a voice recorder and the recordings were transcribed by the researchers. In addition, all coding was conducted with the consensus of the researchers. The analyzed data were coded separately by each author using MAXQDA software. The codes were then compared with each other and a consensus was reached. Due diligence was paid to ensuring that the data were consistent and verifiable. As a result, the codebook presented in Table 3 was created.

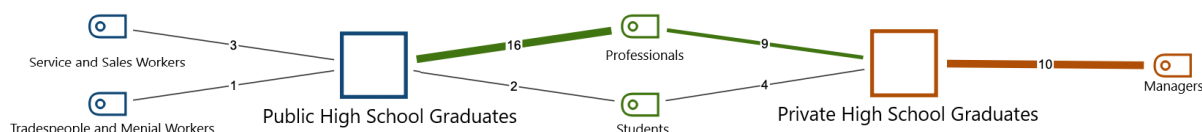
## Results

### Professional Status of Participants and Their Families

When the occupations of the participants were analyzed on the basis of high school status, it was observed that most public high school graduates were working as professionals. This was followed by jobs in service, sales, trades, and other related areas. In contrast, it was observed that most private high school graduates were managers. Most private high school graduates who were not managers were working as professionals.

**Figure 1.**

#### *Professional Statuses of Participants*



As can be seen in Figure 1, the participating private high school graduates were only employed in managerial and professional jobs. In contrast, the participating public high school graduates worked as professionals, service and sales employees, tradespeople, and employees in other related areas rather than as managers. Therefore, it can be said that the private high school graduates' levels of institutionalized cultural capital were higher regarding professional status.

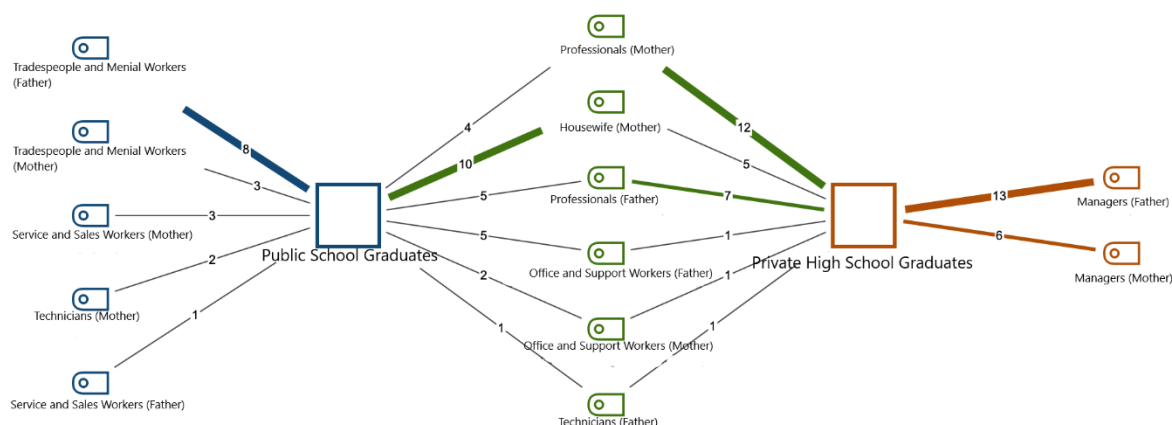
There were also differences between the professional statuses of the parents of the participants according to private and public high school. When the professions of participants' mothers were examined, it was seen that the mothers of public high school graduates were usually housewives. The second most common occupation of mothers of public high school graduates was professional work. Other mothers in this group worked as tradeswomen, service and sales workers, technicians, and clerical and support workers. Most fathers in this group were observed to be tradesmen or menial workers. This was followed by professionals and by office and support workers. In addition, some fathers in this group were technicians or service and sales workers.

Turning to the parents of the private high school graduates, it was seen that most of the mothers in this group were professionals, while most fathers were managers. These were followed by managers in the case of mothers and professionals in the case of fathers. Other mothers in this group were housewives or clerical and support workers. Although

few in number, some fathers in this group had worked as office or support workers and technicians.

**Figure 2.**

*Professional Backgrounds of Parents*



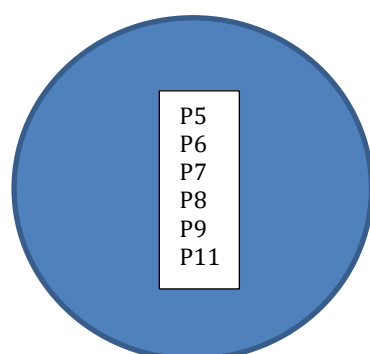
In short, a comparison of parental occupations according to high school status revealed that the parents of private high school graduates were concentrated in managerial and professional occupations. In contrast, the parents of public high school graduates were predominantly tradespeople and housewives. The fact that the parents of the public high school graduates did not work in managerial positions, much like their children, is a striking finding. This shows that the reproduction of cultural capital regarding professions is ongoing from generation to generation.

In order to objectively argue that the institutionalized cultural capital possessed in the professional realm differs according to the private and public high school one has graduated from, it was important to examine the participants who had at least one parent who was a professional or a manager.

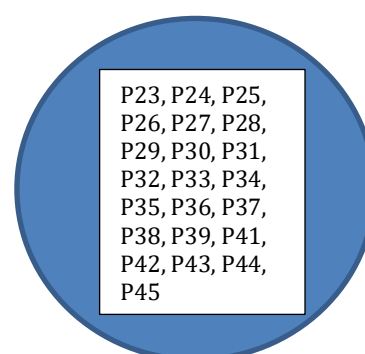
**Table 5.**

*Participants Who Had At least One Parent Who Was a Professional or Manager*

**Public High School Graduates**



**Private High School Graduates**

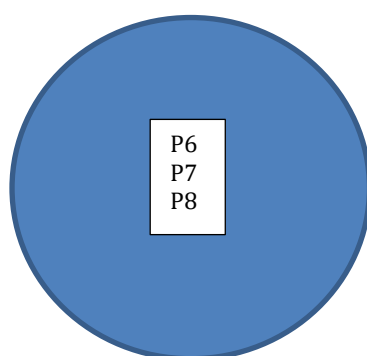


When the participants whose parents were both managers or professionals were examined, the difference according to private and public high schools was even more striking. Among public high school graduates, only three participants (P6, P7, and P8) fell into this category, whereas a significant proportion of private high school graduates did.

**Table 6.**

*Participants Whose Parents Were Both Professionals or Managers*

**Public High School Graduates**



**Private High School Graduates**

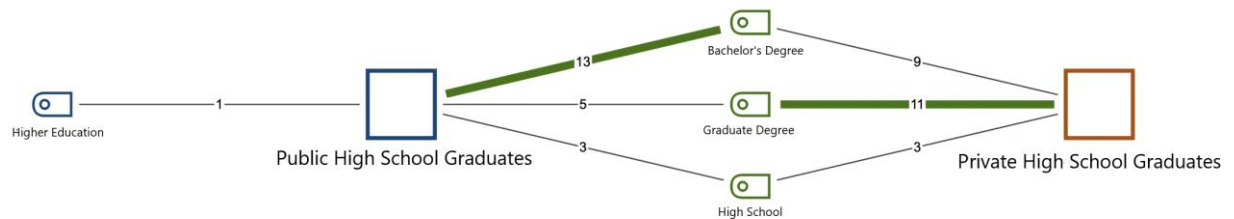


Taken together, these results show that the possession of institutionalized cultural capital regarding professions varies significantly according to private and public high schools. Since private high school graduates and their parents are generally managers and professionals, it can be said that private high school graduates and their parents possess more institutional cultural capital than public high school graduates and their parents.

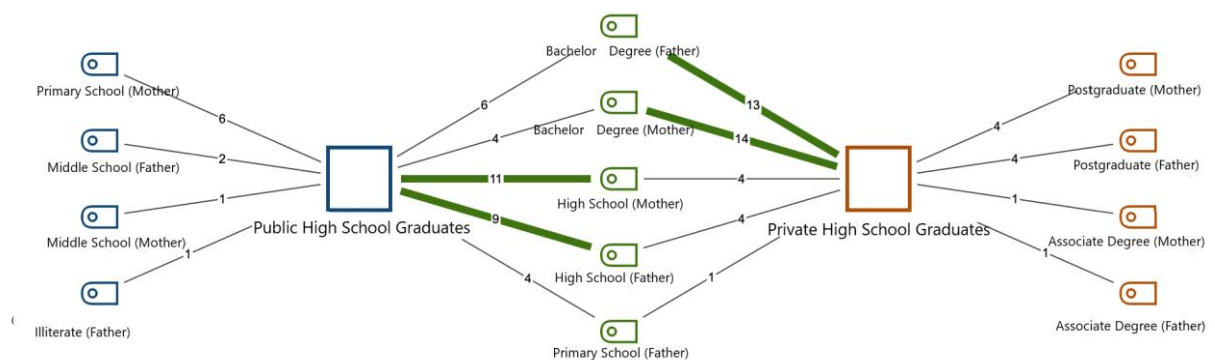
**Educational Status of Participants and Their Families**

The educational status of the graduates was also considered on the basis of institutionalized cultural capital. It was observed that, similar to professional status, there were differences between the graduates' educational statuses according to high school status. While public high school graduates predominantly had bachelor degrees, private high school graduates more often had postgraduate degrees.

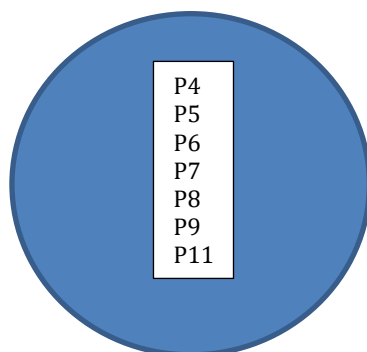
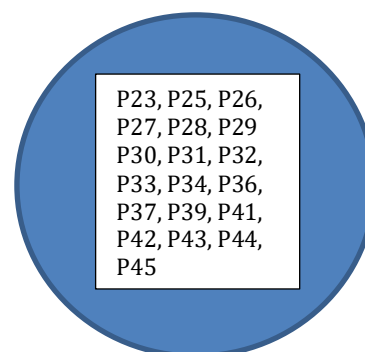
Among the participants, there were six high school graduates, which were distributed equally among the private and public high school. It was noteworthy that all graduates with high school education were currently enrolled as university students except for one public high school graduate.

**Figure 3.***Educational Statuses of Participants*

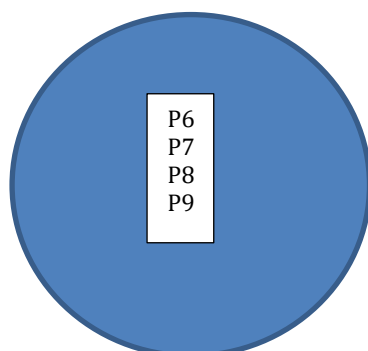
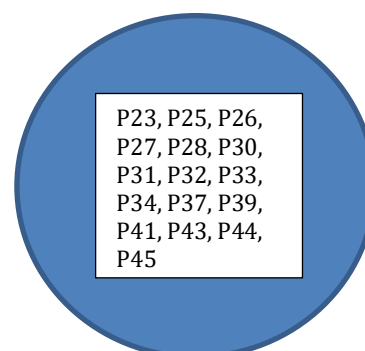
Examining the educational statuses of parents revealed that there were differences between parents according to the private and public high schools from which their children had graduated. Private high school graduates predominantly had parents with bachelor degrees, while public high school graduates generally had parents with a high school education. Parents of private high school graduates who did not have bachelor degrees most often had either postgraduate education or high school education. However, a mother and a father in this group had associate degrees, and one father had only received primary school education. The parents of the public high school graduates who did not have a high school diploma as their terminal degree generally had either a bachelor degree or primary school education. However, one mother in this group had completed middle school.

**Figure 4.***Educational Backgrounds of Parents*

As presented in Figure 4, the educational statuses of parents of private high school graduates were higher than those of parents of public high school graduates. The fact that only private high school graduates had parents with postgraduate degrees highlights the differences that correlate with high school status. Examining the participants who had at least one parent with a bachelor or postgraduate degree further supports this correlation.

**Table 7.***Participants Who Had At least One Parent with a Bachelor or Postgraduate Degree***Public High School Graduates****Private High School Graduates**

To further explore the extent of the differences correlated with high school status, participants whose parents both had a bachelor or postgraduate degree were examined. The fact that only four participants (P6, P7, P8, and P9) fell into this category from among the public high school graduates was an important finding. In contrast, most of the private school graduates were placed in this category.

**Table 8.***Participants Whose Parents Both Had a Bachelor or Postgraduate Degree***Public High School Graduates****Private High School Graduates**

The data showed that, similar to the case of occupational status, institutionalized cultural capital ownership regarding educational status differed according to private and public high schools. Thus, private high school graduates possessed more institutionalized cultural capital in terms of both occupational and educational status, and this was true not only for the participants themselves but also for their families.

Among the participants, those who possessed the highest levels of familial institutional cultural capital were those whose parents were executives or professionals and had bachelor or postgraduate degrees. These participants are presented in Table 9.

**Table 9.**

*Participants Whose Parents Were Executives or Professionals and Had Bachelor or Postgraduate Degrees*

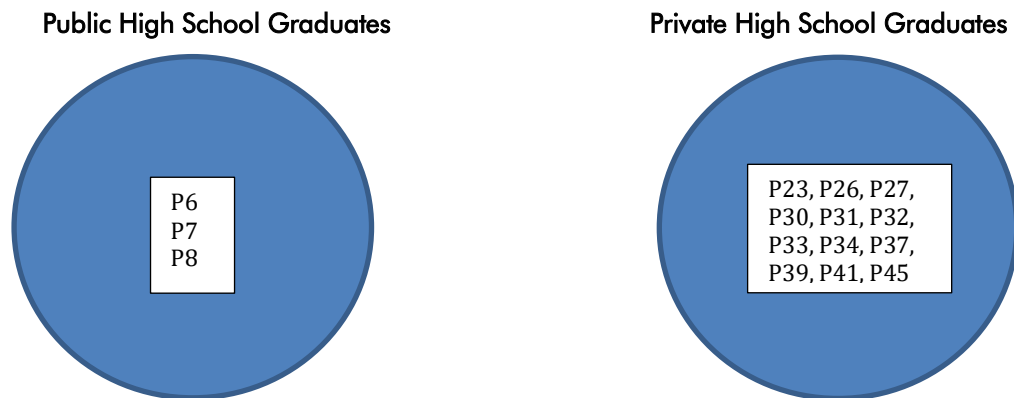
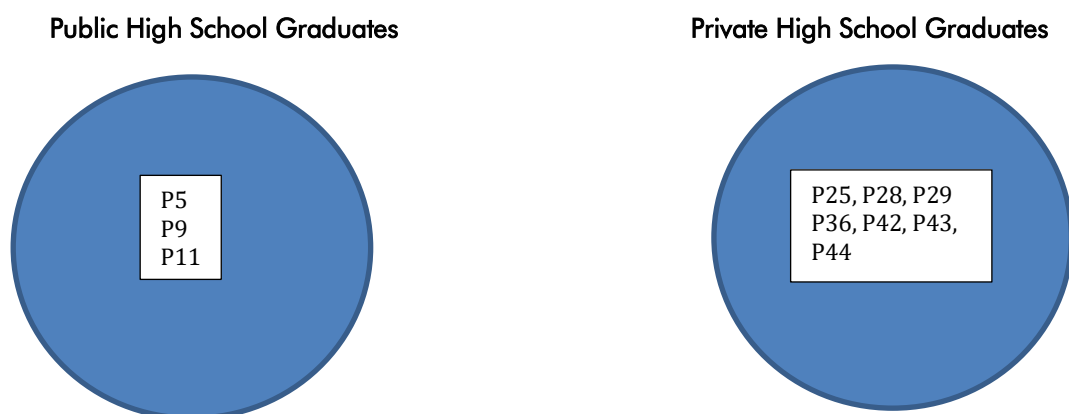


Table 9 shows that only three public high school graduates (P6, P7, and P8) fell into this category, while more than half of the private high school graduates possessed what can be considered a high level of familial institutional cultural capital. Participants with relatively high levels of familial institutional capital, albeit lower compared to the participants listed in Table 9, due to having at least one parent in a managerial or professional occupation and at least one parent with a bachelor or graduate degree are shown in Table 10.

**Table 10.**

*Participants Who Had At least One Parent in a Managerial or Professional Occupation and at Least One Parent with a Bachelor or Graduate Degree*



The data presented in Table 10 suggests that the majority of private high school graduates possess high or moderately high levels of cultural capital. However, only a limited number of public-school graduates (P5, P6, P7, P8, P9, and P11) had families with high or moderately high levels of cultural capital.



### **Primary School Choices**

In the process of choosing a primary school, the dominant decision-making role is obviously played by the parents rather than the student. Therefore, in this section, the strategies of the families of the participants for choosing a primary school are investigated as factors that determined the primary education institutions that the participants attended. It was observed that the choices of the participants' primary schools were based on three main factors: proximity to home, the family's desire for high-quality education, and the family's desire for education in a foreign language. It was found that the institutionalized cultural capital of the family was determinant in choices between different options. In other words, levels of familial institutional cultural capital were determined to be directly related to the reasons for choosing between possible primary schools. Families who possessed less institutionalized cultural capital were found to have enrolled their children in the schools closest to home. For example, proximity to home and to the father's workplace was an important factor in choosing a primary school for P22, who possessed a low level of familial institutional capital:

"Proximity to home played an important role in choosing a primary school. I could just rush to school when the bell rang. Both my primary and middle schools were located just across from my house, creating a family-like environment for me and the teachers. I was raised in a neighborhood where everyone supported each other. So, the proximity of the school to my home was the foremost factor in choosing a school. The school was also very close to my father's workplace. If anything happened, my mom and dad could rush to help me. For this reason, proximity to our home was the first reason for choosing my school" (P22, public high school graduate).

Proximity to home was also a determining factor in the choice of a primary school for P21, who did not possess a high level of institutionalized cultural capital. Furthermore, P21 explained how this primary school education negatively affected educational attainments in the future:

"You don't have much say in primary education, anyway. Whatever school was near our house was the one my parents sent me to... It was a great misfortune that I went to that school, because it became a major obstacle to my education. I didn't receive a proper education in primary or middle school" (P21, public high school graduate).

These findings were contrasted with the strategies applied by families who possessed higher levels of institutionalized cultural capital. The first of these strategies entailed choosing a primary school with qualified teachers. P7, whose family possessed a high level of institutional cultural capital and who graduated from a public high school, highlighted this distinction:

"I studied at three different primary schools. The first was a public school. I don't know why they chose that place. My mother is very sensitive about education. She tried to choose a school considering the teachers, to the best of her abilities. I had a really disciplinary teacher. Even at this age, I still use the expressions, phrasings, and explanations they taught me to good effect. Then this teacher retired and I went to another public school. The reason I was sent to that place was again because of the teachers. Then I went to another school for middle school because the teaching staff was the best" (P7, public high school graduate).

The second strategy for choosing a primary school applied by families who possessed high levels of cultural capital entailed a focus on foreign language education. Considering that foreign language education in primary school is only available in this

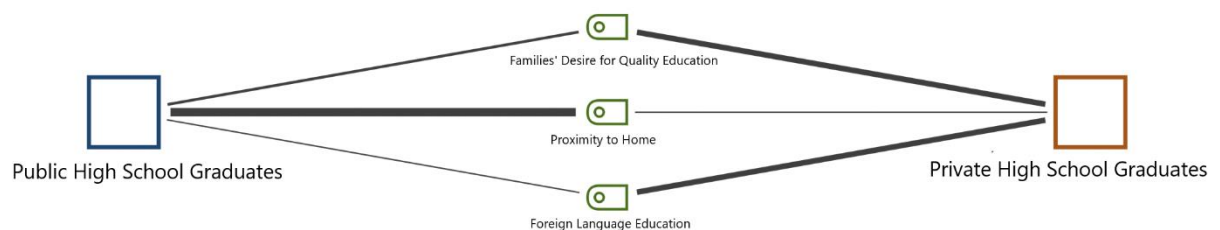


school district in private schools, it is apparent that receiving education in a foreign language necessitates both economic capital and a high level of institutional cultural capital in the family. For example, foreign language education played a crucial role in the selection of P27's primary school:

"I didn't choose my primary school myself, but my parents chose well. We were living in Ankara since my father was a bureaucrat. Then, when he received an offer from a private sector firm in İzmir, we moved to İzmir. When we came to İzmir, my father wanted me to get a private school education. He wanted me to get a foreign language education. I was enrolled in a private primary school to receive an English education" (P27, private high school graduate).

**Figure 5.**

*Families' Strategies for Choosing a Primary School*



To summarize, the institutional cultural capital of a family directly determines the quality of the primary school that a child will attend. Parents who possess lower levels of institutional cultural capital have fewer chances to apply different selection strategies. Due to the limited available resources, these parents often choose the primary school closest to home. On the other hand, it was seen that the strategies for choosing a primary school applied by the parents who possessed higher levels of familial cultural capital were diverse. Families with more cultural capital preferred high-quality schools for their children. It was also observed that there were participants whose families preferred to send their children to private primary schools in order to provide them with intensive foreign language education. These results highlight the inequality that arises between students based on cultural capital when their families are selecting primary schools.

### High School Choices

When the time comes to choosing a high school, the number of factors affecting the choice of the school increases. For participants who had graduated from public high schools, the most important factor in choosing a high school was their scores on the high school entrance exam. It is also noteworthy that students who attended high schools with higher score requirements generally had higher levels of familial institutional cultural capital. P8, whose parents had bachelor degrees and worked as professionals, is an example of these participants:

"My high school choice was conscious. It was a choice I made very willingly, after much research. I was also happy with the school I chose. Then we researched Anatolian high schools in İzmir and such. Another high school was my first choice. The İzmir Girls' High School was my second choice" (P8, public high school graduate).

The high school choice of P13, whose parents were high school graduates, was influenced by this participant's high school entrance exam score and the support of a guidance counselor who helped in evaluating that score:

"My 8th grade guidance counselor told me that I had a high enough score to attend this school and said that I could go check it out if I wanted. We then went and visited the high school, looking around the school environment. The vice principal showed us around the school. To be honest, I chose this school because our experience there was nice and it made us think that I could go to this school" (P13, public high school graduate).

It is important to note that some graduates, albeit few in number, stated that they chose Anatolian high schools because these schools provide foreign language education. On the other hand, participants with lower entrance exam scores had to choose among more limited options. Some participants who graduated from public high schools stated that they chose high schools that were close to their homes or were categorized as "Super."

**Figure 6**

*Strategies for Choosing High Schools*



As of 2005, "Super" high schools were renamed "Anatolian" high schools. These are public high schools accepting students who did not have particularly high entrance exam scores due to their high primary school grade point averages. These schools are thus differentiated from other types of high schools due to basing enrollment on grade point averages and offering English-oriented education. P2, who was not eligible to enter high schools that based enrollment on high school entrance exam scores, chose a "Super" high school since it offered English education:

"I don't know if you remember those times, what students did when their scores were a bit low. At those times, all the students who couldn't enroll in the science high schools or Anatolian high schools had to search for other schools. When I scored a bit low, my family started looking for schools I could attend, schools we could choose other than general high schools. I don't remember much since I was young, but we chose this school because it was a "Super" high school... Because it was a "Super" high school and it provided English prep classes... There were students who couldn't get into Anatolian high schools but weren't in a position to go to a general high school" (P2, public high school graduate).

Another factor that influenced the choices of students who could not enroll in high schools that required high entrance scores was the proximity of the schools to their homes. Similar to primary school choices, participants who possessed low levels of familial cultural capital preferred high schools closer to their homes. For P21, proximity to home was an important factor in choosing a high school:

"My score was high enough to attend any school requiring high scores, and I did have a very bad education. Both in elementary school and in middle school. My parents insisted that I should have a university education. Then they sent me to Karataş High School. The school was close to my house. I can't deny that. That was the reason why I didn't enroll in another high school and went to Karataş High School... Proximity to home was important" (P21, public high school graduate).

P18, who possessed a low level of familial cultural capital, similarly had to choose a high school close to home due to having a lower entrance exam score:

"Karataş High School was very close to our neighborhood. I mean, there might have been other schools around, but they had bad reputations at that time. We said that we should choose Karataş High School, and I didn't have a high enough score for other high schools, either" (P18, public high school graduate).

It was observed that the process of choosing a high school was different for participants who chose private high schools. One of the important conditions for enrolling in a private high school is having the means to pay the fee required by that school. High levels of economic capital are necessary to meet this requirement, which amounted to significant sums for the tuition fees of the participants who attended private high schools. In addition, private high schools accept students on the basis of their high school entrance exam scores. Until 2010, Anatolian high school exams and private high school exams were conducted separately, but they have been conducted as a single exam since that year. The score obtained from this exam determines the high schools in which students can enroll. A certain base score is set for admission by each school. Candidates make their choices according to these base scores. If the student quota of the school is not met according to the predetermined base score, the score is adjusted and the base score is lowered until the quota is reached. Considering all these processes, the fact that the participants who graduated from private high schools did not consider their entrance scores as a factor affecting their high school choices underlines the distinction between high school status.

The most important factor influencing the high school choices of the participants who graduated from private high schools was foreign language education. P35 decided to continue receiving education at a school in which classes were taught in English since this participant wanted to learn English alongside the French education received in primary school. The fact that this participant chose a private high school due to the foreign language education provided there even though it would have been possible to attend other high schools with high score requirements in İzmir highlights the differences between choice strategies according to high schools:

"After the high school exam, I could also attend the French programs of important Anatolian high schools. But French was my main foreign language. Considering I already knew French, English was more important, so my parents' kind of planted a seed in my mind that I could go to the American College if I wanted to, so that I could prioritize English over French. My father said this. So, I wanted to go to the American College... I wanted a completely foreign language-oriented education" (P35, private high school graduate).

P29's high school choice was also influenced by the fact that the family contained other private school graduates. Parents who understand the differences between private schools and public schools thanks to their habitus as private school graduates themselves are likely to insist that their children receive a high-quality education accordingly:

"My mother was a private school graduate. She was an English teacher working in the public sector. Naturally, she [could see] the differences between public schools and private schools in some respects. My mother was very insistent that I choose a private school. Since she was an English teacher, she attached great importance to foreign language education. So, we preferred İzmir Türk Koleji" (P29, private high school graduate).

These parents wanted their children to attend private schools that provided foreign language education, but they also wanted them to pursue successful careers. P26, whose own preference for foreign language education was effective in the choice of a high school, was also guided by the family's influence:

"I took the entrance exams as per the system in place in that period. I had a score high enough to attend public schools that required high scores at that time. Among private schools, I had a score high enough to attend İzmir American College. Then my father guided me, especially considering the effect of foreign language education. They thought that they could bear the financial burden because the education I received would contribute more to my professional and personal life, and they directed me to the American College" (P26, private high school graduate).

Participants who had graduated from private middle schools also often based their high school choices on their social circles. The concept of familiarity with high school, which involves a family member or family friend having previously attended a given high school, was also seen to affect some high school choices. In other words, a family's familiarity with a high school may impact their choice of that high school. P40's choice was influenced by a positive reference from his uncle, who had graduated from the same school P40 thought of attending:

"I chose this private school because my mother's younger brother, my uncle, graduated from the same school. We heard about this school since we are a family from İzmir... My uncle said positive things to me about the school. He especially told me that the people I would meet there would be with me for the rest of my life and that I would develop a good network" (P40, private high school graduate).

Although they did not carry as much importance as factors such as foreign language education or family familiarity, the size of the scholarship being offered to the student and the school's characterization as "well established" were other important factors affecting private high school choices. Since P24 did not have a high enough entrance exam score to attend the preferred public high school, this participant instead chose a private high school that had an image of being a well-established school:

"I enrolled in the private İzmir Saint Joseph French High School based on the exam. We chose this place as a family. I wanted to enroll in an Anatolian high school, but I couldn't get into the English programs of public high schools. I could only attend the German programs. Since I didn't want to study in German, my family guided me to enroll at Saint Joseph, since it's a well-established school" (P24, private high school graduate).

Thus, the data of this study reveal important distinctions between the high school choices of participants who graduated from private and public high schools. It was observed that graduates of public high schools chose high schools based on the scores they obtained from the high school entrance exam. Accordingly, they either chose a high school that would accept them based on their exam scores, or they chose "Super" high schools or schools close to their homes. In contrast, although economic capital and the limitations of exam scores are factors to be considered in private high school enrollment, these did

not pose a problem for the participants who graduated from private high schools. The participating private high school graduates chose private high schools that provided foreign language education, schools with which their families were familiar, and schools that were characterized as well established. Compared to public high school graduates, graduates of private high schools were more able to attend the schools of their choice and faced fewer restrictions. This shows that the inequalities impacting access to education between the participants were ongoing at the high school level.

### **University Habitus**

University enrollment constitutes an important part of the education process and it was seen that three main factors affected the university choices of the participants. The first of these factors was individual choice. This factor was connected with personal interests. In other words, many participants received education in the departments and universities of their own choosing in line with this factor. It was noteworthy that the graduates who chose universities and departments based on their own personal interests were generally the participants who possessed higher levels of familial cultural capital. The choice of P8, a public high school graduate whose family had a high level of institutionalized cultural capital, is an example of the effects of this factor:

"I already had a tendency to work outdoors, to work in natural environments and such. This tendency was there even before I thought of becoming a geological engineer. I also had a bit more of a wish to become a sailor. While researching departments, I came across this department [of geological engineering]. Back then, professors from our department were working in the field. I had the opportunity to work with them. So, I researched the department a little deeper, and I liked it. The effect of the department I was studying in being available at Hacettepe can't be denied. I already wanted to go to school in Ankara because I grew up there. This was a conscious and enthusiastic choice, a choice that I made after researching departments over a period of time" (P8, public high school graduate).

P32, a private high school graduate with a high level of familial institutional cultural capital, also enrolled in a personally chosen department and university:

"I first considered the economics of my choice, and then I thought to myself that one should study what one loves. And I realized that I couldn't study in any engineering fields. Instead, I remembered that when I was 16 or 17, I was following financial developments, I was keeping up with the economy, and so I said 'I love this subject and I need to study this'" (P32, private high school graduate).

There were also graduates who made decisions in line with their own personal interests but also stated that their exam scores played an important part in their final decisions. The choice of P11, who possessed a high level of familial institutional cultural capital, was influenced by both the department this participant was personally interested in and the score obtained from the university entrance exam:

"Since I was very young, I've always been in charge of making my own decisions. My personality is like that. I like to make my own decisions. But I was already thinking whether I should study at Boğaziçi University or Middle East Technical University [METU]. My score wasn't high enough to attend Boğaziçi University... So I chose METU because my score was high enough to go there... I wanted to study psychology" (P11, public high school graduate).

Another important factor affecting the choices of the participants who made their decisions in line with their personal interests was whether the university provided foreign

language education. This especially affected the choices of private high school graduates. P28's university choice was influenced by the desire to further advance the foreign language that this participant had learned in high school:

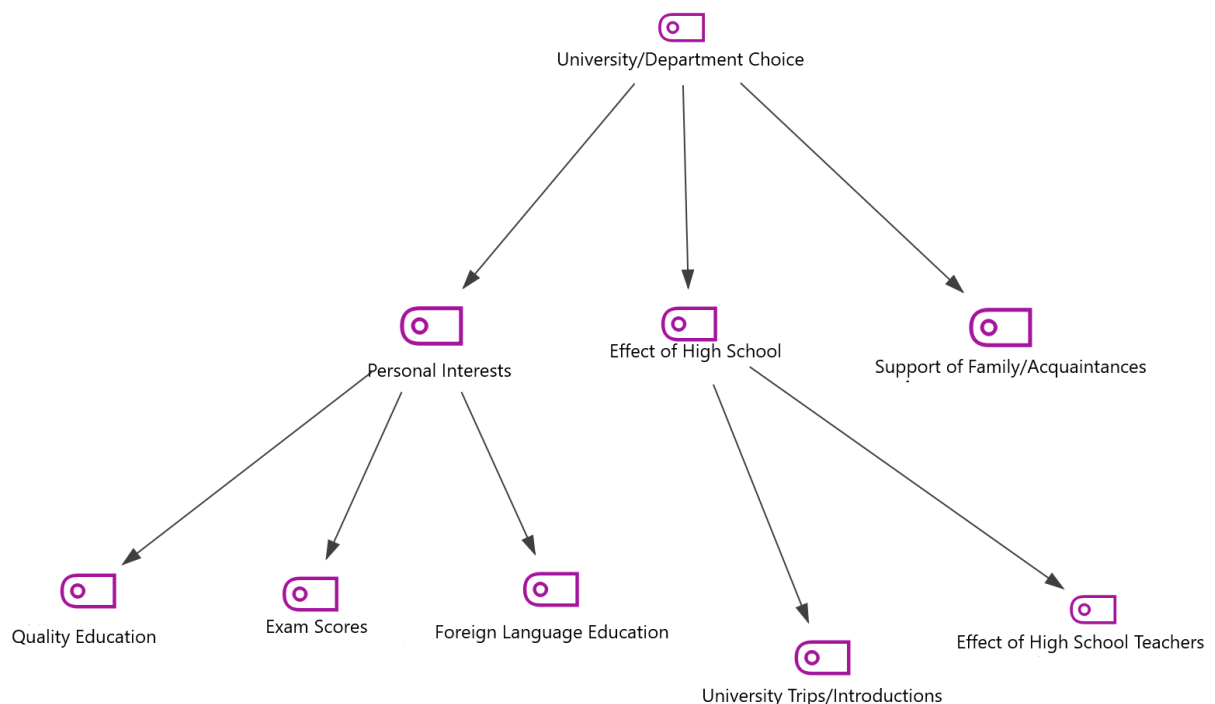
"My wish to further improve my English was effective in choosing my department. I never wanted to be an English translator, but, as you know, foreign language education is very difficult to obtain in Türkiye. I thought that if I improved my foreign language skills, I would have many options in the future. So, I chose the Department of Translation and Interpreting" (P28, private high school graduate).

Choosing universities that are considered to provide high-quality education, a priority that can be argued to be correlated with personal interests, was also a common factor among the participants. The choice of P35, for example, was significantly impacted by the faculty members of the university:

"Actually, I chose this university after hearing the names of a few professors there, and that they were very successful professors, very successful in giving lectures. Then I attended their lectures, and I noticed that the rumors weren't even telling half of them. All of my lawyer friends had already taken lessons from and read the books of these people. We listened to the teachers personally. That's why I think I made the right choice. One of the professors, for example, was...Serap Yazıcı. She was [previously] the chairman of the constitutional commission. She attended the meetings in which the constitution was being written. The woman who wrote the constitution was teaching us about the constitution. That was something amazing" (P35, private high school graduate).

**Figure 7.**

*Strategies for Choosing a university and/or Department*





Another factor influencing the choice of a university and department was the influence of the family. As the volume of a family's institutional cultural capital grows, the family's strategies for guiding the children become more deliberative. Therefore, there is a direct link between high levels of cultural capital and university choices. The choice of P9, who possessed a high level of familial institutional cultural capital, was significantly affected by the opinions of the father:

"My father was impressed by a professor he had learned from at Boğaziçi University. For a while during the university selection process, I said to myself that there was no school I couldn't enroll in. Instead of studying management and information systems at Boğaziçi, I could enter METU or Koç with a full scholarship. That was the first time I heard my father say to me: 'Are you crazy, son?' He told me to go to Boğaziçi. It was the first time he ever said something like that. So, my family positively guided me" (P9, public high school graduate).

There were also participants for whom the high school from which they graduated had an impact on their choices of university and department. The most significant way in which high schools affected these choices was the organization of trips by the high schools for their students to visit universities. For example, the university visits organized by the high school contributed to P6's familiarity with the visited universities and influenced this individual's final choice:

"Our school had organized trips to universities in İstanbul and Ankara... Those gave me some ideas. My family was more influential in my choice, but the fact that the school organized trips to visit universities was also a factor" (P6, public high school graduate).

Career days organized by universities at high schools are also effective for university/department choices. For example, the career days organized at P13's high school were decisive in this participant's choice of a university:

"There were career days in high school. At one of them, the genetics and engineering departments of İzmir University of Economics were introduced. A [faculty member] even came and told us about the university. I got to know about the departments there. High school provided me with such an advantage in choosing a university" (P13, public high school graduate).

Another situation in which the influence of the high school on university choices is apparent arises when high school teachers support and guide the choices of their students. P5 described receiving information about the chosen university department with the help of high school teachers:

"Especially the science department and the literature and philosophy faculties, which are my own areas of interest and hobbies, and the math department were very supportive. In high school, [regarding science] both of our chemistry and biology teachers were from METU and actually both of them had master degrees. Those two teachers helped me a lot. Ultimately, when you're choosing to study a subject or do something, you do so at the high school level without really knowing the ins and outs of it. I chose electronic engineering with the guidance of my teachers" (P5, public high school graduate).

Among the participants whose choices were affected by the influence of their teachers, some possessed low levels of familial institutional cultural capital. For example, the contribution of teachers to the university choice of P2, who graduated from a public high school and had a family with a low level of cultural capital, was significant:

"These fields like software, computer engineering, or software engineering are touted as the professions of the future. So, the teachers at school were directing us towards these departments.



Especially guidance counselors... I think the teachers in high school were providing us with proper support. Our teachers guided us according to our competencies. They guided us like: 'It would be better if you chose this department, these types of professions would be better for you.' My adventure as a software developer started there. That's how they guided us" (P2, public high school graduate).

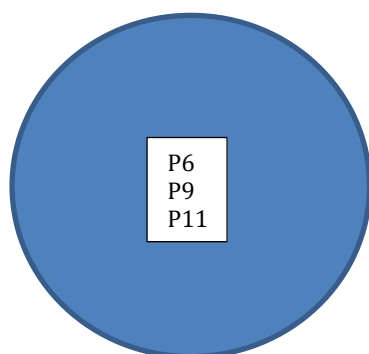
Hence, it should be noted that the choices of a university and a department seem to be intertwined, and choosing a university is clearly a process in which more than one factor is effective. Additionally, in the period of life in which they were choosing a university, the participants went through a process in which habitus was influential together with cultural capital in shaping their future lives. Habitus can be described as the intellectual and behavioral norms internalized by an individual through socialization processes.

Accordingly, the participants made their choices on the basis of the predispositions they acquired during socialization processes. The area in which habitus was most apparent in the present research was the participants' processes of selecting a university. When the participants who attended prestigious universities\* are considered, it can be seen that there were important differences between private and public high schools. Only three public high school graduates (P6, P9, and P11) studied at prestigious universities, while a significant number of participants who graduated from private high schools studied at prestigious universities. Examining the participants who enrolled in prestigious universities in more detail emphasizes this distinction between high schools.

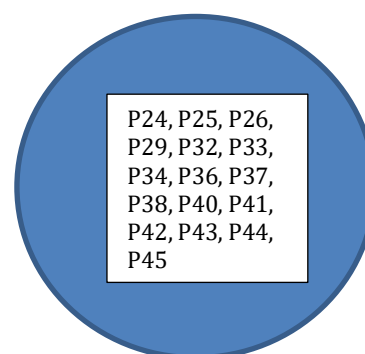
**Table 11.**

*Participants Who Enrolled in Prestigious Universities*

**Public High School Graduates**



**Private High School Graduates**



As presented in Table 11, there are differences between the participants regarding enrollment in prestigious universities according to private and public high schools. The fact that most private high school graduates studied at prestigious universities is a remarkable finding. The educational strategies implemented beginning with primary school and continuing until the selection of a university played important roles in creating

\* Within the framework of the research, universities ranked in the top 1000 by the QS World University Rankings in 2022 were accepted as "prestigious" universities.



these differences. The competent educational strategies followed by families in determining their primary school preferences continued into high school life and finally resulted in the student obtaining a high-quality education based on his or her own personal interests, with these decisions being shaped by the participants' own preferences and influenced by the input they received from their families and schools.

On the other hand, it is noteworthy that among the public high school graduates, only participants who possessed high levels of familial institutional cultural capital obtained prestigious university degrees. This fact shows that cultural capital plays an important role in educational processes. A significant number of participants who attended prestigious universities after graduating from private high schools similarly possessed high levels of familial institutional cultural capital. This finding suggests that parents' institutional cultural capital paves the way for their children to study at prestigious universities. However, participants who possessed less capital of this form studied at less prestigious universities. In summary, these results are significant in that they show that the inequality between students that begins in primary school and continues on through high school is still influential on their university enrollment.

### **Discussion, Conclusion, and Recommendations**

The main focus of this study was the institutional cultural capital possessed by the graduates of private and public high schools. While examining institutionalized cultural capital corresponding to diplomas and titles earned through education, the professional and educational statuses of both the graduates and their parents were taken into account. The results of this research revealed that there are differences in the professional dimension of institutionalized cultural capital according to high school status. In terms of occupation, private high school graduates were mainly employed in managerial and professional job groups. In contrast, public high school graduates were concentrated in professional occupational groups. When familial institutional cultural capital was considered, it was observed that the parents of private high school graduates were mostly employed in managerial and professional occupations, like their children, while the vast majority of the parents of public high school graduates were not managers. In other words, private high school graduates with managerial parents worked as managers like their parents. This finding reveals that institutional cultural capital is reproduced professionally. On the other hand, public high school graduates whose parents were not managers did not work as managers themselves.

Considering educational status as another element of institutionalized cultural capital, it was concluded that private high school graduates had higher educational statuses than participants who graduated from public high schools. There were also important distinctions in this element of institutionalized cultural capital in terms of the parents of the participants. While it was observed that the parents of public high school graduates had predominantly achieved high school diplomas as their highest level of education, the parents of private high school graduates had higher diplomas, such as bachelor degrees.



Some private high school graduates had parents with graduate degrees, which also underlines the significant extent of the distinction between these two different statuses of schools. As a result, it was concluded that the private high school graduates had higher levels of institutional cultural capital than the public high school graduates in terms of occupational and educational status, which were considered on the basis of institutionalized cultural capital in this study. However, it was also observed that some public high school graduates possessed higher levels of familial institutionalized cultural capital. The fact that these participants graduated from two specific public high schools where enrollment requires a significantly high entrance exam score shows that there are also distinctions among schools of the same statu. Overall, it seems that the education and titles held by parents play mediating roles in the acquisition of an institutional identity for their children. The fact that the participants had occupational and educational statuses similar to those of their families supports this conclusion.

Answers found regarding another research question addressed within the scope of this study also showed that there were differences in the implementation of the participants' educational strategies according to both private and public high schools and familial institutional cultural capital. Specifically, it was observed that the family's possession of institutional cultural capital directly shaped the educational processes of their children. These educational strategies were not limited to high school; the process started as early as primary school and continued until it was time for the child to select a university. It should also be noted that families that implemented strategies to ensure high-quality education for their children possessed high levels of institutionalized cultural capital. In other words, parents with high levels of cultural capital applied selective strategies such as having their children learn a foreign language or receive a high-quality education rather than making choices based on proximity to the school or exam scores. Decisions about the education processes of the participants differed according to their families' possession of cultural capital.

The strategies applied in accordance with the levels of cultural capital possessed by the families determined not only the educational processes of the children but also affected their choices regarding higher education. The fact that a significant majority of private high school graduates studied at prestigious universities confirms that these participants and/or their families developed strategies aimed at high-quality education. It is also noteworthy that, although they were few in number, participants who graduated from public high schools and possessed high levels of familial institutionalized cultural capital also preferred prestigious universities. This shows that the presence of familial institutionalized cultural capital is an important factor in accessing quality education. In contrast, individuals who do not possess this type of cultural capital are more likely to have their educational processes shaped by their exam scores.

The fact that strategies developed on the basis of the possession of cultural capital resulted in students attending more prestigious universities underlines the inequalities that exist between public and private high schools. It was seen that participants who did not start at equal points in primary school inevitably concluded their education in different places as well, as characterized by their choices of universities. In relation to



this, it was observed that the educational processes of private high school graduates, who had easier access to cultural capital, were shaped in line with the desire to receive education in high-quality institutions. More precisely, the educational strategies of families who possessed high levels of cultural capital were developed on the basis of increasing cultural competencies. As a result, it can be concluded that cultural capital has become an investment strategy used by families who possess high levels of cultural capital, as argued by Bourdieu (2017).

The present study reached results similar to those of previous studies arguing that the possession of cultural capital has become an important factor determining academic achievement (Farkas, Grobe, Sheehan, & Shaun, 1990; Roscigno & Ainsworth-Darnell, 1999; Dumais, 2002; Jaeger, 2009; Yamamoto & Brinton, 2010; Kraaykamp & van Eijk, 2010; Tramonte & Willms, 2010; Bodovski, Jeon, & Byun, 2017; İnce, 2014; Atmaca, 2019; Arastaman & Özdemir, 2019). Similar to the results of our study, these studies have found that cultural capital has significant contributions to academic achievement. The results of the present study are also similar to the conclusions reached by Cansız, Özbaylanlı, and Çolakoğlu (2018) on the basis of cultural capital as parents' education levels and occupational groups were found to affect academic achievement. However, since these studies are based on quantitative methodology, they have methodological differences with our study.

The results of the study are especially important in terms of producing similar results to the study of Reay (2004), who argues that the participation of families in their children's education has become a component of cultural capital. Reay, who conducted his study in line with the qualitative method, found that families from the upper class establish healthier relationships in the education process than families from the lower class. In another qualitative study suggesting that parents' interaction with the school system is a source of cultural capital, McDonough (1997), similar to our study, concluded that parents help their children choose a school by using their cultural capital. McDonough argues that parents who have cultural capital help their children in the university selection and application process. It will be remembered that also in our study, it was concluded that parents who have cultural capital apply strategies towards quality in terms of education for their children.

The most important finding of this study is that the cultural capital possessed by the family drives the processes in the child's educational life toward high-quality education. Thus, it is necessary to focus on students with lower levels of familial institutional cultural capital in order to reduce inequalities in education. In this process, educational institutions can be expected to provide the support that some students cannot receive from their families. It is of utmost importance to develop support mechanisms to help students make more informed decisions, especially in the process of choosing a university. In addition, economic investment in education is also important in reducing inequalities between public and private schools. Increasing state support for reducing the differences between high school status and between families with and without cultural capital could play an important role in reducing inequalities.

Finally, it is recommended that further studies be conducted on this subject not be limited to qualitative methods. Research should be carried out based on quantitative and mixed methods and should include more diverse sample groups in order to address this subject in detail. Only two different types of high schools, private and public Anatolian high schools, were considered in the present study. In addition to private and public high schools, it is also important to examine the progression of the educational processes of graduates from other school types such as imam-hatip high schools, science high schools, and vocational high schools.

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## Genişletilmiş Türkçe Özet

Çalışma kapsamında özel ve resmi liselerden mezun olanların ve ebeveynlerinin sahip olduğu kültürel sermaye temelinde eğitim süreçlerindeki izledikleri stratejilerinin derinlemesine açıklanması hedeflenmiştir. Bunun gerçekleştirilebilmesi için araştırmada ilk olarak özel veya resmi liselerden mezun olanların kurumsallaşmış kültürel sermaye birikimleri üzerinde durulmuştur. Daha sonrasında kültürel sermaye sahibi olan veya bu sermaye türünden yoksun kalan mezunların eğitim süreçleri açısından ne tür farklılıklar taşıdığı betimlenmiştir. Araştırmanın temel problematiği ise “özel ve resmi lise türleri arasında kültürel sermayenin eşitsizlikler üzerindeki rolünü görünür kılmak” olarak formüle edilmiştir. Çalışma, kültürel sermayenin eğitim süreçlerine yansımalarının hem farklı okul türleri bağlamında hem de mezunlar üzerinden ele alması bakımından diğer çalışmalardan farklılık göstermektedir. Bunun yanında kültürel sermayeyi kurumsallaşmış kültürel sermaye temelinde ele alınması bakımından da alandaki çalışmalardan ayrılmaktadır.

Çalışmada açıklanması istenen durumla ilgili farklı bakış açıları ortaya çıkarılmak istendiği (Creswell, 2020: 102) için nitel yöntem desenlerinden çoklu durum çalışması kullanılmıştır. Bu doğrultuda çalışmada kültürel sermayenin farklı lise türlerinde nasıl farklılaştığını ortaya koymak için özel ve resmi liseler birer durum olarak ele alınmıştır. Çalışmanın katılımcıları belirlenirken nitel yöntemde uygun olarak maksimum çeşitlilik örnekleme kullanılmıştır. Bu doğrultuda Konak ilçesinde yer alan 4 özel ve 4 resmi lise seçilmiştir. Çalışmada nitel veri toplama tekniklerinden derinlemesine görüşme tekniği 23’ü özel, 22’si resmi lise olmak üzere 45 kişiye uygulanmıştır. Katılımcılarla derinlemesine görüşme yapılırken yarı-yapılandırılmış görüşme formu uygulanmıştır.

Çalışma bağlamında derinlemesine görüşmeler sonucu elde edilen veriler, MAXQDA 2022 yardımıyla kod, tema ve kategorilere ayrılmıştır. Kodlama gerçekleştirilirken birinci döngüde nitelik kodlama ve betimsel kodlama gerçekleştirilmiştir. İkincil döngüde ise eksensel kodlama yapılmıştır.

Çalışmada geçerliğin sağlanabilmesi adına uzman incelemesi, katılımcı teyidi ve araştırmacı çeşitlemesi stratejileri uygulanmıştır. Güvenirliğin artırılması için ise görüşmeler ses kayıt cihazıyla kaydedilmiş ve kayıtlar araştırmacılar tarafından dinlenerek yazıya aktarılmıştır. Güvenirliğin artırılması noktasında dikkat edilen bir başka husus kodlama aşamasında kodlayıcılar arası görüş birliğinin sağlanmasının gerçekleştirilmesidir.

Araştırma sonucunda kurumsallaşmış kültürel sermaye temelinde ele alınan mesleki durum açısından lise türüne göre önemli ayrımlar bulunduğu sonucuna ulaşılmıştır. Özel lise mezunlarının sadece yönetici ve profesyonel meslek gruplarında bulundukları dikkat çekmektedir. Buna karşılık resmi lise mezunları genel olarak profesyonel iş grubunda yoğunlaşmaktadır. Profesyonel iş grubunun yanında satış ve servis çalışanları ve zanaat ile ilgili esnaf çalışanları da bulunmaktadır. Farklı lise türlerine göre ebeveyn meslekleri karşılaştırıldığında da lise türlerinde farklılıklar dikkat çekmektedir. Özel lise mezunlarının anne ve babalarının yönetici ve profesyonel iş gruplarında yoğunluklu olarak toplandıkları gözlenirken resmi lise mezunlarının ebeveynleri ağırlıklı olarak



zanaat ve ilgili esnaf çalışanı/işçi ve ev hanımı oldukları görülmektedir. Resmi lise mezunları ebeveynlerinin çocukları gibi yöneticilik pozisyonunda bulunmaması, mesleki anlamda yeniden üretimin gerçekleştirilmesinin nesilden nesile devam ettiğini göstermesi açısından değerlidir.

Kurumsallaşmış kültürel sermayenin eğitim durumu açısından mesleki durumda olduğu gibi okul türlerine göre önemli farklılıkların olduğu görülmektedir. Resmi lise mezunlarında ağırlıklı olarak lisans mezunu bulunurken, özel lise mezunlarında yoğunluk lisansüstü eğitimde toplanmaktadır. Ebeveynlerin eğitim durumu incelendiğinde ise yine lise türüne göre önemli ayrımların olduğu dikkat çekmektedir. Özel lise mezunları ağırlıklı olarak lisans mezunu anne ve babalara sahipken, resmi ortaöğretim kurumları mezunları ise eğitim durumu lise olan ebeveynlere sahiptir. Görülmektedir ki, özel ortaöğretim kurumlarından mezun olanların ve ebeveynlerinin hem mesleki anlamda hem de eğitim durumu açısından daha yüksek kurumsallaşmış kültürel sermaye sahibi oldukları gözlenmektedir.

Katılımcıların eğitim süreçleri incelendiğinde ilkökul tercihinde eve yakınlık, ailenin nitelikli eğitim isteği ve yabancı dile dayalı eğitim talebinin etkili olduğu sonucuna ulaşılmıştır. Farklı seçenekler arasındaki tercihi belirleyen unsurun, ailenin sahip olduğu kurumsallaşmış kültürel sermaye olduğu gözlenmektedir. Başka bir ifadeyle katılımcının ailevi kurumsal kültürel sermaye sahipliği, eve yakınlıktan ziyade nitelikli eğitim tercihinde belirleyici olmaktadır.

Lise tercih döneminde katılımcıların mezun oldukları lise türüne göre farklı seçimler yaptıkları görülmektedir. Resmi liseden mezunlar olanlar tarafında, ortaöğretim tercihinde en önemli etkeni liselere giriş sınavından alınan puan oluşturmaktadır. Puanla giriş yapılan liselere yeterli düzeyde puanı olan mezunların almış olduğu puan çerçevesinde tercih yapmaktadır. Puanla tercih edilen liselere giriş imkânı olmayan katılımcıların tercihinde ise süper lise ve eve yakınlık öne çıkmaktadır. Özel lise tercih eden katılımcıların lise tercihinde etkili olan etkenler ise yabancı dil eğitimi, sosyal çevrelerinden birinin liseye aşına olması ve köklü lise imajıdır.

Eğitim sürecinin önemli bir parçasını oluşturan üniversite tercih dönemi incelendiğinde tercih yaparken kişisel ilgi, ailenin etkisi ve okulun yardımı gibi üç ana unsurun devreye girdiği görülmektedir. Ailevi kurumsal kültürel sermayeye sahip olan katılımcıların kişisel ilgilerine göre tercih yaptıkları ve ailelerinin de bu süreçte destek oldukları dikkat çekmektedir. Araştırmanın önemli sonuçlarından bir diğeri de özel lise mezunlarının prestijli üniversiteleri tercih etmesidir. Bu tercih aslında ilkökuldan başlayıp üniversite tercih dönemine kadar geçen süre içerisinde gerçekleştirilen eğitim stratejilerinde kültürel sermaye sahipliğinin rolünü göstermesi bakımından değerlidir. Resmi lise mezunları arasında prestijli üniversite kazananların sadece yüksek ailevi kurumsal kültürel sermayeye sahip katılımcılar olması da kültürel sermayenin eğitim stratejileri üzerindeki belirleyiciliğini göstermektedir. Sonuç olarak kültürel sermaye, ilkökul seçiminden yükseköğretim kurumu tercihinde kadar devam eden eğitim sürecindeki öğrenciler arası eşitsizliğin yeniden üretiminde önemli roller oynamaktadır.

**Ethics Committee Approval:** The interview form was approved as ethically appropriate by the Dokuz Eylül University Social and Human Sciences Scientific Research and Publication Ethics Committee on 22/02/2023.

**Informed Consent:** Informed consent was obtained from the participants.

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| Authors         | Contact                                                               |
|-----------------|-----------------------------------------------------------------------|
| Cem Serkan Atlı | Dokuz Eylul University, Turkey.<br>E-mail: cemserkan.atli@deu.edu.tr. |
| Yıldız Akpolat  | Dokuz Eylul University, Turkey.<br>E-mail: yildiz.akpolat@deu.edu.tr. |

Annex. Information about the participants interviewed

Table 2.

Information of the Interviewees

| Cod | Gender | Age | High School          | Educational Status of Participants | Professional Status of Participants | Educational Status of Mother | Professional Status of Mother   | Educational Status of Father | Professional Status of Father   |
|-----|--------|-----|----------------------|------------------------------------|-------------------------------------|------------------------------|---------------------------------|------------------------------|---------------------------------|
| P1  | Female | 26  | İzmir Kız Lisesi     | Bachelor Degree                    | Professionals                       | High School                  | Housewife                       | High School                  | Service and Sales Workers       |
| P2  | Male   | 32  | 50. Yıl Lisesi       | Postgraduate                       | Professionals                       | High School                  | Office and Support Workers      | High School                  | Office and Support Workers      |
| P3  | Male   | 30  | Karataş Lisesi       | Bachelor Degree                    | Professionals                       | Primary School               | Housewife                       | High School                  | Office and Support Workers      |
| P4  | Female | 34  | 50. Yıl Lisesi       | Bachelor Degree                    | Professionals                       | Bachelor Degree              | Housewife                       | High School                  | Office and Support Workers      |
| P5  | Female | 28  | İzmir Kız Lisesi     | Postgraduate                       | Professionals                       | High School                  | Service and Sales Workers       | Bachelor Degree              | Professionals                   |
| P6  | Female | 40  | Konak Anadolu Lisesi | Bachelor Degree                    | Professionals                       | Bachelor Degree              | Professionals                   | Bachelor Degree              | Professionals                   |
| P7  | Female | 28  | Konak Anadolu Lisesi | Bachelor Degree                    | Professionals                       | Bachelor Degree              | Professionals                   | Bachelor Degree              | Professionals                   |
| P8  | Female | 30  | İzmir Kız Lisesi     | Bachelor Degree                    | Professionals                       | Bachelor Degree              | Professionals                   | Bachelor Degree              | Professionals                   |
| P9  | Male   | 22  | İzmir Kız Lisesi     | High School                        | Professionals                       | Bachelor Degree              | Professionals                   | Bachelor Degree              | Tradespeople and Menial Workers |
| P10 | Male   | 46  | Karataş Lisesi       | Bachelor Degree                    | Professionals                       | High School                  | Housewife                       | High School                  | Service and Sales Workers       |
| P11 | Female | 34  | İzmir Kız Lisesi     | Postgraduate                       | Professionals                       | High School                  | Housewife                       | Bachelor Degree              | Professionals                   |
| P12 | Male   | 22  | Konak Anadolu Lisesi | High School                        | Student                             | Primary School               | Tradespeople and Menial Workers | Middle School                | Tradespeople and Menial Workers |
| P13 | Female | 22  | Konak Anadolu Lisesi | Bachelor Degree                    | Professionals                       | High School                  | Technicians                     | High School                  | Office and Support Workers      |
| P14 | Female | 30  | Konak Anadolu Lisesi | Postgraduate                       | Professionals                       | High School                  | Tradespeople and Menial Workers | Primary School               | Tradespeople and Menial Workers |

|     |        |    |                      |                  |                                 |                 |                                 |                 |                                 |
|-----|--------|----|----------------------|------------------|---------------------------------|-----------------|---------------------------------|-----------------|---------------------------------|
| P15 | Male   | 26 | 50. Yıl Lisesi       | Bachelor Degree  | Professionals                   | High School     | Office and Support Workers      | High School     | Office and Support Workers      |
| P16 | Male   | 40 | Karataş Lisesi       | Bachelor Degree  | Professionals                   | Primary School  | Housewife                       | Illiterate      | Tradespeople and Menial Workers |
| P17 | Female | 43 | 50. Yıl Lisesi       | Bachelor Degree  | Professionals                   | Middle School   | Housewife                       | Middle School   | Tradespeople and Menial Workers |
| P18 | Female | 37 | Karataş Lisesi       | Bachelor Degree  | Service and Sales Workers       | High School     | Tradespeople and Menial Workers | High School     | Tradespeople and Menial Workers |
| P19 | Male   | 44 | 50. Yıl Lisesi       | Postgraduate     | Professionals                   | Primary School  | Housewife                       | Primary School  | Tradespeople and Menial Workers |
| P20 | Male   | 20 | 50. Yıl Lisesi       | High School      | Tradespeople and Menial Workers | Primary School  | Housewife                       | Primary School  | Tradespeople and Menial Workers |
| P21 | Male   | 27 | Karataş Lisesi       | Bachelor Degree  | Service and Sales Workers       | High School     | Technicians                     | High School     | Service and Sales Workers       |
| P22 | Female | 47 | 50. Yıl Lisesi       | Associate Degree | Service and Sales Workers       | Primary School  | Housewife                       | Primary School  | Tradespeople and Menial Workers |
| P23 | Male   | 43 | Saint-Joseph Lisesi  | Bachelor Degree  | Managers                        | Bachelor Degree | Professionals                   | Bachelor Degree | Professionals                   |
| P24 | Male   | 46 | Saint-Joseph Lisesi  | Bachelor Degree  | Managers                        | High School     | Housewife                       | High School     | Managers                        |
| P25 | Female | 22 | Tevfik Fikret Lisesi | High School      |                                 | Bachelor Degree | Housewife                       | Bachelor Degree | Managers                        |
| P26 | Male   | 43 | Amerikan Koleji      | Postgraduate     | Managers                        | Bachelor Degree | Professionals                   | Bachelor Degree | Professionals                   |
| P27 | Female | 43 | Tevfik Fikret Lisesi | Bachelor Degree  | Professionals                   | Bachelor Degree | Professionals                   | Bachelor Degree | Managers                        |
| P28 | Male   | 37 | İzmir Türk Koleji    | Postgraduate     | Managers                        | Bachelor Degree | Professionals                   | Bachelor Degree | Office and Support Workers      |
| P29 | Female | 31 | İzmir Türk Koleji    | Postgraduate     | Professionals                   | Bachelor Degree | Professionals                   | High School     | Managers                        |
| P30 | Male   | 44 | Tevfik Fikret Lisesi | Postgraduate     | Professionals                   | Postgraduate    | Professionals                   | Postgraduate    | Professionals                   |

|     |        |    |                      |                 |               |                  |                            |                  |               |
|-----|--------|----|----------------------|-----------------|---------------|------------------|----------------------------|------------------|---------------|
| P31 | Female | 31 | Saint-Joseph Lisesi  | Bachelor Degree | Managers      | Postgraduate     | Managers                   | Bachelor Degree  | Managers      |
| P32 | Male   | 20 | Saint-Joseph Lisesi  | High School     | Student       | Bachelor Degree  | Managers                   | Bachelor Degree  | Managers      |
| P33 | Female | 37 | Saint-Joseph Lisesi  | Postgraduate    | Professionals | Bachelor Degree  | Professionals              | Bachelor Degree  | Professionals |
| P34 | Female | 23 | Amerikan Koleji      | Postgraduate    | Student       | Bachelor Degree  | Managers                   | Bachelor Degree  | Managers      |
| P35 | Male   | 32 | Amerikan Koleji      | Bachelor Degree | Managers      | High School      | Housewife                  | High School      | Managers      |
| P36 | Male   | 28 | Saint-Joseph Lisesi  | Bachelor Degree | Managers      | Postgraduate     | Professionals              | Primary School   | Managers      |
| P37 | Female | 34 | Amerikan Koleji      | Postgraduate    | Managers      | Bachelor Degree  | Managers                   | Bachelor Degree  | Managers      |
| P38 | Male   | 22 | Tevfik Fikret Lisesi | High School     | Student       | High School      | Housewife                  | Bachelor Degree  | Managers      |
| P39 | Male   | 29 | İzmir Türk Koleji    | Bachelor Degree | Professionals | Bachelor Degree  | Professionals              | Bachelor Degree  | Professionals |
| P40 | Male   | 27 | İzmir Türk Koleji    | Postgraduate    | Professionals | Associate Degree | Office and Support Workers | Associate Degree | Technicians   |
| P41 | Female | 28 | İzmir Türk Koleji    | Postgraduate    | Professionals | Bachelor Degree  | Professionals              | Bachelor Degree  | Professionals |
| P42 | Female | 45 | Amerikan Koleji      | Bachelor Degree | Managers      | High School      | Professionals              | Postgraduate     | Managers      |
| P43 | Male   | 37 | Tevfik Fikret Lisesi | Postgraduate    | Professionals | Bachelor Degree  | Housewife                  | Bachelor Degree  | Professionals |
| P44 | Female | 37 | İzmir Türk Koleji    | Postgraduate    | Professionals | Bachelor Degree  | Housewife                  | Postgraduate     | Managers      |
| P45 | Female | 28 | Amerikan Koleji      | Postgraduate    | Managers      | Bachelor Degree  | Managers                   | Bachelor Degree  | Managers      |

# A Qualitative Analysis of Students' Experiences with Emotional Design in Multimedia\*

Ahmet Murat Uzun\*\*, Zahide Yıldırım\*\*\*

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## Abstract

For years, cognitive theories of multimedia learning have been used as the dominant theoretical framework in research on multimedia learning. In recent years, there have been significant developments in affective theories, and researchers have now started to consider the role of emotion and motivation in learning. This study explores students' views on using emotional design in multimedia learning. Students were taught with different multimedia learning materials on the topic of "work, energy, and energy conservation," which were identical in terms of the content but different in terms of the extent of emotional design elements. A qualitative study was implemented. Semi-structured in-depth interviews were conducted with 28 interviewees who used the learning materials. Based on content analysis, two main categories appeared: "Emotional Aspect of Multimedia Learning" and "Cognitive Aspect of Multimedia Learning." It was found that students had different views regarding using emotional design. The "Emotional Aspect of Multimedia Learning" category contained emotional design principles such as color, facial expressions, and sound effects. The "Cognitive Aspect of Multimedia Learning" category included cognitive elements such as interactive questions and exercises, cognitive interest, the multimedia principle, real-life examples, animations, and signaling. Results were discussed along with different opinions about emotional design in multimedia.

**Keywords:** Multimedia, emotional design, emotions, cognitive load.

## About the Article

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\*\*  Corresponding Author: Afyon Kocatepe University, Faculty of Education, Turkey, auzun@aku.edu.tr.

\*\*\*  Middle East Technical University, Faculty of Education, Turkey, zahidey@metu.edu.tr.

## Introduction

Efforts to make multimedia materials more interesting have always been the subject of controversies in the literature. According to the cognitive theory of multimedia learning, interesting but irrelevant features may interfere with learning (e.g., seductive details), which increases the load on working memory (Harp & Mayer, 1997, 1998). On the other hand, even though interesting design elements might hurt learning, their motivational benefits cannot be denied (Harp & Mayer, 1998; Park, Flowerday, et al., 2015). Considering this, researchers now do not underestimate the role of affective processing in learning and suggest cognitive-affective theories of learning, such as the cognitive-affective theory of learning with media (CATLM) (Moreno, 2006, 2007), the integrated cognitive-affective model of learning with multimedia (ICALM) (Plass & Kaplan, 2016), and the cognitive-affective model of e-learning (CAME) (Mayer, 2020). Consistent with these theories, recently, emotional design in multimedia has been offered as a new method (Heidig et al., 2015; Liew et al., 2022; Plass et al., 2014; Um et al., 2012; Wang et al., 2023). Unlike seductive details, the emotional design does not impose extra details but minimally manipulates the intrinsic design features using relevant features to foster positive emotions and learning (Heidig et al., 2015; Zhao & Mayer, 2023). The most frequently used emotional design techniques are attention-capturing bright and saturated colors, anthropomorphism, and baby face bias. Emotional design is a significant topic, but the results are mixed (Brom et al., 2018; Stárková et al., 2019).

Um et al. (2012) implemented one of the first studies on emotional design. They created two materials. The neutral design included a black-and-white scheme with no emotional design. In contrast, emotional design included anthropomorphic images (attributing human-like characters to non-humans), attention-capturing color combinations, and baby faces. Results demonstrated that Emotional Design students performed better on the achievement test. In a subsequent investigation, Plass et al. (2014) discovered that positive emotions facilitated cognitive processing and increased comprehension.

Mayer and Estrella (2014) revealed that the emotional design group outperformed the neutral design group regarding learning outcomes. Park, Knörzer, et al. (2015) demonstrated that anthropomorphism captured learners' attention in their eye-tracking study. Brom et al. (2016) indicated that anthropomorphism affected surface learning, functioning as clues to recall information. Stárková et al. (2019) observed that anthropomorphism did not affect learning outcomes and slightly affected attention allocation. Shangguan, Wang, et al. (2020) reported no main effect of emotional design on achievement (experiment 1). In light of Bülbül and Kuzu's (2021) findings, emotional animations increased the transfer score. Finally, while Slabbert et al. (2022) found no significant effect of emotional design on achievement, Wang et al. (2023) demonstrated that the colorful and anthropomorphism design yielded better transfer scores.



Despite emotional design suggesting a new means of affective design, the literature produced mixed results, and how emotional design affects learning is still unknown (Stárková et al., 2019). Furthermore, research in this area has mostly adopted quantitative between-group comparison designs to investigate the phenomena. To the best of our knowledge, only a few studies (e.g., Brom et al., 2016) employed a qualitative design. Therefore, we aim to provide a detailed interpretation of how students felt when they utilized multimedia with emotional design, with the help of qualitative design.

This study aims to understand student experiences taught by multimedia materials adopting different levels of emotional design. The following research question was posed:

- “What are students’ views about using emotional design in multimedia learning?”

## Methodology

### Design of Learning Materials

Four instructional multimedia programs adopting different emotional design principles were developed. The unit “Work, Energy, and Energy Conservation” was addressed. This unit was addressed by the science curriculum in seventh grade published by the Turkish Ministry of National Education (Milli Eğitim Bakanlığı [Ministry of National Education], 2015).

Design principles of cognitive load theory (Paas & Sweller, 2014) and cognitive theory of multimedia learning (Mayer, 2009) were used in designing multimedia artifacts. We regularly conferred with an instructional designer, two subject area experts, and five science teachers to ask for their advice regarding the development of the materials. We followed an iterative process during the design.

We used the Neutral Design (ND) approach for the first material. We used animated drawings with only a black-and-white color scheme with an audio narration. Human characters in the material had neutral faces.

The second material was developed according to Colorful Design (CD); attention-grabbing, bright, and saturated color combinations were used instead of the black-and-white color scheme. Additionally, human characters had neutral faces, and no faces (anthropomorphism) were used for the lifeless characters.

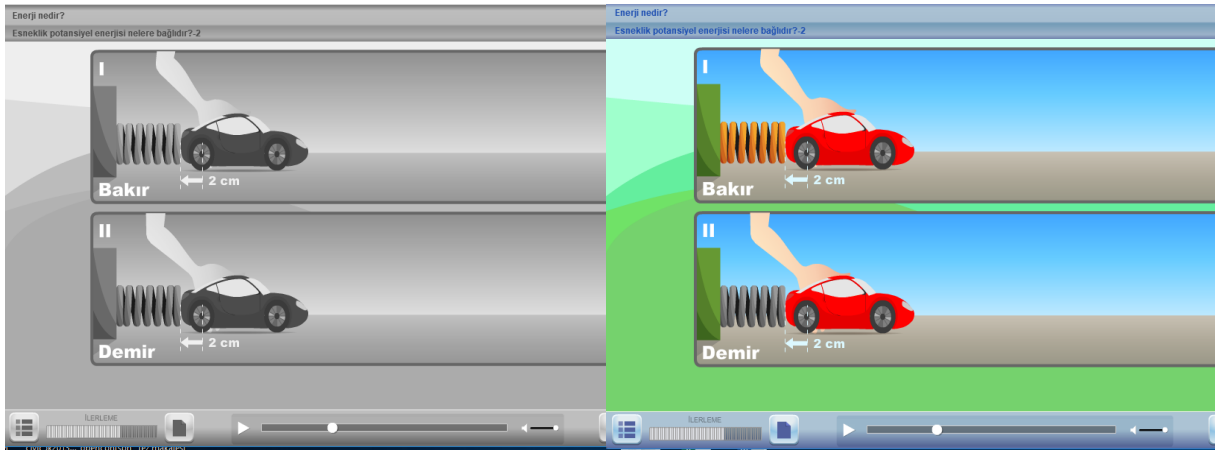
Anthropomorphic Design (AD) was applied to the third material. Expressive faces were adopted for lifeless objects. Additionally, for humans, positive faces were applied. Consider an object being lifted to a certain height. Because of the rise in gravitational energy, the smiling of the object also changed. For the AD group, the human characters

were depicted with having positive -facial expressions as well. Yet, they were changing based on the tasks they were performing.

The last material applied the Anthropomorphic Design and Sound Effects (ADSE) approach. This material was the same as in AD, except that contextual cartoonistic sound effects were used. Sample screenshots are provided in Figure 1.

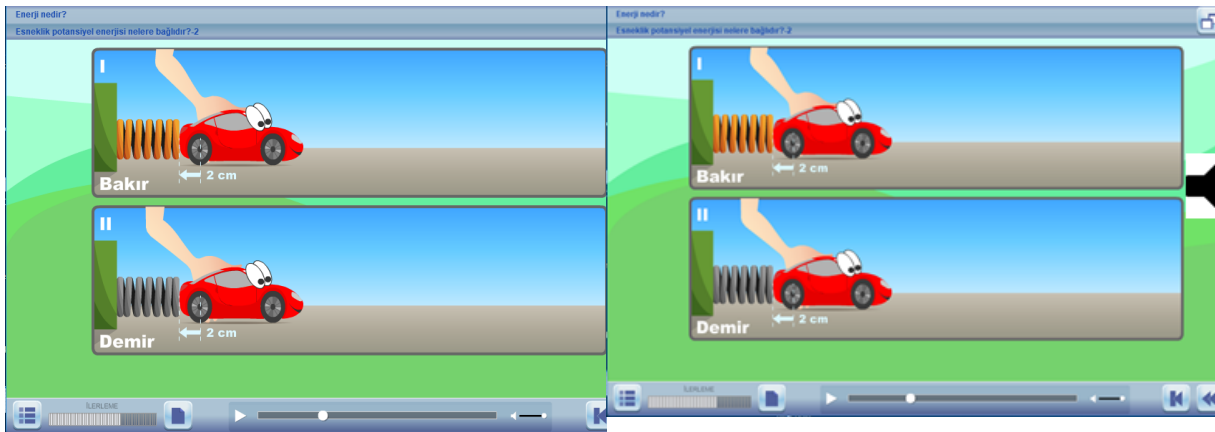
**Figure 1**

*Sample screenshots*



**ND**

**CD**



**AD**

**ADSE**

## Design and Participants

The study employed a qualitative research design. More specifically, a phenomenological research design was utilized to delve into students' experiences with emotional design and their meaning to this phenomenon. Students' experiences were

gathered through face-to-face, in-depth interviews. The school where the investigation was carried out had 14 classes, and four were selected for the study. The students followed multimedia course content for three weeks (one session per week) based on the duration suggested by the curriculum. For the first and second sessions, students studied the material for a one-hour class period. The third week's material lasted for an half-hour class period. Each class used a different version of the multimedia materials and was selected randomly. Based on purposeful sampling, more specifically, maximal variation sampling, only some students were recruited from the 7th graders for the interviews. The sample included 15 boys and 13 girls. Students were chosen based on their post-achievement scores and gender. First, for each condition (ND, CD, AD, and ADSE), we calculated learning achievement scores, and we analyzed students as low, average, and high achievers based on the means and standard deviations. Second, one female student and one male student were designated among each success group. Four students (ND = 2, AD = 1, and ADSE = 1) with different characteristics concerning pre- and post-achievement scores were also selected for the interviews. As a result, 28 students (ND = 8, CD = 6, AD = 7, and ADSE = 7) were chosen for all conditions for face-to-face interviews. The interview took approximately 15 minutes to implement.

### **Data Collection Instrument**

A semi-structured interview protocol was administered during the interview, which included student perceptions on emotional design, the components of instructional content that learners enjoyed best and worst, their degrees of involvement with the course, factors that facilitated or hindered their learning, and how they sensed while taking the material. The advice of three professionals was sought to create the interview protocol. A pilot investigation was carried out involving two different learners to check the comprehensibility of the interview items. The data collection tool involved seven open-ended questions with probes. A sample question was: "What was your favorite or most enjoyable part(s) of the educational software? Why?"

### **Data Analysis**

An iterative, sequential, and comparative analysis perspective was implemented to analyze the data. Content analysis was utilized for coding the data and creating the themes (Fraenkel et al., 2012). A theory-driven approach was adopted to code the data. The inter-coder reliability formula was applied to calculate the reliability. Six interviewees' data (20 %) was coded independently by an expert in the field. Then, we came together with an expert to discuss the codes. Inter-coder reliability was computed based on Miles and Huberman's (1994) formula:

$$\text{inter - coder reliability} = \frac{\text{number of agreements}}{\text{number of agreements} + \text{number of disagreements}}$$

Inter-coder reliability was found to be 84.7. To Miles and Huberman (1994), values over .80 or above are acceptable.

### **Trustworthiness and Ethics**

To satisfy the credibility of the data, we applied methods such as prolonged engagement, purposeful sampling, peer examinations, and expert reviews. We ensured prolonged engagement, as the students and we knew each other for a sufficient time (three weeks of implementation time). By purposeful sampling (maximal variation), we aimed to obtain a more accurate representation of reality. To control the content validity and congruence of qualitative questions, three experts reviewed the interview protocol iteratively during the design and development phases of the protocol. Another approach that we used was the peer check. As Ruona (2005) suggested, we asked one of our colleagues to interpret the findings during various stages of the qualitative analysis. We achieved dependability (reliability) by inter-coder reliability analysis. To increase the transferability of the data, categories and sub-categories derived from the data were tabulated. Furthermore, direct quotations of interviewees' responses were included in the analysis report.

Before conducting the study, we consulted the university's applied ethics research center. After evaluation, the human research committee decided that the research did not include any ethical violations and gave the necessary approval. Only volunteer students participated in the study, and students' responses were kept confidential, and the results were used only for scientific purposes. The research report did not include any participants' identities.

At the beginning of the study, the students were given information about the researcher's role. They were informed that they received the course as a part of the research study. Students received the instruction for three weeks, and the researcher helped them if they faced any difficulties. After the instructional process ended, researchers conducted face-to-face semi-structured interviews with students. In this phase, the researchers endeavored to cultivate a close, trusting, intimate, warm, and empathetic relationship between the interviewer and the interviewees to get accurate responses to the questions being asked (Yıldırım & Şimşek, 2011).

## **Findings**

Content analysis revealed two main categories, one of which was named "Emotional Aspect of Multimedia Learning," whereas the other was called "Cognitive Aspect of Multimedia Learning." Codes, coding frequencies, sub-categories, and categories are given in Table 1 and Table 2.

**Table 1**

*Category of “Emotional Aspect of Multimedia Learning,” Related Sub-Categories, and Coding Frequencies*

| Categories         | Codes                                           | Cases (N)                | Counts (f) |    |
|--------------------|-------------------------------------------------|--------------------------|------------|----|
| Color              | Appealing/Pleasing                              | 15                       | 21         |    |
|                    | Attention Grabbing                              | 10                       | 15         |    |
|                    | Boring                                          | 5                        | 6          |    |
|                    | Facilitating                                    | 2                        | 4          |    |
|                    | Neutral                                         | 1                        | 1          |    |
|                    | Distracting                                     | 1                        | 1          |    |
| Facial Expressions | Facial Expressions of Human Characters          | Positive Energy          | 5          | 5  |
|                    |                                                 | Interesting              | 3          | 3  |
|                    |                                                 | Facilitating             | 2          | 2  |
|                    |                                                 | Attention Grabbing       | 2          | 2  |
|                    | Expressive Anthropomorphism of Lifeless Objects | Distracting              | 6          | 11 |
|                    |                                                 | Entertaining             | 6          | 6  |
|                    |                                                 | Attention Grabbing       | 5          | 6  |
|                    |                                                 | Facilitating             | 5          | 6  |
|                    |                                                 | Being Redundant / Absurd | 5          | 6  |
|                    |                                                 | Interesting              | 5          | 5  |
|                    |                                                 | Appealing/Pleasing       | 4          | 5  |
| Sound Effects      | Appealing/Pleasing                              | 8                        | 9          |    |
|                    | Distracting                                     | 6                        | 8          |    |
|                    | Sense of Reality                                | 6                        | 7          |    |
|                    | Attention Grabbing                              | 4                        | 5          |    |
|                    | Neutral                                         | 3                        | 4          |    |
|                    | Disturbing                                      | 2                        | 5          |    |

**Table 2**

*Category of “Cognitive Aspect of Multimedia Learning” and Coding Frequencies*

| Codes                               | Cases (N) | Counts (f) |
|-------------------------------------|-----------|------------|
| Interactive Exercises and Questions | 18        | 28         |
| Cognitive Interest                  | 11        | 20         |
| Multimedia Principle                | 12        | 17         |
| Real-Life Examples                  | 8         | 11         |
| Animations                          | 6         | 7          |
| Signaling                           | 3         | 4          |

### Emotional Aspects of Multimedia Learning

Students’ opinions regarding emotional design approaches, such as attention-grabbing color combinations, facial expressions, and sound effects, were discussed in this

category. Hence, three sub-categories were formed: "Color," "Facial Expressions," and "Sound Effects." The sub-category of "Facial Expression" was further divided into two new sub-categories: "Facial Expression of Human Characters" and "Expressive Anthropomorphism of Lifeless Objects."

## Color

The most frequent code ( $f = 21$ ) in this category was the perception of being "Appealing/Pleasing" of the colors. Students ( $N = 15$ ) thought that colors were pleasant, and the use of attention-grabbing colors made multimedia materials seem more vivid. In particular, some students stated that warm colors such as red, orange, and yellow look much "sweeter" than other colors. For instance, student 18 spoke:

*Red. I mean, it cheers [me] up. I like the light red very much. I mean, it makes one's eyes open and the like. So, that is why. People would be willing to do so. They understand more and comprehend more; that is why people hate dark colors. The color red stimulates appetite also.*

The same student voiced:

*Brown comes a little bit dark. Children love bright colors and the like.*

The second most frequent code ( $f = 15$ ) was the perception of being "Attention Grabbing" of the colors. Students ( $N = 10$ ) indicated that the use of bright, saturated, and vivid colors in multimedia had the effect of grabbing their attention. For this effect, "catching the eye," "being salient," "hanging out in the eye," "watching out," "focusing," and "being on the focus" are some of the statements referred to by the students. One student voiced:

*Student 9: Since the colors are catching the eye, since they are attention-grabbing colors, you are not bored. At least, you are focusing only there. You know. [not] to another thing. For example, if the colors were more boring and monotonous, people would be bored if you asked me. I would look elsewhere willy-nilly. But since the colors are attention-grabbing, people inevitably feel they should listen and look at the lesson.*

The third frequent code ( $f = 6$ ) was the perception of being "Boring" by the gray-scale color scheme. Students ( $N = 5$ ) thought using gray-scale color was boring and did not look pretty. These students specified that a more colorful approach would be more beautiful and meaningful than the gray-scale scheme since it made them feel bored. In this regard, one student voiced:

*Student 6: If colorful [scheme] was used... It would not bore me, then. It was like a dark room. I don't know if I am wrong, but I think that way.*

Two students thought using bright, saturated, and attention-grabbing colors acted as a "Facilitating" role for their learning ( $f = 4$ ). Such colors were helpful to these students because they helped them "remember" and "comprehend" the various parts of the lesson. Colors had an effect of "sticking in mind" and "retrieving the information in the exams." For example, one student said:

*Student 14: Well, visuals. The purpose is human. Visuals open the human mind. Retrieves [information] during the exam. I mean, If it is colorless, it [information] does not come to my mind personally. Therefore, I use colored pencils for writing in my notebook as well.*

One student had a position of being “Neutral” ( $f = 1$ ) and specified that bright, saturated, and attention-grabbing colors did not possess any meanings, either positive or negative, for them:

*Student 17: [Studying with a gray-scale color scheme] did not affect me under any circumstances. It would be the same thing whether it was colorful or colorless.*

Last, one student stated that bright, saturated, and attention-grabbing colors had a “Distractive” effect on their attention ( $f = 1$ ). Therefore, the gray-scale color scheme was preferable to the colorful one. The student said:

*Student 25: I would concentrate more on what was being taught if it were colorless. I mean, I would prefer the colorless one.*

## Facial Expressions

Since both lifeless objects and humans were used as characters, the category of “Facial Expressions” was divided into “Facial Expression of the Human Characters” and “Expressive Anthropomorphism of the Lifeless Objects.”

### Facial Expression of Human Characters

Five students specified that using expressive and positive smiling facial expressions for human characters induced “Positive Energy” ( $f = 5$ ). They believed that the smiling faces used for the human characters made them also smile and be happy. For example, one student commented:

*Student 13: If they [the character] smile, it is possible that I may smile and have a feeling of being happy towards them as well, but if they do not smile, it is quite colorless. For example, if the facial expressions were bad, it would affect me worse. I watched more and understood more. I do not lean that way if the character is not smiling.*

Some of the students ( $N = 3$ ) thought that the happy facial expressions used for the human characters were “Interesting” ( $f = 3$ ). Thanks to these happy facial expressions, these students got more interested in the lesson, which made them watch and listen more. One student stated:

*Student 19: They approached more cheerfully and looked warmer. [They] behaved warmer. Behaving warmer would attract my interest more. I would listen better. I would try to understand better.*

Some students ( $N = 2$ ) stated that facial expressions used for human characters were useful for having a “Facilitating” effect on learning ( $f = 2$ ). Facial expressions, changing in compliance with the characters’ actions, helped them understand the lesson. In other words, students thought they established connections between the expressive facial expressions and the characters’ actions. For example, one of the students voiced:



*Student 9: For example, the lifeless object does not do work scientifically when it is taking boxes forward; in that time, their facial expression became sad; we can remember from that. It makes associations. Like lifeless creatures, they [humans] smile when anything happens and become sad when nothing happens. But, they were nice, since they were generally smiling.*

Two students thought that expressive facial expressions used for humans had the effect of being “Attention Grabbing” ( $f = 2$ ). For example, one student stated:

*Student 23: For example, The smile of this cook and the like was nice... Because, how can I say, at that time [when he was not smiling], it would not capture my attention. Now it does.*

### Expressive Anthropomorphism of the Lifeless Objects

The sub-category “Expressive Anthropomorphism of Lifeless Objects” involved students’ views about using humanoid features for lifeless objects. The most frequent code ( $f = 11$ ) was “Distracting” from using such an approach. Six students thought this approach negatively affected them since they perceived it as distracting. Students stated that their attention was shifted towards expressive anthropomorphism, which was supposed to focus on what was being taught. In other words, students argued that their attention was supposed to be directed toward the essential elements of the lesson, not to the expressive anthropomorphism used for the lifeless objects. In this regard, one student indicated:

*Student 14: The first time I saw them, they did not capture my interest at all, but then, I started to watch their faces. They captured my attention the second and third times, but at first, they did not capture my attention. I could say that I did not even realize that there were faces. As I listened, I paid attention to the details. They started to distract me.*

Another student commented on their thoughts as follows:

*Student 6: But how can I concentrate now? Look at the eyes; it seems as if they are looking at me. It got my nerves. It got my nerves on looking at the eyes. Therefore, the other one is better.*

Six students perceived expressive anthropomorphism as “Entertaining” ( $f = 6$ ). Students believed that the funny faces used for the lifeless objects made the lesson more humorous and entertaining, which would otherwise be otherwise boring and monotonous. These students also added that expressive anthropomorphism helped them learn the subject with fun. In this regard, one of the students expressed their thoughts as follows:

*Student 9: If my memory serves me right, the first topic was doing work scientifically. When doing work, there was a happy face; when not doing work, there was a sad face. That is, it is like learning by fun.*

Five students found anthropomorphism as “Attention Grabbing” ( $f = 6$ ). For those students, thanks to anthropomorphism, they could easily give their focus to the lesson since it may prevent them from giving their attention to other things. For example, one student said:

*Student 4: For example, assuming that if a student watched the lesson without faces like these [anthropomorphism], they would give their attention to other things. But, when there are faces on*

*the boxes, it becomes more. It could be focused more on the lesson. That is, it captures attention more.*

Five students stated that anthropomorphism had the role of “Facilitating” their learning ( $f = 6$ ). To these students, the anthropomorphism of the lifeless objects by using expressive facial expressions helped them learn the topic being taught. Students indicated that thanks to the facial expressions, they could establish the connection between the object’s facial expressions and what was being taught. For example, one of the students voiced:

*Student 7: When the ball was released, for example, there was a sad facial expression on the ball’s face. I understood from their energies. The facial expressions affect me positively. There was a smiling face when the ball was heightening; while it was lowering, it became a sad face. I was impressed by the energy. It calls to my mind from the facial expression.*

Five students thought that the use of anthropomorphism for lifeless objects was “Redundant / Absurd” ( $f = 6$ ). These students thought that anthropomorphism did not have any relationship with what was being taught and defined such an approach as being “redundant” and “repelling.” For example, students said:

*Student 24: These are a bit absurd. Is it normal to keep an eye on the car?*

*Student 11: These are not related to the subject being “taught.”*

*Student 14: Yes. Humans are quite weird, and I hated that truck. [I mean] the transporter truck. The type of it makes me very weird, and these boxes are quite repelling. Because their faces were changing, it was nice, but some of them were really exaggerated. Some of them looked good, and some of them were really exaggerated.*

Five students found the anthropomorphism “Interesting” ( $f = 5$ ). These students thought it would be more interesting for children to use such approaches in multimedia than ordinary ones. For instance, some of the students commented that:

*Student 5: For example, they made this alive. They made eyes for this. It would attract children’s interest more in this way.*

*Student 19: Having a face for the lifeless objects is better. Because as I said a while ago, it would capture more interest.*

Four students perceived anthropomorphism as “Appealing/Pleasing.” ( $f=5$ ). These students mentioned the appealing, pleasing, and cheerful effects of anthropomorphism:

*Student 15: For example, the ball dropped and sank into the sand. Therein, they were smiling at first, and then they became sad faces. They were nice. They were beautiful. That is, it gives pleasure to people; it appeals to people.*

*Student 7: The smiling forklift and smiling box show us that we understand and become happy. It was pleasing for me, [it was] nice. There were no such approaches in the books.*

## Sound Effects

This category involved student opinions regarding contextual sound effects, which were heard while objects moved. In this category, most of the students ( $N = 8$ ) perceived sound effects as being “Appealing/Pleasing” ( $f = 9$ ). For example, students said:

*Student 1: Sound effects look appealing. Look appealing. I mean, it looks nice. It was funny.*

*Student 3: [Soundless version] bores the people after a particular time as was being watched. It would be better if it included a little bit of sound effects.*

Some of the students ( $N = 6$ ) thought that sound effects had the negative effect of being “Distracting” ( $f = 8$ ). They indicated that they experienced difficulties focusing on the audio narration and missed some elements of the instruction because of the sound effects. One student commented:

*Student 14: When following the sound effects, people are not able to listen [instruction]. I believe that they are distracting attention. I mean, we already know the visuals. They are entertaining, but I feel that I do not understand. I do not understand. I do not know what the others think.*

Some of the students ( $N = 6$ ) indicated that using sound effects in multimedia was beneficial in that they augmented the “Sense of Reality” ( $f = 7$ ). More specifically, students thought that sound effects made the animations more realistic by providing a similar means to real life. One of the students commented:

*Student 2: Sounds have been tried to be simulated. They have been tried to be simulated with the original forms. It approximated the originals; it was nice. For example, when we kick the ball, a sound effect like a crash is heard, and the same sound is heard there, [such as] a rolling sound, clinking sound. A booming sound is heard when dropping, for instance.*

Four students indicated that sound effects were beneficial since they had “Attention-grabbing” effects ( $f = 5$ ). These students thought that the course captured their attention with the help of sound effects when they were distracted or bored from watching the lesson. For example, one of the students commented:

*Student 9: It is like colors. When there is a sound effect, when you are bored a little bit, when a sound effect is heard suddenly, your eyes go directly there.*

Three students took a “Neutral” position against using sound effects ( $f = 4$ ). Students specified that nothing would change for themselves in any usage, either multimedia with sound effects or without sound effects.

*Student 8: Hmmm, I do not know. Sound effects do not matter to me a lot. Facial expressions and colors are helping me sufficiently. Anyway, we are seeing. It is the same for me, with or without sound effects; it does not matter.*

Lastly, two students found the sound effect “Disturbing” ( $f = 5$ ). In this regard, one of the students stated:

*Student 15: I mean, it is very, both it sounds a lot and, how can I say? It is disturbing. I mean, it is redundant. I found the sound effects redundant.*

## Cognitive Aspects of Multimedia Learning

This category involved student opinions addressing the cognitive design elements used in multimedia. The most frequent code was “Interactive Exercises and Questions” ( $f = 28$ ). This category included student views regarding using interactive exercises, questions, and worked examples in multimedia. Students ( $N = 18$ ) reflected that using interactive examples, exercises, and worked examples in multimedia instructional materials helped them focus more efficiently on the subject, reinforced what was being taught in the instruction phase, and facilitated their learning. For example, one student commented:

*Student 20: For example, it gives an example, and after that, there is something of a question under it. For example, if you reinforce them, they actually become nice. Teaching and teaching, for example, and after that, there were questions like “Which of them were doing work scientifically?” They reinforced that they were good.*

The second most repetitive code was “Cognitive Interest” ( $f = 20$ ). Students ( $N = 11$ ) reflected that they were not interested in emotional design elements used in multimedia at all. Instead, they stated that the topic captured their attention rather than emotional design and added that they became happy as they learned new things. For instance, one student voiced:

*Student 10: But they [emotional design elements] do not capture my attention; the lesson captures my attention directly. The colors are interesting, but the lesson itself captures attention more. For example, I am just looking at these [To the important parts]. Is it five kilos or two kilos? Other parts seem uninteresting to me.*

Another student commented:

*Student 3: Anyway, since the purpose is learning, I do not remark on colors at all. Why was this like that? I am not watching it to say I wish it would be different, but I watch to learn.*

Another code under the category was “Multimedia Principle” ( $f = 17$ ). Students ( $N = 12$ ) thought that the use of words along with either static or dynamic visuals was more beneficial than instructional materials that adopted words only. They indicated that they enjoyed using such an approach in multimedia, which facilitated their learning. For example, one student stated:

*Student 3: For example, if [the audio narration] said that the driving of a car, the acceleration of the car was the kinetic energy just by word, it would not be sufficiently ok. But here [in the instructional software], acceleration of the car or the like was depicted, supported with pictures. It became better.*

“Real-Life Examples” ( $f = 11$ ) was another cognitive element used. Students ( $N = 8$ ) expressed their satisfaction concerning the appropriateness of the characters and the related contexts to real life. They also indicated that using real-life examples was helpful, as they easily concretized abstract concepts. For example, one student voiced:

*Student 22: For example, experiments were conducted on real and simple objects we can find even at home. They were good as well. Additionally, the example of the marble dropping down to the sand taught the gravitational potential energy very well.*

One of the other design issues that were thought to have a cognitive influence on students was coded as “Animations” ( $f = 7$ ). Students ( $N = 6$ ) thought supporting what was being taught with animations facilitated their learning. For instance, one student voiced:

*Student 15: The movement of the humans, the drop of the ball, and the like helped us learn more about the movements.*

The same student stated their view on animations as follows:

*Student 15: For example, the cars and the like [other objects] were going..That was velocity. It was moving. It was [like] real; for example, the cars were like they were moving. I mean, it became as if it were real. They are facilitating. Then, the apple was dropping from the tree; they were nice.*

Last, the least frequent code was “Signaling” ( $f = 4$ ). Students ( $N = 3$ ) specified that they also liked signaling techniques to capture their attention to the most important parts of the instruction.

*Student 22: For example, with respect to the potential energy topic, with respect to elastic potential energy, for example, it was putting pressure on there. Therein, it was showing (signaling) the force with the arrow. I wish it would be a bit more colorful in the same vein.*

## Discussion and Conclusion

The current investigation aimed to obtain insight into the experiences of students who received instruction utilizing different multimedia. The qualitative data analysis indicated that the students possessed both positive and negative feelings regarding emotional design. Results revealed two main categories: “Emotional Aspect of Multimedia Learning” and “Cognitive Aspect of Multimedia Learning.”

Concerning color, as expected, students were satisfied with the use of bright, attention-grabbing, and saturated colors, as they indicated that such colors were “appealing,” “attention-grabbing,” and “facilitating.” Some students also believed the black-and-white color scheme was “boring.” On the other hand, only one student thought that bright, attention-grabbing, and saturated colors were “distracting.” In comparison, one student did not feel anything (neutral) about using such colors in multimedia. From this result, it could be argued that using attention-grabbing colors is helpful. They are related to perceived excitement (Wolfson & Case, 2000), increased attention (Al-Ayash et al., 2016), and memory encoding and retrieval (Shneiderman, 1992; Misanchuk et al., 2000, as cited in Lohr, 2007). Considering Facial Expressions, none of the students had negative feelings about using positive facial expressions for human characters. Students held the idea that “Facial Expressions of Human Characters” were “positively energizing,” “interesting,” “facilitating,” and “attention-grabbing.” This finding is consistent with Norman’s (2004) list of conditions that induce positive emotions: smiling faces induce positive emotions.

On the other hand, when it comes to “Expressive Anthropomorphism of Lifeless Objects,” most students found such an approach “distracting.” This finding confirms Brom et al. (2016), who found that those funny anthropomorphic elements may possibly distract learners, while contradicting Park, Knörzer, et al. (2015), who observed that the anthropomorphism captured learners’ attention. Shangguan, Gong, et al. (2020) suggest that emotional design might be more distracting for younger students as they have fewer capacities compared to older students. This effect might be more prominent if the prior knowledge is low. Nevertheless, one cannot clearly conclude that students’ attention was either captured by the learning content through anthropomorphism or by the anthropomorphism itself. More research is needed to pinpoint the mechanism underlying the attentional effect of anthropomorphism. Concerning anthropomorphism, some students also believed that such an approach was “redundant or absurd.” This belief is consistent with the idea that affective design elements could be extraneous and potentially deplete memory resources (Harp & Mayer, 1997, 1998). Other student beliefs about anthropomorphism were positive, indicating that anthropomorphism was “entertaining,” “attention-grabbing,” “facilitating,” and “interesting,” which are consistent with the findings of Brom et al. (2016). In sum, as Brom et al. (2016) concluded, anthropomorphic manipulations could affect the state engagement of students since they are funny and entertaining and could act as memory tools facilitating recall. On the other hand, they could be distractive in some cases. Concerning sound effects, the same trend was observed. While most of the students found the sound effects interesting as “appealing or pleasing,” increasing the sense of reality or attention-grabbing, some also taught that sound effects were distracting or disturbing, which may be explained by “a trade-off between cognitive distraction and the ability to induce state engagement” (Brom et al., 2016, p. 93).

When students were asked to evaluate their experiences regarding facilitating conditions of learning, students referred to their satisfaction with cognitive design elements used for all conditions, which was categorized as “Cognitive Aspect of Multimedia Learning.” Most students said they enjoyed interactive exercises and questions from multimedia materials. The second most repetitive code was Cognitive Interest. The multimedia principle, real-life examples, animations, and signaling were the other elements affecting students’ cognition. These cognitive elements were shown to facilitate learning, most related to multimedia learning (Mayer, 2009). Some students indicated that they were cognitively interested in the topic rather than emotional design elements, saying their job was to follow the course content. In other words, these students commented that their happiness was not a result of the emotional design features but rather a result of studying the topic and learning “new things.” Based on these results, Kintsch’s (1980) distinction between cognitive and affective interest might be reconsidered. Considering these students’ situation, as they progress in their learning, they pay greater attention to what they are studying and feel more engaged (Harp & Mayer, 1997). Customizing the learning environment to fit human cognitive mechanisms by minimizing working memory overload can improve learning (Darejeh et al., 2022).

To sum up, the results of the present work are consistent with the idea of a “double-edged sword” metaphor used for affective design elements by Sitzmann and Johnson (2014). On the one hand, our results support the idea that attractive things work better since they may induce positive emotions (Dong, 2007; Norman, 2004). On the other hand, they may also pose a danger to learning since they could be perceived as “Distracting,” “Disturbing,” or “Redundant.” More research is needed to clarify under which conditions affective design elements are perceived as helpful or useless. Additionally, instructional designers should carefully use affective design elements for multimedia materials. Designers of educational materials should work first and foremost to stimulate students’ cognitive interest. Emotional interest should be considered afterward. They should consider the potential benefits and pitfalls of such emotionally designed elements (Clark & Lyons, 2010). Given that the students have different views on using emotional design elements, personalized multimedia learning environments adopting choice-based emotional elements could be utilized to address students’ needs.

Our study undoubtedly has some limitations. First, one limitation lies in the fact that students’ views on the use of different emotional design elements were not linked to their learning achievement. Hence, the results should be evaluated within this boundary condition. Second, the study was conducted with a specific student group (seventh-grade students) addressing only one study topic (Work, Energy, and Energy Conservation), so more future research is needed in different context.



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## Genişletilmiş Türkçe Özet

Çoklu ortam öğretim materyallerini daha ilgi çekici hale getirme çabaları alan yazında her zaman tartışmalara konu olmuştur. Geçmişte yapılan ve Çoklu Ortamla Öğrenmenin Bilişsel Kuramını (ÇÖÖBK) (Mayer, 2009) temel alan çalışmalar ilginç ama öğrenme kazanımlarıyla doğrudan ilgili olmayan tasarım unsurlarının öğrenmeyi olumsuz bir şekilde etkilediğini ortaya koymuştur. Bunun nedenlerinden biri olarak da bu tasarım unsurlarının çalışan bellek kapasitesi üzerindeki yükü artırması görülmüştür (Harp & Mayer, 1997,1998). Öte yandan, araştırmacılar bu tasarım unsurlarının öğrenmeye zarar verme riskinin olmasına rağmen motivasyonel faydalarının yadsınamayacağını belirtmişlerdir (Harp & Mayer, 1998; Park, Flowerday, vd., 2015). Bu görüşten hareketle, geleneksel katı bilişsel yaklaşımların duygusal ve motivasyonel değişkenler bağlamında yeniden değerlendirilmesi gerektiği ifade edilmiştir. Buna bağlı olarak, son yıllarda Moreno (2006) "Medya ile Öğrenmenin Bilişsel-Duyuşsal Kuramını" (MÖBDK), Plass ve Kaplan (2016) "Çoklu Ortamla Öğrenmenin Bütünleşik Bilişsel-Duyuşsal Modelini" (ÇÖÖBBDM) ve Mayer (2020) "E-Öğrenmenin Bilişsel-Duyuşsal Modelini" (EBDM) önermişlerdir.

Bu kuramlarlar doğrultusunda, son zamanlarda çoklu ortam öğrenmede duygusal tasarım unsurlarının kullanılması, yeni bir yöntem olarak karşımıza çıkmaktadır (Heidig vd., 2015; Liew vd., 2022; Plass vd., 2014; Um vd., 2012; Wang vd., 2023). Duygusal tasarım yaklaşımı, ilginç fakat öğrenme kazanımları ile doğrudan ilgili olmayan çekici tasarım unsurlarını kullanmak yerine olumlu duyguları artırmak ve öğrenmeyi teşvik etmek için, fazladan detaylara yer vermeden tasarım unsurlarının görünüşlerini asgari düzeyde değiştirmeyi amaçlamaktadır (Heidig vd., 2015; Zhao ve Mayer, 2023). Alan yazında, en sık kullanılan tasarım teknikleri tasarım elemanları için dikkat çekici, parlak renklerin kullanılması ve cansız varlıklara bebeksi insan yüzlerinin (antropomorfizm) atfedilmesidir. Duygusal tasarım yaklaşımı son yıllarda popüler olsa da, alan yazında bu yöntemin kullanıldığı çalışmalarda farklı sonuçlar elde edilmiştir (Brom vd., 2018; Stárková vd., 2019).

Alan yazında konu ile ilgili yapılan ilk çalışmalar yöntemin öğrenme başarısını etkilemesi bakımından üstünlüğünü ortaya koymuştur (Mayer ve Estrella, 2014; Plass vd., 2014; Um vd., 2012). Park, Knörzer, vd. (2015) insanbiçimciliğin (antropomorfizm) dikkat çekici gücünü göz izleme yöntemi ile ortaya koymuştur. Brom vd. (2016) insan biçimciliğin öğrenme bakımından yüzeysel bir etkiye sahip olduğunu göstermiştir. Stárková vd. (2019) insan biçimciliğin öğrenme üzerinde etkisinin olduğunu bulmuş, bu yaklaşımın dikkat üzerinde ise sınırlı bir etkisinin olduğunu göstermiştir. Son zamanlarda yapılan çalışmalarda ise Slabbert vd. (2022) duygusal tasarım yaklaşımının öğrenme üzerinde bir etkisinin olmadığını gösterirken, Wang vd. (2023) duygusal tasarımın öğrenme başarısından transfer puanı üzerinde etkili olduğunu göstermiştir.

Duygusal tasarım konusu ile ilgili yapılan çalışmaların farklı sonuçlar ürettiği görülmekle birlikte bu konuda yapılan çalışmaların halen devam ettiği görülmektedir. Bu konuda yapılan çalışmaların büyük bir bölümünün de nicel çalışmalardan oluştuğu söylenebilir. Bu anlamda, bu çalışmada farklı duygusal yaklaşıma göre hazırlanan öğretim

materyallerini kullanan öğrencilerin bu materyaller ile ilgili görüşleri nitel araştırma yöntemi ile incelenmiştir. Bu amaçla, içerik bakımından tamamen birbirinin aynı fakat ele aldığı tasarım yaklaşımı bakımından farklı olan dört öğretim materyali geliştirilmiştir. İlk materyalde, yansız yaklaşım benimsenmiş olup siyah beyaz renk düzeni kullanılmıştır. İkinci materyalde, siyah beyaz renk düzeni yerine ilgi çekici ve parlak renkler kullanılmıştır. Üçüncü materyalde ilgi çekici renk düzeninin yanında insan biçimcilik yaklaşımı ile cansız varlıklara insansı özellikler yüklenerek yüz ifadelerinin pozitif bir hale bürünmesi sağlanmış, canlı varlıklar içinse gülen yüz ifadelerinin kullanılması sağlanmıştır. Son materyalde, bütün bu tasarım yaklaşımlarına ek olarak canlı ve cansız varlıklar için çizgi filmsel ses efektlerinin kullanılması yaklaşımı benimsenmiştir.

Oluşturtulan materyaller bir devlet okulunda okumakta olan ortaokul 7.sınıf öğrencileri tarafından kullanılmıştır. Bu materyaller, tüm sınıflar arasından seçkisiz olarak seçilen dört sınıf grubuna yine seçkisiz olarak atanmıştır. Öğrenciler, “Kuvvet, İş, Enerji ve Enerji Korunumu” konusunu ele alan bu materyalleri müfredat kapsamında üç hafta boyunca kullanarak dersi işlemişlerdir. Süreç sonunda öğrencilerin farklı duygusal tasarım yaklaşımları ile ilgili algıları incelenmiştir. Bu amaçla, her sınıftan maksimum çeşitlilik örnekleme yöntemine göre seçilen toplam 28 öğrenci ile yüz yüze görüşmeler yapılmıştır. Görüşme yöntemine göre toplanan veriler içerik analizi kullanılarak analiz edilmiştir. Ayrıca verilerin bir bölümü başka bir araştırmacı tarafından incelenmiş olup kodlayıcılar arası güvenirlik değeri hesaplanmış ve bu değer istenilen düzeyde bulunmuştur (0.85).

İçerik analizi sonucuna göre kodlar “Çoklu Ortamla Öğrenmenin Duyuşsal Boyutu” ve “Çoklu Ortamla Öğrenmenin Bilişsel Boyutu” olmak üzere iki temel kategori altında toplanmıştır. Çoklu Ortamla Öğrenmenin Duyuşsal Boyutunda “dikkat çekici renkler”, “yüz ifadeleri (antropomorfizm)” ve “ses efektleri” alt temaları bulunmaktadır. Öğrencilerin bu tasarım unsurları ile ilgili hem olumlu hem de olumsuz görüşlerinin olduğu görülmüştür. Örneğin bazı öğrenciler ilgi çekici renklerin “çekici/hoşa giden” ve “ilgi çekici” olduğunu düşünürken bazı öğrenciler de bu renklerin “sıkıcı” olduğunu belirtmiştir. Cansız varlıklar için kullanılan yüz ifadeleri için genel olarak “dikkat dağıtıcı” ve “eğlenceli” kodları görüldükçe, insanlar için kullanılan pozitif yüz ifadelerinin “pozitif enerji” verici ve “ilginç” kodları görülmüştür. Ses kategorisinde ise en çok tekrar eden kod “çekici/hoşa giden” olmuştur. Bazı öğrenciler ise ses efektlerinin “dikkat dağıtıcı” olduğunu düşünmektedir.

“Çoklu Ortamla Öğrenmenin Bilişsel Boyutu” adlı kategoride öğretim materyallerinde kullanılan ve tüm öğretim materyallerinde ortak olan bilişsel tasarım unsurlarına ilişkin öğrenci görüşleri yer almıştır. Öğrencilerin öğretim materyallerinde öğrenmelerini kolaylaştıran ya da zorlaştıran unsurlar sorulmuştur. Elde edilen cevaplar da bu kategoride toplanmıştır. Bilişsel unsurlar arasında etkileşimli alıştırmalar ve sorular, çoklu ortam ilkesi, bilişsel ilgi, gerçek hayattan örnekler, animasyon kullanımı ve dikkat çekme ilkesi gibi kodlar yer almaktadır.

Sonuçlar bir bütün olarak incelendiğinde, ilgi çekici unsurların çoklu ortamda kullanılmasının Sitzmann ve Johnson (2014) tarafından kullanılan “iki ucu keskin kılıç” metaforu ile uyumlu olduğu görülmektedir. İlgi çekici unsurlar bir yandan pozitif duyguyu

artırıp öğrenmeyi olumlu etkileme potansiyeline sahipken diğer yandan bu unsurların kullanılması bazı öğrenciler tarafından “dikkati dağıtıcı” “rahatsız edici” ve “gereksiz” olarak değerlendirilmiştir. Bu konuda daha fazla nitel araştırmanın yapılması, bu unsurların hangi durumlarda daha kullanışlı ve kullanışsız olduğunu ortaya koyabilir. Ancak unutulmamalıdır ki etkili bir öğrenmenin olabilmesi için öğretim tasarımcılarının duygusal ilgiden önce bilişsel ilgiyi temin etmesi gerekmektedir. Tasarımcıların bilişsel unsurları yerinde kullandıktan sonra bilişsel yük oluşturmada duygusal tasarım unsurlarını kullanması gerekmektedir. Öğrencilerin duygusal tasarım unsurları hakkında farklı görüşe sahip olması göz önünde bulundurulduğunda, farklı isteklere sahip öğrenenler için farklı duygusal tasarım yaklaşımlarının kullanılmasına olanak sağlayan seçenek temelli, uyarlanabilir çoklu ortam öğretim materyalleri kullanılabileceği söylenebilir.

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| Authors          | Contact                                                                   |
|------------------|---------------------------------------------------------------------------|
| Ahmer Murat Uzun | Afyon Kocatepe, University, Turkey.<br>E-mail: auzun@aku.edu.tr.          |
| Zahide Yıldırım  | Middle East Technical University, Turkey.<br>E-mail: zahidey@metu.edu.tr. |

# The Quasi-experimental in Mixed Method: Mindfulness-Based Acceptance Therapy and Cognitive Behavioral Therapy in Test Anxiety

Engin Büyükköksüz\*, Raşit Avcı\*\*

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## Abstract

The aim of our study is to compare the effectiveness of Cognitive Behavioral Therapy (CBT) and Mindfulness-Based Acceptance Intervention (MBA) in decreasing the anxiety of students, which negatively impacts academic achievement. A mixed-methods design was employed in the study. The experimental part is a quasi-experimental one including the pre-test, post-test, and control group. Data were collected by through a semi-structured interview to reveal the effectiveness of the experimental part. According to the results of the study, it was concluded that the experimental group scores decreased significantly compared to the control group. However, no significant difference was found between the experimental groups. In the qualitative part of the study, a case study was employed to reveal the outcomes achieved by the participants in the group sessions. The data was analyzed using descriptive statistics. The results indicated that MBA was effective in recuing test anxiety along with CBT.

**Keywords:** Test anxiety, mindfulness-based acceptance, cognitive behavioral therapy, qualitative analysis.

## About the Article

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\*  Corresponding Author: Psychological Counseling and Guidance Center, Istanbul Technical University, Istanbul, Turkey, buyukoksuz@itu.edu.tr.

\*\*  Psychological Counseling and Guidance, Mugla Sitki Kocman Universitesi, Muğla, Turkey, rasilavci@mu.edu.tr.



## Introduction

For students in Japan, South Korea, Greece, and Turkey, high-stakes tests set standards in academic fields and create career paths for students. Aside from the students themselves, other individuals involved in their social lives, such as family members, teachers, and school officials, are also aware of their importance, which increases the pressure on students to succeed (Cassady, 2010; Cassady & Finch, 2020). Considering the power of such exams in directing the lives of students, adverse effects can arise. High-stakes tests concern a large number of individuals, and their results have positive or negative impacts on their lives. Researchers refer to this type of worry as test anxiety (von der Embse et al., 2018). In fact, the results of previous research have shown that students who take these high-stakes tests have high rates of test anxiety (Song et al., 2015). Test anxiety is highly common, and while the general incidence among high school students has been reported to be about 20% (Naveh-Benjamin et al., 1997; Putwain & Daly, 2014), this rate has been shown to have increased to up to 40% among children (Bannon, 2017). In the study by Genç et al. (1999), 17.2% of the students who had studied for a high-stakes test were found to have high-test anxiety. Test anxiety is defined as a significant degree of deep fear and anxiety about one's lack of performance before, during, and/or after an examination, especially in academic environments (Brown et al., 2011; Herzer et al., 2014; Bozkurt et al., 2016).

Test anxiety can be considered a wider and more specific type of "evaluation anxiety" (Cassady & Johnson, 2002; Harris et al., 2019). As a scientific term, test anxiety is related to the possible negative results or outright failure on the exam or a similar evaluation process with phenomenological, physiological, and behavioral responses (Ergene, 2003). The evaluation process can result in success or failure, and these results are often significantly relevant to an individual's aims and values in life. The process of test anxiety starts when an individual is exposed to an exam or other evaluation. It is assumed that cognitive evaluations mediate between people and situations. Thus, the meaning or interpretation that an individual assigns to a state of examination becomes a decisive factor affecting his/her emotions and behaviors. This situation can be perceived by most people as a matter of concern when taking exams of high importance (Skinner & Saxton, 2019).

Although the term test anxiety is generally associated with negative results, anxiety actually includes some positive features in many evaluative situations. Research indicates that the level of test anxiety is related to these negative outputs rather than to test anxiety itself. For instance, von der Embse et al. (2013) have stated that children and teenagers with higher test anxiety exhibit decreased performance on exams compared to students with lower test anxiety. In the study that Yıldırım (2000) conducted among tenth-grade high school students, there was a significant negative relationship between academic success and test anxiety, and test anxiety significantly predicted academic success. It is important to remember that having some motivational anxiety is necessary for the academic success of students; however, after a certain level, it has been observed that

the higher the rate of anxiety, the lower the academic success of students (Núñez-Peña et al., 2016).

Although research has associated test anxiety with academic success, test anxiety is also related to the psychological symptoms observed among students. For example, it was determined that depression in eighth and eleventh grade students could be predicted by test anxiety (Yıldırım, 2004). It has also been observed that students with higher test anxiety cannot employ their skills capably (Ergene, 1994), and higher test anxiety has negative effects on the psychological health of students (Zeidner, 2007). Von der Embse et al. (2018) analysed the data of 238 studies performed on test anxiety in a meta-analysis, and one of the significant results of this study was that test anxiety was negatively correlated with academic performance.

In an earlier work, von der Embse et al. (2013) conducted a meta-analysis of over 90 studies on test anxiety in children and teenagers in the fields of psychology and education. In this 10-year evaluation study including elementary and middle school students, it was found that techniques such as biofeedback, cognitive behavioral theory (CBT), and priming competency (von der Embse et al., 2013) were effective in decreasing test anxiety. In a study conducted among university students, acceptance-based behavioral therapy was found to be effective in decreasing test anxiety (Bannon, 2017). In a meta-analysis (Ergene, 2003), 56 experimental applications were analysed to investigate the effectiveness of intervention programs in reducing test anxiety. Among these intervention programs, some counseling therapies were found to be more effective. It was reported that among these programs, those based on combining behavioral approaches, such as systematic desensitization and relaxation exercises, with techniques of cognitive behavioral therapy (CBT) had a significant effect on reducing test anxiety. The same study, by contrast, revealed that meditation, physical exercise, gestalt therapy, and humanistic counselling approaches had lower effects on reducing test anxiety. In a meta-analysis, Ergene (2003) revealed that six-sessions of CBT were more effective in reducing test anxiety compared to other schools of therapy. In considering these different findings, the present study was performed to determine whether a specific form of acceptance and commitment therapy (ACT) is as effective in reducing test anxiety as CBT.

Acceptance and commitment therapy (ACT) is a third-generation CBT approach (Hofmann & Asmundson, 2008; Hofmann & Hayes, 2019). In the historical development of CBT, it is important to mention three periods. The first wave of behavioural therapy emerged as an approach based on scientifically well-structured basic principles and devoted itself to the development of well-structured and strictly tested applied technologies. Behavioral therapy has rejected limited research and claims about clinical theory and technologies related to cognitive processes (Hayes et al., 2004).

With the emergence of cognitive methods, the second wave was initiated, and this caused a change in the first behavioral therapy process. Second-wave cognitive

therapists considered emotion and thought to be central, and they developed a more direct therapy process. They started to work with cognition and cognitive processes to change the therapy process. Early cognitive therapies approached cognition in ways that were direct and clinically related. In the present study, cognition refers to common categories, such as thoughts, ideas, beliefs, or assumptions in general. Through surveys and clinical interviews focusing on such targets, clinicians learned to define cognitive failures in specific patients, and they developed direct tools to verify these problems (Hofmann & Hayes, 2019; Hayes et al., 2004).

The third wave questions the necessity of changing cognitions, or the goal in therapy to feel "better." Instead, they promote the acceptance of experience and the use of mindfulness techniques. Mindfulness-based acceptance (MBA) is a synthesis of ACT and mindfulness interventions. MBA is a therapy model that emphasizes contextual and experiential change strategies rather than the functions of psychological phenomena and the didactics of context (Hofmann & Asmundson, 2008). Acceptance and mindfulness-based interventions are directed towards changing the content of the subjective state and the social-verbal context of dysfunctional control through subjective states instead of psychologically accepting the specific state caused by experiential avoidance and consciously suppressing thought (Hayes et al., 2006). The main objective of ACT is to live a commitment with values and at the moment rather than experiential avoidance, excessive verbal responses to cognitive content or contact with the past and future (Hayes, 2019).

Negative opinions of students towards exams and their behavioral avoidance demotivate them to study and make them unwilling to take exams, which could result in undesired bodily and emotional states. For the students who are in this vicious cycle, an MBA intervention program was designed to increase the psychological acceptance of test anxiety and to motivate behavior change towards discouraging behavioral avoidance (Hofmann & Asmundson, 2008).

ACT was developed and put into effect by different researchers to reduce test anxiety (Brown et al., 2011; Nikkhah & Arefi, 2015; Zettle 2003). At the same time, various intervention programs aimed at test anxiety were put into practice, including psycho-education (Bozanoğlu, 2005; Demirci & Erden, 2016; Koruklu et al., 2006; Özdemir, 2005), psychotherapy (Başpınar-Can et al., 2012; Ulusoy et al., 2016), group guidance (Erkan, 1994), and psychodrama approaches (Dikici et al., 2010). Through the aforementioned studies, the effectiveness of ACT was revealed. After the introduction of MBA, we hypothesized that MBA would be effective in reducing test anxiety.

This research is an experimental study, helping students in their process to deal with test anxiety that is commonly observed among students who are in the period of transition from high school to university. The primary aim of the present research is to perform group applications of MBA intervention and CBT-based skill training among students who experience test anxiety and to analyse which counseling model is more effective to apply in schools in order to reduce cognitive and emotional processes of test anxiety.

With this aim, it was decided to apply MBA intervention to one group and to apply CBT-based skill training to the other group in order to enable students to give appropriate reactions to the understanding of test anxiety and to cope with it. At the end of skill training, final tests were compared, and it was analysed whether there was any difference or not.

The significant thing about this research is that there are few pieces of research about the effects of MBA intervention on test anxiety that have not been applied. Another important thing is that there has not been any comparison of skill training programs carried out by using MBA intervention and CBT-based skill training in the literature on test anxiety. Thus, it is considered that psychological counsellors, school psychologist, pedagogues and researchers in schools can benefit from the findings of this research.

In this study, CBT-based skill training was chosen in order to compare the effectiveness of MBA interventions. In many anxiety states, CBT is an effective intervention method. It has been thought that MBA intervention will reduce test anxiety and increase the effectiveness of psychological counsellors and, hence, it will enable students to be aware of test anxiety and to acquire coping skills.

The second aim of this study is to reach, through qualitative questions, a better understanding of intervention methods for test anxiety by supporting sessions of MBA intervention and CBT-based skill training through the answers of participants. In this way, it is thought to make contributions to the literature about the content of intervention sessions. We conducted a pilot study to investigate the practicality and reasonableness of such an intervention in high schools. The authors also make recommendations to prepare a program for the test anxiety population, based on the feedback from the students themselves.

## Method

### Research Design

This research is a quasi-experimental study to comparatively analyse the effects of MBA intervention and a CBT-based skill training program on the reduction of test anxiety in students. Pretest, posttest, and design with the control group were used in the study (Huck & McLean 1975; Shadish, Cook, & Campbell, 2002). In accordance with this design, there were two experimental groups and one control group. While the first experimental group applied an MBA intervention and the second experimental group was applied a CBT-based skill training program, no program was applied to the control group. Participants of the first experimental group applied for MBA for six weeks, and participants of the second experimental group were applied for CBT skill training for six weeks. The research has indicated that the six-session cognitive-behavioural based test anxiety coping method was effective on students with a higher level of test anxiety, reduced test anxiety in students, and created a positive change in test anxiety coping

methods. The effect size of the test anxiety coping programs, which were carried out in six sessions, was found to be 0.80 (Ergene, 2003).

## **Quantitative Analysis**

### **Participants**

Participants in the research were selected from a class of 12<sup>th</sup> graders who studied at a high school and were preparing for the Turkish national Transition to Higher Education Examination and Undergraduate Placement Exam. The demographic information form and the Test Anxiety Inventory (TAI) were administered to all 243 12<sup>th</sup> grade students (Figure 1. CONSORT participant flow diagram).

### **Procedure**

The TAI was tested on 30 students who were selected at random from among 50 students who had the highest scores, indicating higher levels of anxiety. The MBA, CBT, and CG were formed through the lot method with 18 female and 12 male students with higher test anxiety. Subjects were then assigned to groups using the paired sampling method. The MBA group consisted of 10 students (7 female and 3 male); the CBT group consisted of 10 students (7 female and 3 male); and the CG group consisted of 10 students (6 female and 4 male). The permission of the parents of the students who participated in the study was obtained through a consent form. Students, their parents, and their classroom teachers were not informed about which group the students would participate in. The programs were administered to each group for 75 minutes per week. The interventions and data collection for all three study groups occurred simultaneously.

### **Counselor and Supervision**

The counselling was provided by a psychological counselling doctoral student with experience and training in both ACT and CBT. Prior to treatment, the counselor participated in group counselling and a comprehensive ACT and CBT training program. He received CBT training in a graduate counseling program at the university. During the treatment phase, the counselor received six-week supervision. The CBT supervisor is accredited by the Beck Institute CBT Certification Program. The ACT supervisor is a lecturer in the psychology program and a psychiatrist at the Mental Health Hospital.

### **Measures**

#### **Test Anxiety Inventory (TAI)**

The test anxiety of the students was evaluated using the Turkish version of the TAI. The TAI was developed by Spielberger et al. (1980) to measure test anxiety. The validity and reliability analyses of the Turkish version of the scale were conducted by Albayrak-Kaymak (1987). The TAI is a 20-item inventory consisting of two sub-dimensions: Worry (TAI-W) and Emotionality (TAI-E). Responses are scored on a 4-point Likert scale (1 =

*almost never*; 4 = *almost always*). For the adapted TAI, the total test anxiety score (range = 20–80) could also be calculated separately for each sub-dimension. The TAI-E subscale ranges from 12 to 48 points, whereas the TAI-W subscale ranges from 8 to 32 points. The Cronbach's alpha coefficients of the Turkish version at different levels (undergraduate and high school) were calculated between .82 and .92 for the total score of the TAI, between .64 and .79 for the TAI-W, and between .71 and .89 for the TAI-E. The reliability coefficient of the measurement scale, which was calculated by the test-retest method, ranged from .70 to .90. In this study, a comparison was made between genders, and no significant difference was found (Albayrak-Kaymak, 1987).

### **Experimental Application**

While one experimental group was subjected to MBA, the other experimental group was subjected to CBT. The CG did not receive any therapy. The programs were started in November in 2018. While the sessions were in progress, three members of the MBA group left the study. Thus, the MBA program was completed with seven participants. In the study, both experimental groups participated in six experimental sessions, each of which took approximately 75 minutes per week. Since the data of the research, experimental groups, and CG did not have a size showing a normal distribution, the TAI total and sub-dimension scores were evaluated through nonparametric statistics. To achieve this aim, Kruskal–Wallis H, Mann–Whitney U, and Wilcoxon signed rank tests (Z) were used (Zimmerman & Zumbo, 1993). The value of Z could be used to calculate an effect size, such as *r* (Cohen, 1988). In the present research, nonparametric Kruskal–Wallis H, Mann–Whitney U, and Wilcoxon signed rank tests were utilized to determine whether the MBA, CBT, and CG groups varied in terms of the subscale points and the total points of TAI.

### **The Group Sessions of MBA Intervention**

MBA is a group intervention based on mindfulness and ACT for high school students with high-level test anxiety. The program aimed to improve skills in the following areas: mindfulness, acceptance, cognitive defusion, committed actions in the context of values, and homework to strengthen MBA skills. The aims and sub-aims of the sessions are given in Table 1.

### **Group Sessions on CBT-Based Skills Training**

Inspired by the intervention program developed by Özdemir (2005), the intervention was designed based on CBT techniques. The programs that were implemented involved setting goal, breathing exercises, restructuring, and homework in CBT. The aims and sub-aims of the sessions are given in Table 1.

### **Data Analyses**

The interventions and data collection for all three study groups occurred simultaneously. The three participants who left the MBA group were not included in the data analysis.



Thus, the analyses were performed with the pre-test and post-test scores of seven participants in the MBA group, 10 participants in CBT group, and 10 participants in the CG. The nonparametric Kruskal–Wallis H test was used to determine whether the participants' post-test scores on the TAI varied significantly. The nonparametric Mann–Whitney U test was performed to determine among which groups the post-test scores on the TAI significantly varied. SPSS 18 package software was used in the analysis of the data.

In order to ensure the validity of the research, therapy theories were thematically determined, and sessions were categorically determined in the analysis of the data. Within this context, for each session of the research, research data were analysed in accordance with the coding that was carried out in order to provide validity of the research (Creswell, 2009). As a small pilot study, these findings were considered preliminary to help inform the design of a larger activity trial that would involve exam anxiety at school.

## **Qualitative Analysis**

### **Research Model**

The case study, as one of the qualitative research methods, was used in this study. A case study is used to provide insight into a topic (Glesne, 2013). Based on the questions of how and why, a case study is a qualitative research method that attempts to examine the depth of a phenomenon or an event that the researcher cannot control (Creswell, 2009). A case is “a phenomenon which is unique to a time and place”. A phenomenon or process “can be theoretical, empirical, or both” (Johansson, 2003; Yin, 2017). The case study makes it possible to explore, identify and explain a unique phenomenon, and allows an experimental and/or situational relationship to give an experiment-based unity (Yin, 2001; see also R Ramos, de Pires et al., 2013). The case studies can be combined with other research strategies. Within this context, a case study is a meta-method (Johansson, 2003; Yin, 2017). A Case study allows for methodological eclecticism to some extent. This eclecticism prominently includes asking questions to participants, observing what is happening, and analysing documents (Bassey, 1999).

### **Research Group**

The research group of the study is a critical incident sample from purposive sampling methods. A critical incident works in such a way that if something happens in a given situation, it will certainly happen in other similar situations or if it does not happen in that situation, it will not happen in any other situations (Creswell, 2009). It was formed according to the session main headings in order to reveal how sessions were perceived by the members at the end of the intervention program. Based on the themes formed for the content of sessions, the study group consisted of 7 participants who participated in MBA interventions and 10 participants who participated in CBT-based skill training.



## **Data Collection Tool**

A semi-structured interview form was used for data collection. After the last revisions, it became an interview form in order to evaluate the applied intervention programs. Interviews were carried out in the practice hall of the school where sessions were carried out. During the interviews, interviews with participants were conducted in a standard format by means of voice recording systems. The semi-structured data collection tool, which was created for the evaluation of each session of intervention programs and for a general evaluation, was carried out with group members; and each was completed as a interview lasting for 7 to 14 minutes.

## **Data Analysis**

Data from the semi-structured interview forms was analysed by carrying out descriptive analysis on the acquired data. Descriptive analysis is a type of qualitative data analysis that involves the interpretation and summarization of the collected data by using various data collection techniques and in accordance with the themes specified before. Descriptive analysis is the presentation of data with the aim of strengthening its meaning, sometimes by quoting, without touching the essence of the opinions received from members participating in the research (Glesne, 2013).

## **Preparing Data for Analysis**

During this process, the interviews, which lasted 155 minutes and 21 seconds, were written out in 28 pages. Later, these texts were read by the researchers twice without any interruption and once with interruptions.

## **Coding and Themes**

At this stage, the researchers prepared a code list based on the literature (Creswell, 2009). This code list was used to provide external validity proof. In the second part, the raw data set was coded by considering significant data units. Codes which were obtained with the codes prepared based on the literature were compared with the main categories; and the latest themes were identified through matches that were carried out during the real coding processes. Codes acquired from the literature and codes acquired from participants in accordance with these codes were combined and then analysed under three categories of MBA intervention "mindfulness exercise, cognitive fusion, and acceptance". CBT-based skill training was analysed under two main categories: "coping strategies, restructuring of thoughts".

## **Coding of the Data and Their Association with Themes**

Significant data units about each code were organized in *MSEXcel* spreadsheets. In this way, it is possible to observe which statement type the participants created is related to each code.

## Reporting

At this stage, themes to be used in order to explain the results of the research were determined; Codes related to each theme were clarified through the references chosen by the participants. To provide diversity in quotations, statements of samples covering the data sources and describing the themes and codes in the best way were included. Findings were presented in the MBA intervention under these titles: a) mindfulness exercise, b) cognitive defusion and c) acceptance. CBT-based skill training was presented under these titles: a) Realizing thought mistakes, b) coping strategies and c) restructuring of thoughts about test anxiety.

## Credibility and Ethics

The researchers took certain precautions to ensure validity and reliability. In order to increase transmissibility, critical incident sampling of purposive sampling methods was used. A critical incident is as follows: if it happens in this situation, it will definitely happen in some other similar situations or if it does not happen in this situation, it will never happen in another situation (Creswell, 2009). Data loss was prevented through audio records. With the approval of the participants, it was tried to reveal how much the results reflect the truth. For this purpose, the transcripts of the interviews were later read again to the interviewers, and they were asked if there was anything they would like to add or change. Research data was analysed after participants had approved transcripts. After the data was finalized, the reliability of the study was tried to be provided by applying expert opinion. The researcher explained his role and situation during the research process in a clear way. The acquired data was explained by being reported in detail. The study received ethics approval from the ethics committee of Muğla Sıtkı Koçman University (03.01.2017).

## Role of the Researcher

The field researcher is a PhD student, a psychological counsellor, and a lecturer at a university's Psychological Counselling and Guidance program. The researcher has worked for 12 years in institutions which provide education for exams. He took classes in psychological counselling with group and practiced psychological counselling with groups during his postgraduate and doctoral studies. This study is the second qualitative research experience of the researcher. There was no teacher-student relationship between the participants and the researcher when he was conducting his studies at the university. In addition, the researcher explained the reason for the research after the intervention program. He explained the information about where, how and for what purposes he would use the data obtained during the interviews. It helps participants to be completely honest with their answers. The researcher took necessary the precautions to increase the transmissibility and reliability of the research.

## Quantitative Analysis Results

The pre-test and post-test scores on the TAI, TAI-W, and TAI-E (n; mean; and standard deviation [SD]) belonging to the MBA group, the CBT group, and the CG are shown in Table 2.

The results of the Kruskal–Wallis H test to determine whether the MBA group, the CBT group, and the CG showed a significant difference in terms of the post-test scores on the TAI, the difference between the scores of the groups was found to be significant ( $X^2 = 6.85$ ,  $p < .05$ ) (see Table 3). Regarding whether the MBA group, the CBT group, and the CG showed a significant difference in terms of the post-test scores on the TAI-W, the difference between the scores of the groups was found to be significant ( $X^2 = 8.87$ ,  $p < .05$ ). However, the analysis revealed that there was an insignificant difference in terms of the TAI-E post-test scores.

The Mann–Whitney U test aimed to analyze the source of the differences between the post-test scores on the TAI and those on the TAI-W. According to the results, the post-test scores on the TAI for all three groups differed significantly (post-test of the TAI: MBA vs. CG:  $U = 12.00$ ,  $p < .05$ ; CBT vs. CG:  $U = 21.00$ ,  $p < .05$ ). However, the post-test scores on the TAI for the MBA and CBT groups did not differ significantly ( $U = 32.50$ ,  $p > .05$ ) (see Table 4).

According to the results of the Mann–Whitney U test, the post-test scores on the TAI-W for the MBA group, the CBT group, and CG differed significantly (post-test of the TAI-W: MBA vs. CG:  $U = 10.50$ ,  $p < .05$ ; CBT vs. CG:  $U = 16.00$ ,  $p < .05$ ). However, the results for the post-test scores on the TAI-W for the MBA and CBT groups did not differ significantly ( $U = 28.50$ ,  $p > .05$ ).

The results of the Wilcoxon signed rank tests indicated that the point ranks of the pre-test vs. post-test scores on the TAI for the MBA group differed significantly ( $Z = -2.20$ ,  $p < .05$ ) with a large effect size ( $r = .83$ ) (see Table 5). The point ranks of the pre-test vs. post-test scores on the TAI for the CBT group also differed significantly ( $Z = -2.50$ ,  $p < .05$ ) with a large effect size ( $r = .78$ ). The point ranks of the pre-test vs. post-test scores on the TAI for the CG did not differ significantly ( $Z = -.41$ ,  $p > .05$ ) with a small effect size ( $r = .13$ ).

## Qualitative Analysis Results

The findings of the research that was given to all participants in the last session of the applied intervention programs were designed to understand what the group perceived in each session.

As can be observed in Table 6, according to the data obtained from the descriptive analysis of the intervention program, the results match the dimensions of the MBA intervention. The first theme was created under the title “mindfulness exercise”. With the statements of A3 “Realize thoughts” and A4 “When I am too stressed, I take a deep

breath and focus on the moment”, it was attempted to save group members from the pressure of past and future experiences and to enable them to live the experience of “mindfulness exercise”. It was understood from the structure of these sessions that group members can use the experience of “mindfulness exercise” and improve it as a skill. When sub-dimensions of the theme “mindfulness exercise” were analysed, it was determined that group members can recognize anxiety in their bodies, make sense of the change in their bodies during the experience, and change bodily reflections of anxiety. It can be inferred from this theme that group members can develop skills of mindfulness and improve their physical awareness when they experience test anxiety.

As the basic hypothesis of ACT, “Cognitive fusion” and “Experiential avoidance” are seen as the basic reasons for psychological rigidity. Group sessions were created by considering these assumptions; and in group sessions, it was aimed to teach cognitive defusion, which is the opposite of cognitive fusion. According to the acquired data, A2 “I did not care about negative thoughts that came to my mind during the exam”, A6 “Realize thoughts and then send them”, and A7 “Now, I am aware of my anxiety, and I do not fight against myself” were created in the second theme under the title “cognitive defusion”. It can be understood from this theme that group members improved their skills in cognitive defusion. Group members stated that when they experienced test anxiety, they realized that negative thoughts automatically came to their minds, and when they did not deal with them cognitively, test anxiety decreased.

Created by considering the assumptions, in group sessions, it was aimed at improving acceptance experiences, which are the opposite of experiential avoidance. Since group sessions are based on ACT, sessions were created with the aim of helping members develop acceptance skills instead of experiential avoidance. When the statements of members, A1 “I learned how to live with my test anxiety”, A2 “Instead of fighting against my anxiety and wasting time, I accept it and become friends with it”, and A7 “I realized that my experiential avoidance does not save me” were analysed, the third theme was created under the title of “acceptance”. It can be understood from this theme that group members improved their skills of acceptance and experiential avoidance caused by test anxiety decreased. It means that group members opened a space in their minds for the thoughts about exams and they could cope with them. At this point, it can be understood that when they experience test anxiety, they can realize negative emotions and thoughts about it, and they can cope with it.

According to the findings, it is observed that the acquired themes match up with the session aims of the MBA intervention. It was determined that group members had learned techniques taught in the skill training and could use them when they experienced test anxiety. Some group members emphasized the effectiveness of methods that were applied in order to decrease test anxiety.

As observed in Table 7, according to the data acquired from the qualitative analysis of the intervention program, themes match up with CBT based skill training sessions.

The first theme was created under the title “realizing thought mistakes”. When statements of group members were taken into consideration and when statements such as B3 “Applying it successfully by realizing thought mistakes”, B4 “I realized my thought mistakes”, And B7 “Controlling my anxiety and overcoming thought mistakes” were analysed, it was primarily aimed in the CBT-based psycho-education process to make group members realize that their cognitive mistakes cause problems in their way of understanding and interpreting events. During the process of group sessions which were created in line with this purpose, it was understood from the written statements of group members that they were not aware of their problematic perspectives or cognitive distortions about test anxiety, and it was considered that the session achieved its aim.

The second theme was created under the title “coping strategies”. When the statements of group members were taken into consideration and as can be observed from statements such as B4 “When something negative happens in my life, I get angry or excited less thanks to breathing exercise”, B1 “I applied breathing exercises when I was extremely stressed”, and B7 “Doing breathing exercises”, group members used breathing exercises as a coping strategy against test anxiety. Therefore, it can be evaluated as such that group members can use relaxation exercises from behavioural techniques, which are used to decrease test anxiety, in their daily lives.

The third theme was created under the title “Restructuring the thought about test anxiety, cognitive restructuring, changing the thought, using the alternative thought”. Deducing from statements such as B1 “I learned that the exam is not the last solution, there are other ways to achieve my goal”, B2 “My anxiety is not like it was on the first day, but it did not disappear and I think anxiety is necessary”, and B6 “I learned that I am seeing only one colour in life and I can learn something from people”, it is observed that interventions about the changing process of making sense of events and interpreting them are required for change in the CBT-based psycho-education process. When the statements of group members are analysed, it can be evaluated as such that practices of restructuring thoughts to decrease test anxiety and of developing alternative thoughts have had reflections of group members, and they can reflect what they learned on their daily lives in a written way; and from this point of view, it can be stated that the aimed intervention achieved its aim.

According to the data acquired from the CBT-based psycho-education program, it is inferred that group members can realize their mistakes and change them. It can be inferred that members can use functional methods to reach their aims, and it can also be inferred that they can try functional methods to solve their problems. As understood from these themes, the acquired themes match up with the session aims of CBT-based skill training. Some group members emphasized the effectiveness of methods which were applied in order to decrease test anxiety.

## Discussion

### Quantitative Analysis

The aim of this research was to analyze the effectiveness of MBA and CBT in alleviating test anxiety among students. According to the findings of the research, both MBA and CBT decreased students' test anxiety scores.

Specifically, in the study, MBA appeared to be as effective as CBT in reducing test anxiety. According to the post-test results, it was observed that MBA was statistically significant in reducing test anxiety. The outcomes of MBA have been found to be consistent with those reported in previous studies (Bannon, 2017; Bellinger et al., 2015; Brown et al., 2011; Hayes et al., 2011; Nikkhah & Arefi, 2015; Zettle, 2003).

The TAI scores of participants in the MBA and CBT groups indicated that they achieved their goals of reducing their test anxiety. In this period, they emphasized the functionality of coping strategies aimed at reducing test anxiety. The MBA group members learned about the *acceptance* of the emotions associated with test anxiety; they were enabled to *be in the moment* with their anxiety and experience cognitive defusion through *breathing exercises* and *cognitive defusion* techniques, which helped them to focus on the moment to which they were reacting. The fact that the cognitive defusion technique is an effective method to reduce the negative emotions of an individual is actually reported in the literature (Aydın & Yerin-Güneri, 2020; Masuda et al., 2004; Zettle & Hayes, 1986). In this way, it is obvious that the skills intended to be taught during the sessions were achieved. Therefore, they reported experiencing less test anxiety in situations where they would be expected to have higher levels of test anxiety (Cunha & Paiva, 2012).

Values are purposeful choices that can guide our actions (Hayes & Strosahl, 2004). Test anxiety can prevent us from acting on our values. By enabling individuals to realize their values, they were ensured to have positive attitudes to struggle with their exams by recognizing their values.

It has been reported that mixed interventions are more effective than other approaches, as in the case of teaching functional skills with CBT (Gregor, 2005; Yahav & Cohen, 2008). According to the post-test results, CBT appeared to significantly reduce test anxiety. It was observed that the effectiveness of CBT in reducing test anxiety in the present study corresponds to the results reported in previous research (Ergene, 2003; Goldfried et al., 1978; Hembree, 1988; Huntley, et al., 2019; Koruklu et al., 2006; Meichenbaum, 1972).

CBT appeared to effectively reduce test anxiety. Studies on anxiety generally focus on emotions and cognitive dimensions (Cunha & Paiva, 2012; de Hullu et al., 2017; Olatunji et al., 2010). The results of this and previous studies support the idea that a change in thoughts reveals a change in behaviour and emotions, according to CBT, and that this has a significant effect on reducing test anxiety (Arch et al., 2012; Türk & Katmer, 2019). However, in the statistical analysis to determine which program was



more effective, a comparative analysis was performed, and no significant difference was found between MBA and CBT with respect to test anxiety scores. This result also corresponds to previous research (Brown et al., 2011; Johnston et al., 2013; Zettle, 2003). Although the approaches have different methods for alleviating test anxiety, it can be said that both intervention methods are effective in reducing students' test anxiety.

Based on these results, MPA appeared equally effective as CBT in reducing test anxiety. It was previously determined that MBA has the ability to reduce students' test anxiety (Masuda et al., 2004; Zettle & Hayes, 1986). Thus, after being implemented in different cultures, the results of interventions for reducing test anxiety correspond to each other, which makes it possible to think that ACT is a highly effective therapy model.

The mindfulness-training program (Zylowska et al., 2008) and ACT (Hayes et al. 2011) were shown in recent research to help alleviate psychological problems and improve school performance (Aydın & Yerin-Güneri, 2020; Frank et al., 2017; McKeering & Hwang, 2019). Based on the results of the current study, MBA can be applicable in future intervention programs that aim to reduce test anxiety. In accordance with this information, for future studies, the effective application of MBA in studies aimed at reducing test anxiety is highly important to improve the academic performance of students. The application of this program in schools for students who experience test anxiety is expected to be beneficial. Moreover, these findings contribute to the growing literature on the role of mindfulness in alleviating test anxiety.

### Qualitative Analysis

The aim of this study is to contribute to the better understanding of intervention methods for test anxiety by supporting sessions of MBA intervention and CBT-based skill training through the answers of participants. It is thought that, in this way, it will contribute to the literature about the contents of intervention sessions. The qualitative findings of the study were supported by the quantitative results of skill training group applications and the analysis of the data acquired from the answers of participants.

Group members of MBA intervention and CBT-based skill training stated that they achieved their aims to reduce test anxiety; and in this period, they emphasized the functionality of coping strategies aimed at reducing test anxiety. Group members of the MBA intervention learned the acceptance of emotions about test anxiety; they were enabled to be in the moment of anxiety and to experience cognitive defusion through breathing exercises and cognitive defusion techniques which helped them to focus on the moment they gave reactions. The fact that the cognitive defusion technique is an effective method to reduce negative emotions of an individual corresponds to the literature (Aydın & Yerin Güneri, 2020; Masuda et al., 2004; Zettle & Hayes, 1986). In this way, it was understood that the skill which was attempted to be taught during sessions was achieved. Thereby, participants felt better in situations in which they experienced test anxiety (Cunha & Paiva, 2012).



Group members of CBT-based skill training stated that they realized their thought mistakes about test anxiety and tried to turn them into functional thoughts. Meanwhile, they stated that having negative thoughts about exams led them to experience a mood in which they lived unconsciously. In order to cope with this situation, they realized their thought mistakes, and used relaxation techniques such as thought changing cognitive strategies and breathing exercises (Cho et al., 2016; Hinton et al., 2013). It reveals that the program has helped them to develop skills of coping, and it corresponds to the literature (Johnston et al., 2013; Kaya & Avcı 2016). In conclusion, participants have felt better in situations where they experience test anxiety.

### Limitations and Future Directions

A limitation of this study is that it involved a, small sample study with a test. Although this study gives us a preliminary view of the effectiveness of teaching mindfulness in test anxiety and contributes to the small group base, future work should involve larger samples. A second limitation concerns the generalizability of this study to other content domains. Further research is needed to examine whether these results in the sample are specific and whether they are generalizable to another sample.

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**Table 2.**

*The Pretest and Posttest of the TAI, TAI-W and TAI-E, Mean, and Standard Deviation of the MBA intervention, the CBT-based Skill Training and the Control Group*

|             |   | MBA          |    | CBT          |    | Control Group (CG) |  |
|-------------|---|--------------|----|--------------|----|--------------------|--|
| Test Points | n | Mean(SD)     | n  | Mean(SD)     | n  | Mean(SD)           |  |
| TAI         |   |              |    |              |    |                    |  |
| Pretest     | 7 | 56.71(12.81) | 10 | 56.3(10.59)  | 10 | 57.70(4.08)        |  |
| Posttest    | 7 | 43.43(5.12)  | 10 | 43.90(11.63) | 10 | 56.40(11.62)       |  |
| TAI-W       |   |              |    |              |    |                    |  |
| Pretest     | 7 | 22.00(5.16)  | 10 | 23.10(4.68)  | 10 | 24.20(2.74)        |  |
| Posttest    | 7 | 16.85(2.34)  | 10 | 16.9(5.44)   | 10 | 23.20(5.18)        |  |
| TAI-E       |   |              |    |              |    |                    |  |
| Pretest     | 7 | 34.71(7.95)  | 10 | 33.20(6.84)  | 10 | 33.50(3.66)        |  |
| Posttest    | 7 | 26.57(3.10)  | 10 | 27.00(6.72)  | 10 | 33.20(7.1)         |  |

**Table 3.**

*Total Points of Test Anxiety Inventory and Sub-Dimensions Results of Kruskal Wallis-H Test for MBA intervention, CBT-based Skill Training, and Control Group*

| Point                          | GROUP   | N  | Mean Rank | X <sup>2</sup> | Sd | p     |
|--------------------------------|---------|----|-----------|----------------|----|-------|
| Final Test Total Points of TAI | MBA     | 7  | 11.07     | 6.85           | 2  | .033* |
|                                | CBT     | 10 | 10.85     |                |    |       |
|                                | CONTROL | 10 | 19.20     |                |    |       |

|                                     |         |    |       |      |   |       |
|-------------------------------------|---------|----|-------|------|---|-------|
| Final Test Total Points of Delusion | MBA     | 7  | 11.43 |      |   |       |
|                                     | CBT     | 10 | 9.95  | 8.87 | 2 | .012* |
|                                     | CONTROL | 10 | 19.85 |      |   |       |
| Affective Final Test Total Points   | MBA     | 7  | 11.43 |      |   |       |
|                                     | CBT     | 10 | 11.60 | 4.46 | 2 | .107  |
|                                     | CONTROL | 10 | 18.20 |      |   |       |

\* $p < .05$ , \*\* $p < .01$

**Table 4.**

Total Points of Test Anxiety Inventory and Sub-Dimensions Results of Mann Whitney U Test for MBA intervention, CBT-based Skill Training, and the Control Group

| Point                               | GROUP   | N  | Mean Rank | Sum of Ranks | U      |
|-------------------------------------|---------|----|-----------|--------------|--------|
| Final Test Total Points of TAI      | MBA     | 7  | 5.71      | 40.00        | 12.00* |
|                                     | CONTROL | 10 | 11.30     | 113.00       |        |
|                                     | CBT     | 10 | 7.60      | 76.00        | 21.00* |
|                                     | CONTROL | 10 | 13.40     | 134.00       |        |
| Final Test Total Points of Delusion | MBA     | 7  | 9.36      | 65.50        | 32.50  |
|                                     | CBT     | 10 | 8.75      | 87.50        |        |
|                                     | MBA     | 7  | 5.50      | 38.50        | 10.50* |
|                                     | CONTROL | 10 | 11.45     | 114.50       |        |
|                                     | CBT     | 10 | 7.10      | 71.00        | 16.00* |
|                                     | CONTROL | 10 | 13.90     | 139.00       |        |
|                                     | MBA     | 7  | 9.93      | 69.50        | 28.50  |
|                                     | CBT     | 10 | 8.35      | 83.50        |        |

\* $p < .05$ , \*\* $p < .01$

**Table 5.**

Total Points of Test Anxiety Inventory Results of Pretest-Posttest Wilcoxon Signed Ranks Test Analysis for MBA intervention, CBT-based Skill Training, and the Control Group

| Point                                | GROUP | Rank           | N | Mean Rank | Sum of Ranks | Z     |
|--------------------------------------|-------|----------------|---|-----------|--------------|-------|
| Pretest-Posttest Total Points of TAI | MBA   | Negative Ranks | 6 | 4.50      | 27.00        | 2.20* |
|                                      |       | Positive Ranks | 1 | 1         | 1.00         |       |



|               |                |   |      |       |       |
|---------------|----------------|---|------|-------|-------|
| CBT           | Negative Ranks | 8 | 6.5  | 52.00 | 2.50* |
|               | Positive Ranks | 2 | 1.5  | 3.00  |       |
| Control Group | Negative Ranks | 6 | 4.33 | 26.00 | 0.41  |
|               | Positive Ranks | 3 | 6.33 | 19.00 |       |

\* $p < .05$ , \*\* $p < .01$

**Table 1.**

*The Content of MBA and CBT Intervention Sessions*

| MBA       |                                                                                                                                                                                                                                                                 | CBT                                                                                                                                                                                                             |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Session   | Contents                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                 |
| Session 1 | Meeting<br>Mindfulness exercise (Practice mindful breathing)<br>Determining the rules of the group<br>Learning MBA<br>Creating personal aims                                                                                                                    | Enabling participants to meet each other,<br>Determining rules of the group,<br>Creating personal aims,<br>Breathing Exercise                                                                                   |
| Session 2 | Mindfulness exercise (Practice breathing space)<br>Learning acceptance and cognitive defusion<br>Realizing experiential avoidance<br>Realizing experiential avoidance about the exam<br>Realizing cognitive fusion<br>Realizing cognitive fusion about the exam | Introducing Cognitive Behavioural therapy<br>Enabling the realization of basic elements causing anxiety<br>Enabling participants to realize their emotions and thoughts during the exam                         |
| Session 3 | Mindfulness exercise (Practice breathing space and sitting meditation)<br>Cycle of test anxiety and cognitive fusion<br>Cycle of test anxiety                                                                                                                   | Realizing physiological changes on the body created by test anxiety<br>Revealing the qualities of the anxiety experienced in the exam environment<br>Enabling them to relax through breathing practices         |
| Session 4 | Mindfulness exercise (Practice activity awareness, breathing space)<br>I am aware of my values<br>Describing values                                                                                                                                             | Revealing thinking errors and belief systems of participants<br>Enabling participants to realize thinking errors and belief systems<br>Enabling them to relax corporeally                                       |
| Session 5 | Mindfulness exercise (Practice body scan)<br>Existence of our values<br>Maintaining our stable actions<br>Observing Self<br>Maintaining stable actions in line with values                                                                                      | Enabling the maintenance of rational thoughts in group participants<br>Enabling them to gain awareness about behaviours in exam environments where anxiety is not present<br>Enabling them to relax corporeally |
| Session 6 | Mindfulness exercise (Mindful walking)<br>Sharing acquirements obtained from group experience                                                                                                                                                                   | Enabling participants to evaluate the conducted sessions<br>Determining how much participants reach their personal aims                                                                                         |



|                                                   |                                                                                                                                         |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Receiving feedback from participants<br>Farewells | Discussing how much the group participants<br>achieve to use their ability to cope with test anxiety<br>Breathing Exercise<br>Farewells |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|

**Table 6.**

*Statements of Participants of MBA intervention and Themes*

| Participant | Statements of participants                                                                                                                         | Themes               |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| A1          | Thanks to being in the moment exercise, I learned to feel relaxed when I am stressed.                                                              | Mindfulness exercise |
| A2          | I use the bus metaphor by being in the moment.                                                                                                     |                      |
| A3          | Realize thoughts and then send them.                                                                                                               |                      |
| A3          | Acceptance and being in the moment helps me.                                                                                                       |                      |
| A4          | When I am too stressed, I take a deep breath and focus on the moment.                                                                              | Cognitive defusion   |
| A1          | Now when I have an undesired thought, I do not try hard to get rid of it. I just say "Yes, I remember that I have such a thought" and I let it go. |                      |
| A2          | I did not care about negative thoughts that came to my mind during the exam.                                                                       |                      |
| A6          | Realize thoughts and then send them.                                                                                                               |                      |
| A7          | Now, I am aware of my anxiety and I do not fight against myself.                                                                                   | Acceptance           |
| A1          | I learned how to live with my test anxiety.<br>I accepted the test anxiety I experienced and I learned to live with it.                            |                      |
| A2          | Instead of fighting against my anxiety and wasting time, I accept it and become friends with it.                                                   |                      |
| A4          | My acceptance of test anxiety and ability to live with it helped me to overcome test anxiety.                                                      |                      |
| A6          | I could finally use my ability of acceptance.<br>Acceptance and mindfulness helps me.                                                              |                      |

**Table 7.**

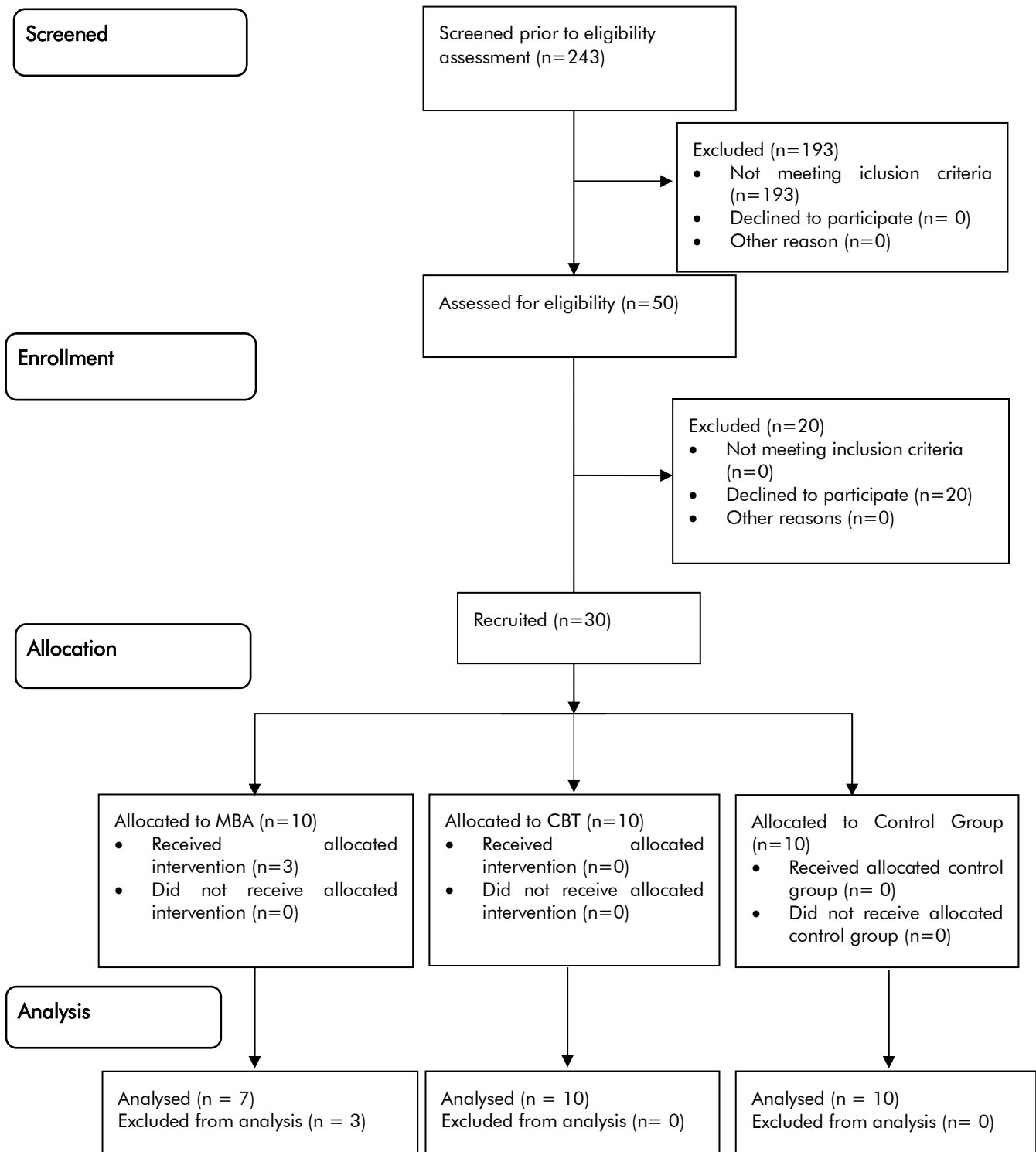
*Statements of Participants of CBT Based Skill Training and Themes*

| Participant | Statements of participants                                                                                  | Themes                     |
|-------------|-------------------------------------------------------------------------------------------------------------|----------------------------|
| B2          | Overcoming thought mistakes by believing                                                                    | Realizing thought mistakes |
| B3          | Applying it successfully by realizing thought mistakes                                                      |                            |
| B4          | I realized my thought mistakes.                                                                             |                            |
| B5          | Finding thought mistakes                                                                                    |                            |
| B7          | Controlling my anxiety and overcoming thought mistakes                                                      |                            |
| B10         | I realize my thought mistakes                                                                               | Coping strategies          |
| B1          | I applied breathing exercises when I was extremely stressed                                                 |                            |
| B3          | When I am stressed, I can think in a healthier way by doing breathing exercise and thinking about safe zone |                            |
| B4          | When something negative happens in my life, I get angry or excited less thanks to breathing exercise.       |                            |
| B5          | If I am stressed during an exam, I take deep breaths and feel relaxed by going to my safe zone              |                            |
| B6          | I use it in a way that affects me positively                                                                |                            |

|     |                                                                                                                                                                    |                                                                        |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| B7  | Doing breathing exercises                                                                                                                                          |                                                                        |
| B7  | Controlling my anxiety                                                                                                                                             |                                                                        |
| B8  | Breathing exercise                                                                                                                                                 |                                                                        |
| B9  | Breathing exercise                                                                                                                                                 |                                                                        |
| B10 | When I am stressed during an exam or while I am doing a test and thinking that I cannot do it, I do breathing exercise                                             |                                                                        |
| B1  | I learned that the exam is not the last solution, there are other ways to achieve my goal                                                                          |                                                                        |
| B2  | I learned that not everything depends on only one exam<br>My anxiety is not like it was in the first day but it did not disappear and I think anxiety is necessary | Restructuring the thought about test anxiety, cognitive restructuring, |
| B3  | I learned that not everything depends on only one exam                                                                                                             | changing the thought, using the alternative thought                    |
| B6  | I learned that I am seeing only one colour in life and I can learn something from people                                                                           |                                                                        |
| B7  | I realized that if I understand that stress is meaningless and I prepare for the exam in a better and less stressed way, I can solve my problems in the best way   |                                                                        |

Figure 1.

CONSORT participant flow diagram.



## Genişletilmiş Türkçe Özet

Japonya, Güney Kore, Yunanistan ve Türkiye'deki öğrenciler için üniversiteye giriş sınavları akademik alanlarda standartları belirler ve öğrenciler için kariyer yolları oluşturur. Bu tür sınavların öğrencilerin yaşamlarına yön verme gücü düşünüldüğünde olumsuz etkileri ortaya çıkabilmektedir. Üniversiteye giriş sınavları çok sayıda kişiyi ilgilendirir ve sonuçları yaşamları üzerinde olumlu veya olumsuz etkilere sahiptir. Araştırmalar, sınav kaygısının düzeyinin, sınav kaygısının kendisiyle değil, bu olumsuz çıktılarla ilişkili olduğunu göstermektedir.

Bu araştırma, liseden üniversiteye geçiş sürecinde olan öğrencilerde yaygın olarak görülen sınav kaygısıyla baş etme süreçlerinde öğrencilere yardımcı olan deneysel bir çalışmadır. Bu araştırmanın temel amacı, sınav kaygısı yaşayan öğrencilere farkındalık temelli kabul (FTK) müdahalesi ve bilişsel davranışçı terapi (BDT) temelli beceri eğitiminin grup uygulamasını gerçekleştirmek ve sınav kaygısının bilişsel ve duygusal süreçlerini azaltmak için okullarda hangi psikolojik danışma modelinin uygulanmasının daha etkili olduğunu analiz etmektir. Bu amaçla, öğrencilerin sınav kaygısını anlamalarına uygun tepkiler vermeleri ve bununla baş etmelerini sağlamak amacıyla bir gruba FTK müdahalesi, diğer gruba BDT temelli beceri eğitimi uygulanmasına karar verilmiştir. Beceri eğitimi sonunda son testler karşılaştırılmış ve fark olup olmadığı analiz edilmiştir.

Bu araştırmayla ilgili önemli olan şey, FTK müdahalesinin sınav kaygısı üzerindeki etkilerine ilişkin az sayıda araştırma olması ve uygulanmamış olmasıdır. Bir diğer önemli husus ise sınav kaygısı literatüründe FTK müdahalesi kullanılarak gerçekleştirilen beceri eğitimi programları ile BDT temelli beceri eğitiminin karşılaştırmasının yapılmamış olmasıdır. Böylece psikolojik danışmanların, okul psikologlarının, pedagogların ve okullardaki araştırmacıların bu araştırmanın bulgularından yararlanabileceği düşünülmektedir.

Bu çalışmada, FTK müdahalesinin etkinliğini karşılaştırmak için BDT tabanlı beceri eğitimi seçilmiştir. Birçok kaygı durumunda BDT etkili bir müdahale yöntemidir. FTK uygulamasının sınav kaygısını azaltacağı ve psikolojik danışmanların etkinliğini artıracacağı, dolayısıyla öğrencilerin sınav kaygısının farkına varmalarını ve başa çıkma becerileri kazanmalarını sağlayacağı düşünülmektedir.

Bu çalışmanın diğer amacı, FTK müdahalesi ve BDT temelli beceri eğitimi oturumlarını katılımcıların cevaplarıyla destekleyerek sınav kaygısına yönelik müdahale yöntemlerinin nitel sorular aracılığıyla daha iyi anlaşılmasına ulaşmaktır. Bu sayede müdahale oturumlarının içeriği ile ilgili literatüre katkı sağlanacağı düşünülmektedir. Liselerde böyle bir müdahalenin uygulanabilirliğini ve makul olup olmadığını araştırmak için bir pilot çalışma gerçekleştirdik.

Bu araştırma, FTK müdahalesi ile BDT temelli beceri eğitimi programının öğrencilerin sınav kaygısını azaltma üzerindeki etkilerini karşılaştırmalı olarak analiz etmek için yarı

deneysel bir çalışmadır. Araştırmada ön test, son test ve kontrol gruplu desen kullanılmıştır. Bu desene uygun olarak iki deney grubu ve bir kontrol grubu oluşturulmuştur. Birinci deney grubuna FTK müdahalesi, ikinci deney grubuna BDT temelli beceri geliştirme programı uygulanırken, kontrol grubuna herhangi bir program uygulanmadı. Birinci deney grubundaki katılımcılara altı hafta FTK, ikinci deney grubundaki katılımcılara ise altı hafta BDT beceri eğitimi uygulanmıştır.

Araştırmanın katılımcıları, bir lisede öğrenim gören Yükseköğretime Geçiş Sınavı ve Lisans Yerleştirme Sınavına hazırlanan 12. sınıf öğrencilerinden seçilmiştir. 243 12. sınıf öğrencisine demografik bilgi formu ve Sınav Kaygısı Envanteri (SKE) uygulandı.

FTK, BDT ve kontrol grubu (KG) sınav kaygısı yüksek olan 18 kız ve 12 erkek öğrenci ile kura yöntemiyle oluşturulmuştur. Denekler daha sonra eşleştirilmiş örnekleme yöntemi kullanılarak gruplara atanmıştır. FTK grubu 10 öğrenciden (7 kız ve 3 erkek) oluşuyordu; BDT grubu 10 öğrenciden (7 kız ve 3 erkek) oluşuyordu; KG ise 10 öğrenciden (6 kız, 4 erkek) oluşmaktadır.

Öğrencilerin sınav kaygıları SKE'nin Türkçe versiyonu kullanılarak değerlendirilmiştir. SKE, Kuruntu (SKE-K) ve Duyuşsal (SKE-D) olmak üzere iki alt boyuttan oluşan 20 maddelik bir envanterdir. SKE, 4'lü Likert ölçeğinde puanlanır.

FKT grubundan ayrılan üç katılımcının verileri analize dahil edilmemiştir. Böylece analizler FKT grubundan 7, BDT grubundan 10 ve KG grubundan 10 katılımcının ön test ve son test puanları ile gerçekleştirilmiştir. Katılımcıların SKE son test puanlarının anlamlı bir şekilde değişip değişmediğini belirlemek için parametrik olmayan Kruskal-Wallis H testi kullanılmıştır. SKE son test puanlarının hangi gruplar arasında anlamlı farklılık gösterdiğini belirlemek için parametrik olmayan Mann-Whitney U testi yapılmıştır.

Bu çalışmanın diğer bölümü nitel araştırma yöntemlerinden biri olan durum çalışması ile yapılmıştır. Durum çalışması, bir konu hakkında içgörü sağlamak için kullanılır. Veri toplamak için yarı yapılandırılmış görüşme formu kullanılmıştır. Yapılan son revizyonlardan sonra uygulanan müdahale programlarının değerlendirilmesi amacıyla görüşme formu haline getirilmiştir. Görüşmeler, seansların gerçekleştirildiği okulun uygulama salonunda gerçekleştirilmiştir. Görüşmeler, katılımcılardan alınan onam ile görüntü kaydı ile gerçekleştirilmiştir. Müdahale programlarının her bir oturumunun değerlendirilmesi ve genel bir değerlendirme için oluşturulan yarı yapılandırılmış veri toplama aracı, grup üyeleri ile gerçekleştirilmiş ve her biri 7 ile 14 dakika süren görüşmeler olarak tamamlanmıştır.

FTK grubu, BDT grubu ve KG grubunun SKE son test puanları açısından anlamlı bir fark gösterip göstermediğini belirlemek için yapılan Kruskal-Wallis H testi sonuçları, grupların puanları arasındaki farkın anlamlı olmak FTK grubu, BDT grubu ve KG'nin SKE-K son

test puanları açısından anlamlı bir fark gösterip göstermediğine bakıldığında, grupların puanları arasındaki fark anlamlı bulunmuştur. Ancak yapılan analiz SKE-D son test puanları açısından anlamlı bir fark olmadığını ortaya koymuştur.

Mann-Whitney U testi, SKE'deki son test puanları ile SKE-K'dekiler arasındaki farkların kaynağını analiz etmeyi amaçladı. Sonuçlara göre, her üç grup için SKE son test puanları arasında anlamlı bir fark vardır. Ancak, FTK ve BDT grupları için SKE'deki son test puanları anlamlı bir farklılık göstermemiştir.

Mann-Whitney U testinin sonuçlarına göre FTK grubu, BDT grubu ve KG için SKE-K son test puanları anlamlı olarak farklılaştı. Ancak, FTK ve BDT grupları için SKE-K'deki son test puanlarının sonuçları anlamlı bir farklılık göstermemiştir.

Tablo 6'da görüldüğü gibi, müdahale programının betimsel analizinden elde edilen verilere göre sonuçlar FTK müdahalesinin boyutlarıyla örtüşmektedir. İlk tema "farkındalık egzersizi" başlığı altında oluşturulmuştur. Kabul ve Kararlılık Terapisi(KKT)'nin temel hipotezi olarak "bilişsel kaynaşma" ve "yaşantısal kaçınma" psikolojik katılığın temel nedenleri olarak görülmektedir. Grup oturumları bu varsayımlar dikkate alınarak oluşturulmuştur; grup oturumlarında ise bilişsel kaynaşmanın tam tersi olan bilişsel ayrışmanın becerisinin kazanımı hedeflenmiştir.

Tablo 7'de görüldüğü gibi, müdahale programının nitel analizinden elde edilen verilere göre, temalar BDT temelli beceri eğitimi oturumları ile örtüşmektedir. İlk tema "düşünce hatalarını fark etme" başlığı altında oluşturulmuştur. İkinci tema "başta çıkma stratejileri" başlığı altında oluşturulmuştur. Üçüncü tema "Sınav kaygısına ilişkin düşünceyi yeniden yapılandırma, bilişsel yeniden yapılandırma, düşünceyi değiştirme, alternatif düşünceyi kullanma" başlığı altında oluşturulmuştur.

Bu sonuçlara dayanarak FTK, sınav kaygısını azaltmada BDT kadar etkili görülmüştür. Daha önce FTK'in öğrencilerin sınav kaygısını azaltma yeteneğine sahip olduğu tespit edilmiştir. Böylece farklı kültürlerde uygulandıktan sonra sınav kaygısını azaltmaya yönelik müdahalelerin sonuçlarının birbiriyle örtüşmesi KKT'nin oldukça etkili bir terapi modeli olduğunu düşündürmektedir.

**Ethics Committee Approval:** The ethics committee approval for this study/research was obtained from Ethics Committee of Muğla Sıtkı Koçman University (Ref number: 3/3).

**Informed Consent:** Informed consent was obtained from the thirty (30) of participants.

**Peer Review:** This study was peer-reviewed.

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| Authors           | Contact                                                                  |
|-------------------|--------------------------------------------------------------------------|
| Engin Büyükköksüz | İstanbul Technical University, Turkey.<br>E-mail: buyukoksuz@itu.edu.tr. |
| Raşit Avcı        | Mugla Sıtkı Kocman Üniversitesi, Turkey.<br>E-mail: rasilavci@mu.edu.tr  |



# P4C Education in Primary School 2nd Grade Turkish Course within the Scope of Distance Education\*

Münevver Kayaalp\*\* Şerife Dilek Boyacı\*\*\*

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## Abstract

This study aimed to determine how the philosophy for children (P4C) practices integrated into the 2nd grade Turkish course within the scope of distance education in the Covid-19 were carried out, the problems encountered and solutions to the problems, and teacher/student opinions. This research designed as a holistic single case study in the case study model, one of the qualitative research methods, was conducted in a primary school in the 2020-2021 academic year. Participants were determined by criterion sampling from purposeful sampling methods. Data was collected from 13 students and the classroom teacher. The research data were collected through the diaries of the researcher/teacher, video recordings, participant and systematic observations, semi-structured interviews with the participants, and student products. The data were analysed through descriptive analysis. As a result of research, it was seen that the implementation was carried out in six stages: attention gathering, stimulus presentation, determination of the main question to be discussed, questioning group, evaluation and reinforcement activities. Problems related to distance education, language skills, P4C and other fields were identified during the applications. Solution suggestions for the problems were presented and student/teacher opinions were shared. It is suggested that P4C should be studied with different disciplines.

**Keywords:** P4C practices, Turkish education, Covid-19.

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\*\*  Corresponding Author: MEB, Bilecik, kayaalpmunever@gmail.com.

\*\*\*  Anadolu University, sdbelet@anadolu.edu.tr.

## Introduction

Philosophy, one of the disciplines that enable individuals to think independently, both provides theoretical knowledge and enables individuals to practice on their own or with the community. Philosophy is man's endeavour to understand and explain the universe based on the entirety of scientific studies. The meaning of this word, which is a combination of the words "philia" (love) and "sophia" (knowledge), can be considered "love for knowledge" (Dirican & Deniz, 2020; Eren et al., 1998). The aim is not to reach somewhere but to travel, to feel the pleasure of thinking (Droit, 2017; Kefeli & Kara, 2008).

The relationship of philosophy with all areas of life, such as daily life, human, and education, is undeniable. Within this network of relationships, philosophy and children are also interconnected. Children are natural philosophers due to their innate sense of curiosity and desire for research. One of the approaches based on children and philosophy is the P4C approach (Çiçek, 2017; Taşdelen, 2017; Wartenberg, 2018). The human endeavour to understand what he/she is curious about leads to asking questions and answering these questions. The desire to explore the world and find meaning is an action that is common to both philosophers and children and requires courage (Özkan, 2020). The innate sense of curiosity and the desire to know, understand and make sense of the world make philosophy a vital and vital action. The fact that these feelings and desires have not yet atrophied during childhood is a factor that makes it easier to philosophise with children.

In 1969, Matthew Lipman, who taught logic and philosophy at Columbia University, realised that university students had weak skills, such as reasoning, inference and philosophical thinking. He conducted various studies with his students. However, he realised that the university period was late in the acquisition of thinking skills and argued that these skills could be acquired during childhood. Lipman expanded the scope of his studies with his colleague Ann Margareth Sharp to find a solution to the current problem and conducted studies with fifth-grade elementary school students. In 1974, "The Institute for the Advancement of Philosophy for Children - IAPC" was established at Montclair State University to make the studies more comprehensive. The researchers, who started their studies by reading stories, asking questions and creating dialogues with children, tried to enable children to produce solutions and stated that being focused on producing solutions would improve logical thinking (Juuso, 2007; Karakaya, 2006; Soysal & Pullu, 2020). It is seen that the P4C approach supports various thinking skills; critical, creative, caring and collaborative thinking skills come to the fore. The phrase "Philosophy for Children" is abbreviated as "P4C" and refers to these four thinking skills that begin with the letter "C" in English (N. Peker Antepe, personal interview, 3 May 2018).

The P4C approach enables children to construct their own thinking processes with the help of pedagogically appropriate material, such as a story, news, visual, video or a

situation/event that can be encountered daily. The main aim is to create an environment for philosophical discussion on a specific topic with the help of stimuli that can attract children's attention and accompany children in building their independent thinking processes. P4C activities conducted with the help of texts develop children's ability to analyse, comprehend, infer and interpret texts, as well as their self-expression, speaking, writing, and listening skills (Direk, 2019; Lipman et al., 1980; Taş & Dikici Sığırtaç, 2018). Children's imagination, creativity and sense of curiosity are supported by the skills of asking questions, problem solving, careful thinking, detailed analysis skills, justifying ideas with facts and establishing cause and effect relationships (Altunsöz, 2021; Kefeli et al., 2021). While philosophising with children, deepening in concepts, the development of thinking skills, the development of individuals who listen to each other can be achieved.

When the studies conducted in our country are examined, it is seen that the number of studies on the subject has increased in recent years. To give an example of the studies conducted before the 2020-2021 academic year in which this research was conducted, Okur (2008) examined the relationship between assertiveness, cooperation, self-control social skills of 6-year-old children and P4C with a pretest-posttest control group experimental model. Kurşunlu (2014) worked with preschool children and teachers in a mixed-method study and examined the preschool education programme in terms of teaching thinking skills. Şavşet (2016), who worked with 51-70-month-old children, examined the effects of various inquiry-based approaches, such as P4C education, on preschool education activities. Taş (2017), working with 48-72-month-old children, examined the relationship between P4C education and theory of mind and creativity. Işıklar (2019) worked with 5-6-year-old children and examined the effect of P4C on critical thinking and problem solving.

Looking at the studies conducted with primary school children, Mazı (2008) examined the effect of thinking through stories activities on children's reading and listening comprehension in a quasi-experimental design study with 5th grade students. Akkocaoğlu Çayır's (2015) case study research aimed to explain how P4C education affected the cognitive, affective, and social development of 3rd-grade students. Karasu's (2018) study conducted with 4th-grade students in accordance with action research, examined the works of children's literature by philosophising with children and presented examples in accordance with Bloom's taxonomy. Güven (2019), who integrated the creative drama method with P4C education as a case study, worked with 9-11 age range.

Looking at the studies conducted in 2020 and later, Yüceer (2020) conducted applications on the basis of social studies and P4C activities with 5-6-year-old children in action research and aimed to find out which thinking skills were affected by the process. Pekkarakaş (2020) structured study, whose participants were 48-72-month-old children, according to the pretest-posttest control group model and investigated the effect of P4C education on creativity. Kaya (2020) worked with 2nd

and 4th-grade students in her action research and integrated P4C education with social studies and life science courses. Türksoy (2020) examined the effect of P4C education on the scientific inquiry and critical thinking skills of 5th-grade students in his mixed research model study. Korla Öztürk (2022) examined the effect of P4C education on critical thinking skills in a convergent parallel mixed design study in which the participant group consisted of 10th-grade students.

One of the international studies, Zulkifli and Hashim (2020), examined the effect of P4C education on the development of critical thinking in their research conducted with secondary school students. Ghaedi et al. (2015) studied the relationship between P4C and creative thinking skills in preschool children. Lam (2012) investigated the relationship between P4C and critical thinking skills and worked with secondary school students. Marashi (2008) examined the effect of the community of enquiry on thinking skills.

As can be seen, P4C is a field suitable for working with different age groups and integrating with different disciplines. Although it is seen that studies with primary school children have increased in recent years, it is noteworthy that they generally work with fourth and fifth graders. The studies focus on the relationship between P4C and thinking skills. Studies on teachers' views are relatively few in the primary school period. This study was conducted to address these points, which are seen to be missing in the studies conducted in the field of P4C in our country. The research is important in terms of including teachers' opinions; implementing the application at the second-grade level, which can be considered the foundation of primary school; integrating it with the Turkish course, which is one of the most basic disciplines; conducting the applications through distance education tools due to the coronavirus; and including the difficulties experienced in practice and suggestions for solving these difficulties. Language skills, which are at the core of the discipline, have been the most important factor in the selection of the Turkish course. The fact that reading, writing, listening and speaking skills directly contribute to developing P4C skills has made the lessons both easier and more efficient. Language skills and philosophy skills have shown a development that supports each other in the process. The fact that the materials to be used were books also influenced the preference of the Turkish course. The books and texts selected for philosophical enquiries provided advantages for the Turkish course.

The focus on the problems encountered in P4C education practices and solutions, the implementation of the application within the scope of distance education, and the explanation of the relationship between language skills and P4C distinguish the research from the studies in the literature. The present study was designed in accordance with qualitative research methods due to both the dominance of qualitative evaluation in the educational activities of second-grade primary school students and the qualitative characteristics of P4C. In this context, the aim of the study is to determine how P4C education practices are realised in the second-grade Turkish

course within the scope of distance education. In line with this general purpose, answers to the following questions were sought:

1. How is P4C education in primary school second-grade Turkish course carried out within the scope of distance education?
2. What are the problems experienced in P4C education practices in primary school second-grade Turkish course within the scope of distance education and what are the solution suggestions for the problems?
3. What are the opinions of teachers and students about P4C education practices in second-grade Turkish course within the scope of distance education?

## **Method**

### **Pattern**

This study was conducted in accordance with the holistic single case design within the scope of the qualitative research approach. Qualitative research designs are aimed at searching for meaning and offer the opportunity to look at social problems from the perspective of individuals and groups. Its basic stages can be listed as developing research questions, collecting data from participants in their natural environments, analysing data, and interpreting findings (Creswell, 2016). This case study aims to investigate the factors related to situations, such as environment, individual, event, process by following a holistic approach. The focus is on how the factors affect the relevant situation and how they are affected by the situation (Yıldırım & Şimşek, 2018). In this study, a case study was preferred since it was aimed to evaluate the relationship between P4C education and various factors in a holistic framework. The reason for choosing the holistic single case design from the case study model is that the unit of analysis consists of a single class, there is no comparison between groups, and P4C has its own qualitative structure for the process and result.

### **Working Group**

The participants of the study consisted of 13 students (7 female, 6 male) who were studying in one of the second-grade branches of a primary school in the Pazaryeri district of Bilecik province in the 2020-2021 academic year through distance education due to the Covid-19 outbreak and who volunteered to participate in study, and the classroom teacher of this branch. Participants were selected through criterion sampling from purposeful sampling methods. The main criteria in determining the participants were that the teacher who would carry out the application had knowledge and experience in the field of P4C, and that the teacher and students voluntarily participated in this study.

The first of the points considered in the selection of the teacher was that the teacher had received P4C training. The classroom teacher who received theoretical training in this field within the scope of in-service training is a teacher who applies P4C education in his classroom from time to time, although not at regular intervals, is willing, open to learning, and has a professional seniority of fifteen years. In addition to having theoretical knowledge, the fact that he integrated P4C in Turkish and Life Science lessons in her classroom, made applications and experienced the role of facilitator (P4C practitioner) was also effective in choosing the teacher. It is an important factor that the teacher has knowledge about the field in the process of being involved in the research, is willing to volunteer in the distance education process due to the Covid-19 outbreak and has the self-sacrificing and patient working discipline required by the research process. The teacher took part in writing the activity plans before the research, updating the activity plans as a result of expert opinions, as a facilitator in carrying out the applications, providing researcher-student-parent coordination during the research, filling in the data collection tools (teacher diary and observation form), and in the interviews at the end of the research.

The researcher was a teacher with eight years of professional seniority who has received P4C education trainer training and practitioner training. In the introductory lesson held before starting the practices, she explained the activities to be carried out to the children, explained why she participated in the lessons and explained who she was. She helped the teacher prepare and update the activity plans and templates to be used in reinforcement activities. She prepared the data collection tools together with her supervisor and presented them to the expert opinions. Updated the data collection tools according to the feedback received. Written permissions were obtained from the publishers of the works used. The researcher, who was involved in the research process as a participant observer, did not intervene in the natural flow of the process. She regularly kept records of the data collection tools and ensured data organisation. At the end of the applications, semi-structured interviews were conducted with the students and the teacher. As a result of data organisation, she worked with an expert for consistency analysis and held a confirmation meeting with the teacher.

### **Data Collection Process**

While explaining the data collection process, a basic categorisation was made as before in-class practices, in-class practices and after in-class practices. Thus, it is aimed for the reader to look at the process from a broad perspective. The data collection process of the research is presented in Table 1:

**Table 1.**

*Data Collection Process*

| Application Time          | Data Collection Process                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Before in-class practices | <p>Selection of good examples that can be used as stimuli.</p> <p>Elimination of the works used in previous research.</p> <p>Writing activity plans by integrating them with the Turkish lesson.</p> <p>Obtaining written permission from the publishers of the selected works.</p> <p>Preparation of data collection tools forms:</p> <p>Researcher Diary, Teacher Diary, Observation Record, Video Recording Transcript, Teacher Interview, Student Interview, Student Products (writing work templates within the scope of reinforcing philosophical activities)</p> <p>Obtaining expert opinions for data collection tools and lesson plans:</p> <ul style="list-style-type: none"> <li>- Two experts from the P4C field,</li> <li>- An expert in the field of Turkish,</li> <li>- Two experts in the field of research methods.</li> </ul> <p>Updating data collection tools and activity plans in line with expert opinions.</p> |
| Classroom practices       | <p>Meeting with the students, informing them about the work to be done.</p> <p>Conducting P4C sessions on 12 different stimuli in 25 lesson hours.</p> <p>Keeping records of data collection tools regularly.</p> <p>Conducting student interviews, keeping relevant records.</p> <p>Conducting teacher interviews, keeping relevant records.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| After in-class practices  | <p>Analysing the data with descriptive analysis:</p> <p>Sorting out the irrelevant data from the collected data.</p> <p>Creating a framework for descriptive analysis (sub-questions of the research were used as the main theme).</p> <p>Defining the findings (processing the data according to the sub-questions).</p> <p>Interpretation of the findings.</p> <p>Obtaining an expert opinion for the consistency review and consensus.</p> <p>Confirmation meeting with the class teacher and consensus.</p>                                                                                                                                                                                                                                                                                                                                                                                                                        |

## Data Collection Tools

The activity plans were prepared in collaboration with the researcher and the classroom teacher who carried out the implementation. Firstly, the works that could be used as stimuli in the sessions were selected. In the selection of the works, various publications, series, sets and good examples on the subject were examined. Approximately seventy artefacts were selected among the artefacts that could be used with second-grade students that could attract children's interest and attention, that were appropriate to the themes of the Turkish lesson and that had not been used in previous studies in this field. The general structure of the plans was shaped based on the P4C trainer training received by the researcher and the P4C practitioner training received by the teacher. While preparing the activity plans, the 2019 Turkish Curriculum, selected works of children's literature and the book "The If Machine" written by Worley (2019) were used. Nearly all the grade 2 outcomes and



explanations in the 2019 Turkish Curriculum were included in the plans. These outcomes were categorised according to listening/watching, speaking, reading, and writing skills. Themes of rights and freedoms, individual and society, communication, virtues, emotions, nature and the universe, personal development, science and technology, children's world were selected from the themes of the Turkish lessons.

Necessary written permissions were obtained from the publishers of the selected works. From the book *The If Machine* (Worley, 2019), *Prince and Piggy*, *Golden Finger*, *Yaman Fist*, *Frog and Scorpion*, *Sibi Stories Friends* and *Republic Island* texts were selected for this study. From the works of children's literature, six works titled *Farklı Ama Aynı* (Oral, 2019), *What Happens if I Fight* (Labbe & Gaste, 2019), *Talk to Me Little Cat* (Piquemal & Baas, 2018), *What Do You Do with a Problem* (Yamada, 2020), *Roko Puffing Little Dinosaur* (Bedford, 2019), *My Alien Friend* (Bonilla, 2019) were selected. In the reinforcement activities of the lessons, the book titled "*Felsefeyle Tanışıyorum*" by Sinan (2019) and the book titled "*Çocuklarla Felsefe Sohbetleri*" by Droit (2017) were used. While preparing the lesson plans before implementation, templates were prepared for children to do writing work after each session. These templates were turned into workbooks for each child and delivered to all children before implementation.

Data collection tools were prepared before the in-class applications. The forms were prepared in a comprehensive way that would allow semi-structured study and could be supplemented when necessary. Lesson plans and data collection tools were updated in line with expert opinions. In this context, three experts working in the field of P4C education were consulted and feedback was received from two of them. Two experts working in the field of Turkish teaching were consulted and feedback was received from one of them. Two experts working in the field of research methods were consulted and feedback was received from both of them. The observation-based data of the study were obtained through the researcher and teacher diaries and the observation record forms kept by the teacher and the researcher for the problems and solutions stage of the research. Through the diaries, notes were taken from every area of the process, and through the observation record forms, only the problems and solutions were focused. The fact that the teacher and the researcher kept diaries and observation records throughout the process made it easier to look at the practice from multiple perspectives. The researcher was involved in the process as a participant observer. Observations were made systematically. Video recordings of the live lessons with the students were taken and it was aimed to reach objective data. After each lesson, the video recordings were transcribed. After the end of the applications, these transcripts were analysed several times, and the data were classified. Interviews were conducted with both the students and the teacher at the end of the lessons and followed up with semi-structured interview forms. The items in the interview forms were organised according to the sub-purposes of the research. The interviews were conducted through the online interview platform, where the lessons were also held.

The teacher implemented the activity plans in the Turkish lesson with the distance education tool for 25 lesson hours. P4C sessions were organised over 12 different stimuli. Before the implementation, a live lesson was also organised to introduce the researcher to the students and to inform the students. Data were obtained through observation, interview and document analysis methods. Document analysis, a supportive method, was used to analyse student products and examine activity plans, video recordings, teacher diary and researcher diary to maintain systematicity.

### **Data Analysis and Interpretation**

A descriptive analysis technique was used to analyse the research data. In descriptive analysis, data are grouped and interpreted according to predetermined categories or themes. The aim is to present the findings to the reader in an organised and interpreted manner. The data obtained through observation and interviews in this research can be presented according to the research questions, according to the questions used in interviews and observations, or according to the dimensions of the process (Yıldırım & Şimşek, 2018). In this study, the data obtained from interviews, observations and document analyses were presented in accordance with the research sub-questions. The defined findings were interpreted with the researcher's notes. During the process of collecting and analysing the data, the researcher was in constant communication with the teacher who carried out the application. The features that characterise the case study were tried to be described. The teacher-student and student-student conversations during the implementation lessons, the observation notes kept by the teacher and the researcher during the process, and the student and teacher interviews at the end of the implementation were read and re-read during the analysis process. The irrelevant data was eliminated and the data were classified. The data obtained from the readings were divided into themes in accordance with the research questions and causal associations were made. During the analysis process, a field expert was consulted for consistency analysis and a consensus was reached. Similarly, a confirmation meeting was held with the teacher and a consensus was reached with her about the findings as defined and interpreted.

The implementations started on 15.02.2021 with the introductory lesson and ended with the teacher interview on 30.04.2021. Observations were made during the introduction lesson lasting 32 minutes and the philosophy sessions lasting 667 minutes. The student interviews lasted 157 minutes and the teacher interviews lasted 28 minutes. 52 pages of the researcher diary, 26 pages of the teacher diary and 21 pages of the observation form were kept. 26 pages of macro and 97 pages of micro transcripts of the video recordings were made.

### **Credibility and Ethics**

The necessary ethics committee and application permissions were obtained. Written permissions were obtained from the students, their families and teachers. Written

permissions were obtained from the publishers of the utilised works and the publishers were informed about the research. In addition, the names of the participants were changed and used in this study.

Credibility can be expressed as the suitability of the methods followed to the subject under investigation and whether they serve the purpose. Research results should represent reality. Findings should be consistent and meaningful and should not contain contradictory or unexplained situations (Baltacı, 2019; Yıldırım & Şimşek, 2018). In this study, a detailed description, and expert review at the beginning of the application were used to ensure credibility. The data were described in detail in accordance with reality, the data were collected on different days to ensure triangulation, and the perspectives of all individuals were included in the research. For the prepared lesson activity plans and data collection forms, the opinions of seven field experts were requested before the implementation and feedback was received from five of them. The fields of study of the experts are explained in the data collection process section of the study. To ensure the applicability, generalisability and transferability of the findings, detailed descriptions and purposive sampling techniques were used.

Consistency can be expressed as other researchers reaching the same or similar results with the same data or data collection tools. Since research in the field of social sciences shows dynamic and variable characteristics, they cannot be replicated exactly, but similar studies can be conducted when the necessary environment is provided (Baltacı, 2019; Yıldırım & Şimşek, 2018). To ensure consistency in this research, different data collection tools, systematic and detailed expression styles, and expert review techniques at the end of the application were used. At the end of the application, an opinion was obtained for consistency review from a field expert who followed the research and had a good command of scientific research methods. The researcher and the relevant expert independently carried out the thematisation study through descriptive analysis of the raw data. In descriptive analysis, data are summarised and interpreted through previously determined themes. The themes in the presentation of the findings were formed according to the research questions. After the evaluations were made, the themes created by coming together with the experts were compared. As a result of the comparisons, it was determined that there was a consensus in the evaluations of the researcher and the expert. To ensure confirmability, which is related to objectivity and impartiality, participant confirmation, direct quotation sharing and record-keeping techniques were used. After completing the application, the data were organised systematically and a confirmation meeting was held with the teacher. A consensus was reached on all of the findings.

## Findings

### Findings and Comments on How P4C Practices are Realised

There are various implementation steps recommended by different experts in P4C education practices. In this study, the process was integrated with P4C in accordance with the second-grade Turkish lesson and themes. Literature studies were analysed and lessons were planned in the most comprehensive way to include all stages of a lesson process. While planning, the SAPERE approach (Mccall, 2017), the implementation steps suggested by Direk (2002), the implementation steps suggested by Gür (2011) and the implementation steps suggested by Gregory (2008) were considered and the basic stages of the lesson plans were developed based on these approaches. These approaches are detailed in the conclusion and discussion section of the study. The lessons were conducted in six phases during two class hours per day. Throughout the whole process, children were reminded of the session rules necessary for a healthy discussion environment and developing a community of enquiry culture in children was ensured. The phases did not have a specific duration. On some days, the questioning group including the enquiry activities lasted longer, while on another day the reinforcement activity took more time. Despite the variations in the durations, it was noteworthy that there were constant phases in each lesson. These stages were attention gathering, stimulus presentation, determination of the main question to be discussed, inquiry group, evaluation, and reinforcement of philosophical activity practices.

In face-to-face sessions, in the first stage called circle time, all participants sit in the "O" seating arrangement. This arrangement symbolises that the participants are in an equal, democratic environment and that no one is superior to the other. Since it enables the participants to see each other, it ensures that the communication channels remain open. Although the distance education tool enabled the children to see each other, it was not sufficient to monitor nonverbal communication and instant reactions as in face-to-face sessions. For this reason, circle time which is the characteristic phase of P4C conducted with the distance education tool, could not be fully implemented in this study. Before the application, each storybook was turned into a PowerPoint presentation with its visuals so that all children could easily see the stimulus text. The presentations were shared with the students by screen sharing at the beginning of the lesson. Attention-gathering activities were carried out on the cover or visuals of the story. Below, an example of the questions to draw attention to the story in each session is shared in Image 1:

## Image 1.

Example of Story Attention Drawing Questions (Oral, 2019)



The first stage, attention gathering corresponds to the preparatory activities of the Turkish lesson. The aim is to draw children's attention to the activity, mobilise prior knowledge, create interest in the lesson, and prepare children for the thinking process by making preliminary preparations. The attention-gathering stage was realised in the sub-themes of asking the question to draw attention to the story, questioning whether the text had been read before, taking students' predictions based on the visual, sharing students' ideas, and questioning the words whose meaning was unknown.

Stimulus presentation, which is the second stage in the application, corresponds to the listening comprehension and visual reading skills of the Turkish lesson. It is the stage where comprehension, text recognition/examination, learning through text and self-expression skills occur in Turkish lessons. The stimulus presentation stage was realised in the sub-themes of sharing the text with its visuals (reading and listening), questioning the text with open questions, and sharing students' ideas.

The third stage of the application, the stage of determining the main question to be discussed, was carried out for listening comprehension and speaking skills in the Turkish lesson. The stage of determining the main question to be discussed took place in the sub-themes of children creating their own questions, sharing the questions on the screen, guiding the teacher to create philosophical questions, associating hidden questions with the main question, and selecting the main question to be discussed.

In the fourth stage of the application, the questioning group was carried out for listening comprehension and speaking skills of the Turkish lesson. The main questions selected to be discussed analysed in depth by the participants. The philosophical dimension of the topic is emphasized, and a more philosophical questioning process is built. The discussion of the selected questions (philosophical enquiry process) took place in the sub-theme of utilising facilitating strategies in justifying ideas.

The fifth stage of the application, the evaluation stage, corresponds to the listening comprehension and speaking skills of the Turkish course. This stage, which took place

in the sub-theme of asking and answering formative self-evaluation questions, is a section in which children actively participated with hand signals (thumbs up/down). The formative self-assessment questions mentioned by Gregory (2008) were utilised.

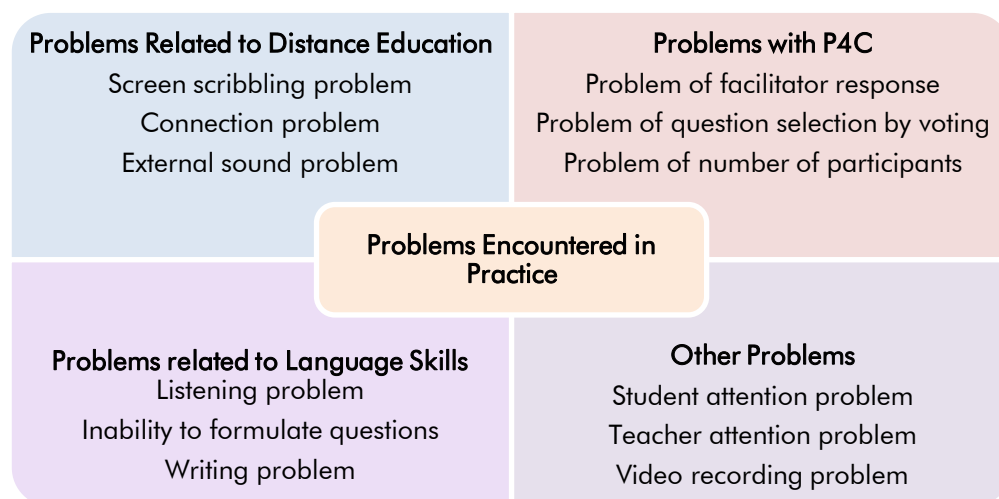
The sixth and final stage in the implementation, reinforcing philosophical activities, is not a compulsory part, but it serves a supportive function. Philosophically based reading and writing activities were carried out individually and silently due to the distance education process. They were carried out for the reading and listening comprehension, writing, and speaking skills of the Turkish course. It was realised in the sub-themes of individual silent reading activities with different texts, students' writing activities through the work file, and the sharing process of questioning answers.

### Findings and Comments Related to Problems and Solution Suggestions

The problems in the practices were monitored daily with observation record forms and at the end of the process, it was determined that they were concentrated in four areas. These problems were not caused by the specified areas but were related to these areas. The problems encountered in practice are shown in Figure 1:

Figure 1.

#### Problems Encountered in Practice



#### Problems and solution suggestions related to distance education

Screen sharing was done in the applications. Students scribbling on the screen was a problem observed in every lesson. In the lesson (19.02.2021) in which the story "Little Dinosaur Puffing Roko" was used as a stimulus, an example on the subject was shared in Image 2:

**Image 2.***Stimulus Presentation Phase Screen Scribbling Problem*

As a result of scribbling on the screen, the teacher warned the students, cleaned the screen and continued to work and removed the students who ignored the warnings from the lesson. However, the students were re-engaged in the lesson. Removing the students from the lesson was not effective because they continued to doodle. The teacher expressed the screen scribbling problem in her diary as follows; "The most difficult thing for me today was the scribbling on the screen. I warned my student, but it was not effective. There were open questions on the slide show, and I missed the first question because of the scribbling (Teacher's diary. 19.02.2021)."

Another problem was the technical problems experienced in the internet connection. Due to the connection problem, the participants could not access the live lesson, there were breaks during the lesson and there were problems with audio/video transmission. Özge, one of the students who had a problem with this issue, expressed her problem by saying, "Teacher, your voice was echoing a lot; I thought it would never end for a while. Eventually, it got better (Video recording, 26.02.2021)." When this problem was experienced, the problem was tried to be solved by contacting customer service.

Regarding distance education, it was noticed that various sounds coming from students' homes caused noise and that these ambient sounds disrupted the flow of the course. There are students with and without their own rooms. However, this situation was not a definite factor for ambient sounds. Both students who have their own rooms and students who do not have their own rooms can make noise and this situation is reflected as noise in the lesson. The teacher warned the students with intense ambient noises. If the problem continued, the teacher muted the student. At the end of the lesson, the teacher contacted the parents and asked them to be more sensitive.

**Problems related to P4C and solution suggestions**

In philosophical enquiries, the facilitator (class teacher) should approach the ideas of the participants impartially. Feedback should be given to the ideas with reflective expressions. However, this situation was sometimes not realised. In this case, the



teacher said, "I want to thank you all. It is not right for me to make such comments but thank you all very much. I didn't think about what you said while I was reading this story. It was really nice that you said 'I won't run away; I will face it' (Video recording, 26.02.2021)." When the teacher realised that he was praising ideas, he was self-critical and stated that this was not correct. When he gave praise feedback to one student, he used similar congratulatory expressions for other students. At other times, it was observed that he used humour and continued the lesson by joking.

A series of difficulties encountered by the students during the voting process in the stage of determining the question to be discussed about the P4C area were observed. To create a democratic environment and for everyone to have a say, it was suggested that the group choose the question to be discussed by voting. However, it was noticed that children tended to choose the question they asked themselves during the voting process. The teacher tried various approaches in the face of this situation. Among these, there are various applications, such as not voting for the question they ask themselves, taking the opinion of each student, the right to use only two votes, and one student choosing the question. However, the most valid solution, "not voting for one's own question," was presented by a student named Özge. Upon the teacher's suggestion: "Let those who say let's answer the first question raise their hands." Özge said: "I think we should not raise our hands for our own question. Let this be a rule (Video recording, 29.03.2021)."

Another problem with P4C is that the large number of participants negatively affects the sessions. Regarding this issue, the researcher's note is as follows; "In crowded groups, problems, such as not listening to the speaker, wanting to talk in off-topic areas, screen scribbling, and distraction, were observed more frequently (Researcher's diary. 05.03.2021). While making an enquiry in a crowded group, children started to forget their own statements and became impatient. The teacher gave the children time to think again and remembered that they could take notes in order not to forget their ideas.

### **Problems and solutions related to language skills**

The existence of a series of problems related to listening, speaking, reading and writing skills, which are the basic language skills, drew attention. Within the scope of the listening problem, situations, such as students trying to speak at the same time, always wanting to speak themselves, singing loudly, and not being able to understand what the speaker said, were observed. When the students had difficulties listening, the teacher warned the students with positive expressions about speaking in turn and respecting the speaker. The teacher muted the students who insisted on not listening despite the warnings. As the culture of philosophical enquiry developed over time, students warned their friends who deliberately caused the noise. Regarding the teacher's warnings, "I will ask questions to all of you, please let's talk when it is your

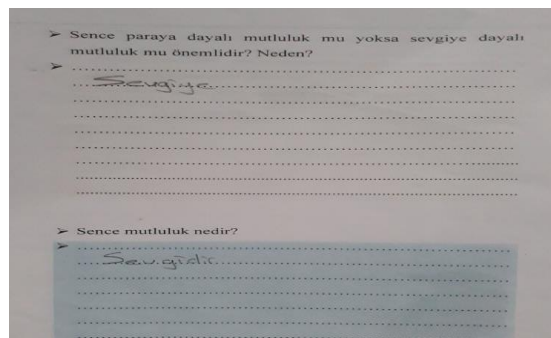
turn, have a pen and paper with you and write down what comes to your mind. Let's not interrupt while listening to our friend (Video recording, 08.03.2021)."

In addition to the listening problem, it was noteworthy that the students could not form a question sentence at the stage of creating a question proposal to be discussed. The children stated the question they wanted to ask as a statement sentence. The teacher helped the children turn the expressions into question sentences.

Difficulties were encountered in individual reading and writing activities in reinforcing philosophical activity practices. Some students did not want to do the writing activities. Some students completed the activities ahead of time. Students who did not want to do the writing work were not forced, and it was stated that they could complete the work whenever they wanted. The work of a student in this situation is shared in Image 3:

### Image 3.

*An Example from the File of a Student Who Doesn't Want to Do Writing Work*



Students in this situation were encouraged, and when they still did not want to write, they were not challenged. The second type of difficulty was that some students were too eager and did all the writing work before the lesson. The students who completed the writing work before the lesson could not reflect their changing ideas in their work during the philosophical enquiry process. Students were reminded that they could rewrite if they wished.

### Other problems and solution suggestions

The teacher and the students had attention problems and the students were hesitant due to the video recording. The problems, such as screen scribbling, connection problems, and students not listening to the speaker at the same time, distracted the teacher's attention. The solution to the teacher's attention problem is to take precautions and start each lesson prepared. The teacher's entering each lesson prepared, exchanging ideas with the researcher, and doing additional readings on the philosophical topic contributed to the problem's solution.

Students, on the other hand, had difficulty in focusing on the lesson due to various reasons. In addition to the mentioned problems, students had difficulty in focusing on live lessons due to their home environment. The teacher reminded the students who were distracted about the situation. In cases where the children started to have difficulties during the investigations and their attention was distracted, the evaluation phase was started. One-to-one dialogue with the children helped them to refocus.

The last type of problem emphasised was the hesitation of the students during the video recording. A sincere dialogue was established with the students before and after each lesson. However, as soon as the video recording started, the children left their lively and cheerful moods aside and displayed a quieter and more serious attitude. It was observed that the students were more relaxed and happier when there was no video recording. Although video recording did not affect the flow and content of the lessons, it was noticed that some students were afraid of the video. Regarding this issue, the teacher noted in his diary; "Today, we chatted with the children before the lesson. The children love the free conversations before and after the lesson (Teacher's diary. 08.03.2021)." Similarly, the researcher recorded her observations on this issue on another day; "While waiting for all the children to attend the lesson, we had the chance to chat with the children who came. I can say those 5-10 minutes of free conversations before the lesson increases the students' interest in the lesson (Researcher's diary. 22.02.2021)."

### **Findings and Comments on Teacher and Student Opinions**

When the teacher's general views on P4C were analysed, it was seen that he had a prejudice against its implementation in the second grade at first. In the process, his perspective changed in a positive direction:

"Philosophy itself is a scary word. When we say philosophy, I think of Descartes/Socrates but P4C is not like that. In P4C, to develop inquisitive, critical, and creative thinking, the aim is to give children a topic, a picture, or a story and to enable them to think critically, discuss and generate questions among themselves. About the second class, when you came to me with this proposal, I was actually not very sure. I had an approach like 'I can't do philosophy, so how can children do it!' but I realised that children think better than me. The children had sentences and thoughts that made me say, 'Oh yes, it is like this' (Teacher Interview, 30.04.2021)."

It was determined that the students' general views on P4C were positive. It was observed that the children characterised the investigations as very nice, fun, good, effective, and useful. In this regard, Çisem said; "I think it was very nice, I had a lot of fun. Because when we do such lessons, our reading accelerates. So, I was happy, I had a lot of fun (Student Interview, 24.04.2021)."

Regarding the implementation of P4C in Turkish lessons, the teacher stated that Turkish lessons changed after the applications. He emphasised that only grammar subjects cannot be taught with P4C. The answers given by the students to this question are as follows: Mert; "I liked the story listening activity and our teacher reading the

story. I had fun asking the questions I was curious about (Student Interview, 26.04.2021)." Deniz; "I could not forget the activity of completing the story with an uncertain ending (Student Interview, 27.04.2021)." Nuray; "I liked the reading and poetry writing activities; my reading accelerated (Student Interview, 29.04.2021)." Berkay; "I liked discussion times, expressing my ideas (Student Interview, 27.04.2021)."

The teacher stated that students developed attentive attitudes in thinking and expression skills. He stated that P4C supports students' basic language skills. Students' expressing themselves orally and in writing, listening to each other and the teacher, developing opinions, respecting others' opinions, developing attentive thinking and behaviour have changed positively.

The students stated that they were happy to see their friends, the teacher and the researcher during the lessons and that they liked attending the lessons. In the formative self-evaluation questions, they found the hand signals in the form of 'agree-disagree' entertaining. The students stated that the stories, poems, and pictures in the lessons were different and that their reading and writing habits changed. In this regard, Mert said, "I learnt how to learn. Then I listened to everything well (Student Interview, 26.04.2021)." Çisem; "I learnt a lot, I shared my thoughts while asking questions (Student Interview, 24.04.2021)."

All the students expressed that they experienced positive emotions throughout the process. Most students said that they felt "good and beautiful." Although the word "nice" is not exactly an expression of emotion, it was understood from the students' explanations that they wanted to describe the state of being pleasant. Some students explained that they felt happy, excited, and curious. These moods, in the classification of positive and vivid emotions, were frequently observed throughout the lessons. Deniz; "I was happy; I was never bored (Student Interview, 27.04.2021)." Nuray; "I felt happy because we are learning new things (Student Interview, 29.04.2021)."

## Conclusion and Discussion

In relation to the first question of this research, which was conducted to reveal the way P4C practices were carried out in the second-grade Turkish course within the scope of distance education, it was seen that the practice was carried out in six stages: attention gathering study, stimulus presentation, determination of the main problem to be discussed, questioning group, evaluation and reinforcing philosophical activities. This result is similar to the stages of presenting the stimulus, determining the crucial points, questioning group, evaluation and reinforcement studies suggested by Gür (2011) and the stages of presenting the stimulus, determining the subject/concept/questions to be discussed, questioning community, evaluation and reinforcing philosophical activities and practices suggested by Gregory (2008). The contents of the stages are also mostly overlapping. Gür (2011) recommends activities, such as games, drawing, and discussions with family members regarding the philosophical topic addressed as

reinforcement activities. Since this research was integrated with the Turkish course, writing activities specific to this field were preferred in reinforcement activities.

The application steps suggested by Direk (2002) are categorised under two headings. The first part is reading and discussion of the text, the second part is exercises/discussion topics/writing topics. The first part, reading and discussion of the text, develops based on a Socratic dialogue led by the students. First the teacher reads the text, then the students take turns reading a sentence or a paragraph from the text. Then the students act out the text as much as they can remember. The students generate questions about the read passage, which are written on the board with the name of the questioner. The questions are voted on and a discussion is initiated with the question that receives the most votes. The process is continued by building new ideas on the answers received. In this study, students were not allowed to read and act out the text; other practices were carried out. The second section, exercises/discussion topics/writing topics, allows children to work both individually and in groups. With the exercises, a new discussion can be developed based on the answers given by the children to the questions. It is not aimed to agree on a point in the discussion. It may be necessary to prioritise timid students and praise them to encourage them. In writing activities, the teacher can share and evaluate the work of at least one child. In this study, the stages mentioned above were carried out. Although it was aimed not to include expressions of praise and criticism by the teacher in the practices, the teacher used expressions of praise from time to time during the process. Writing activities were evaluated not only by the teacher but also by all participants.

Ten steps are suggested for practitioners to follow in the SAPERE approach (Mccall, 2017). These ten steps are listed as preparation, presentation, reflection time, conversation, formulation/identifying questions, posing questions, selection/voting, first words, construction, final words. The preparation phase includes circle time, sharing session rules, warm-up games. In the presentation phase, the material determined as stimulus is shared with the group. During the thinking time, children develop their own thoughts about the stimulus and if they wish, they can write them down with various techniques (concept map, mind map, keyword listing etc.). In the conversation phase, children can share their thoughts with large and small groups. In the formulation step, children's questions are written on the board with their names. In the formulation stage, each question is briefly explained without making a choice and new questions can be added if any. After the selection/voting phase, in which the question to be discussed is chosen with various strategies, the first words are spoken. Here, the selected question is discussed. In the construction phase, the questioning is deepened in the teacher's presence. In the last word stage, everyone first thinks silently and then shares their last thoughts they want to explain. This approach allows children to practice thinking both individually and in small groups. However, within the scope of the research, discussions were held with large groups and discussions with small groups were not possible. The concept map was applied in two sessions. This

technique, which facilitates the concretisation and association of ideas from children, was appreciated by both teachers and students.

The works used were associated with the themes of rights and freedoms, individual and society, communication, virtues, emotions, nature and universe, personal development, science and technology, and children's world, among the themes of the second-grade Turkish course. Dumanlı Kadızade and Aslan (2019) stated that inquiries can be made through basic concepts for children to make sense of life. Among these basic concepts, concepts, such as justice/injustice, girl/boy, free/not free, nature/pollution, courage/fear and truth/lie were among the concepts discussed with children within the scope of this study. In this way, it was ensured to develop the ability to think bilaterally, to talk about a concept with its opposite, and to develop opinions on issues that do not have a single answer, which Droit (2019) emphasises.

In relation to the second aim of the research, problems related to distance education, P4C, language skills and other areas were identified and solutions to these problems were tried to be put forward. Problems related to distance education include children's scribbling on the screen while the teacher is sharing the screen, connection problems and external voices interfering with the environment. Among the solutions to these problems, determining who will intervene on the screen during screen sharing in the distance education tool and making authorisation restrictions were determined. When there was a connection problem, customer service was contacted. When the external noise problem was experienced, it was aimed to communicate with the families and to raise awareness of the families about the effect of noise on student attention in the distance education process. As Demir (2014) and Elcil and Şahiner (2014) stated in their studies, students take full responsibility for learning in the distance education process and therefore may experience a loss of motivation from time to time. Within the scope of the lessons carried out, it was observed that there were students who had internal difficulties in motivation and participation in the course.

Among the problems associated with P4C are the facilitator's response, difficulties voting and question selection, and the number of participants negatively affecting the investigation. Among the solutions to these problems, it was observed that in the facilitator's reaction, the teacher used self-criticism and directed praise to all participants. Scholl et al. (2009) stated that P4C investigations change teachers pedagogically and positively affect the perception of teaching and student participation. Within the scope of the research, the change was observed in the teacher who carried out the application as stated. Bolat (2021) stated that social rewards, such as praise and appreciation, create addiction in children and create a need for approval. Every person wants to be accepted, but this acceptance should take place in a non-judgemental and impartial manner. Healthy communication and interaction can be created with non-judgemental and unconditional feedback. Regarding the problems encountered during the selection of questions by voting, the students suggested the condition of not voting for the question they asked themselves.



In cases where the number of participants negatively affected the process, the session rules were frequently reminded, and warnings were given to the participants to respect each other. Wartenberg (2018) states that the number of participants in philosophical discussions at the primary school level can vary between 6-12 people. Direk (2002) emphasises that the number of participants should be between 10-15 people. This number varies according to the researchers and the nature of the group. Basic rules, such as giving clear answers to questions, listening carefully and quietly to what is said, thinking about what is said, deciding whether to agree or disagree with the ideas and thinking about the reasons for this, respecting everyone's opinion, knowing that everyone has valuable contributions; thinking and having fun together should be present in investigations. These rules were observed in practice within the scope of the research. However, despite the existence of the rules, the reason why the number of participants negatively affected the sessions is thought to be the fact that the application was carried out through distance education rather than face-to-face. Because in face-to-face studies, it is easier and faster to respond to different participants at the same time with verbal and non-verbal expressions. Since this situation is more limited in distance applications, the situation has become more difficult.

Problems related to language skills include not listening to the speaker, difficulty forming questions and reluctance to write. Belet (2008) describes the act of writing as "the illustrated form of the word." Writing is a concrete expression of language and thinking. By writing, children can contribute to the development of their skills of establishing cause-effect relationships, thinking logically, observation and imagination. This has been effective in the preference of writing activities at the reinforcement stage. Gasparatou and Kampeza (2012) stated that P4C activities improve children's language skills, increase the number of words, and improve their expression skills in agreeing or disagreeing with the ideas presented. Youssef et al. (2016) stated that P4C activities positively affected reading comprehension skills. Within the scope of the research, it was observed that students' expression skills and the ability to analyse and understand the concept from different perspectives developed throughout the process. However, despite the development of reading, comprehension and speaking skills, problems were encountered in listening skills. For this problem, warnings were frequently given positively. Students who had difficulty in forming questions were helped to express themselves. Örs (2019) suggested that problems arising in the reading and writing processes may arise from different reasons. Family problems, an unfavourable social environment, the student's learned prophecy and being educated in a class that is unsuitable for his/her level can cause problems in the reading and writing processes. Within the scope of this study, it was not possible to reach family problems, but the effect of unfavourable environmental conditions was observed. There are environmental factors that do not allow the student to participate regularly in the distance education process.



When the results of the last question of this research, which is the opinions of teachers and students, were examined, it was found that the participants expressed positive opinions about the philosophical enquiries in Turkish lessons. This situation is similar to Turhan's (2021) study, in which students enjoyed P4C activities and teacher and parent opinions were also positive. In addition, when student opinions are approached from a critical perspective, it can be inferred that children are not aware that they are practicing philosophy. However, this was not considered a problem in the process. Although there were philosophy sessions in the children's past, this was the first time the children carried out regular and systematic practices within the scope of this study. Children who had just started doing philosophy were not expected to base their views on the whole process on detailed arguments.

One of the limitations of the present study is that the implementation has been carried out in the second semester of the 2020-2021 academic year in a primary school in Pazaryeri district of Bilecik province, with 13 students (7 girls & 6 boys), who were studying through distance education due to the Covid-19 outbreak and the teacher of the selected branch. Not all of the themes of the Turkish lesson were included in the application; nine themes were selected, and the plans were limited.

### Recommendations

The first recommendation is to work with different disciplines and age groups in P4C education.

Both in face-to-face and distance education, the environment and content should be suitable for children. Students' interests, wishes and needs should be considered in investigations.

Students should be included in the solution process when various problems are encountered.

At the end of the investigation, discipline-specific reinforcement can be made.

Interactive reading techniques can be used to increase the interest of children in young age groups.

P4C activities can be carried out to develop caring and collaborative thinking skills.

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## Genişletilmiş Türkçe Özet

Çocuklar için felsefe eğitimi (ÇİFE), özünde felsefi bir durum barındıran uyaran yardımıyla düşünme süreçlerinde çocuklara eşlik etmeyi sağlayan bir yaklaşımdır. Konuyla ilgili yapılan çalışmalar incelendiğinde genellikle ÇİFE ve düşünme becerileri arasındaki ilişkinin sorgulandığı, çalışma grubunu okul öncesi dönem katılımcılarının oluşturduğu görülmektedir. ÇİFE temelinde gerçekleştirilen bu araştırmada, Covid-19 salgını sürecinde uzaktan eğitim kapsamında ilkokul ikinci sınıf Türkçe dersiyle bütünleştirilen ÇİFE uygulamalarının nasıl gerçekleştirildiğini; karşılaşılan sorunları ve sorunların çözümlerini; uygulamaya dair öğretmen/öğrenci görüşlerini belirlemek amaçlanmıştır. Temel dil becerilerine odaklanması, uygulamalarda karşılaşılan sorun ve çözümlere yer verilmesi, uzaktan eğitim kapsamında gerçekleştirilmesi sebebiyle bu araştırma literatürdeki diğer çalışmalardan ayrılmaktadır.

Nitel araştırma yöntemlerinden durum çalışması modelinde, bütüncül tek durum çalışması olarak desenlenen araştırma, 2020-2021 eğitim öğretim yılında Bilecik ili Pazaryeri ilçesindeki bir ilkokulda gerçekleştirilmiştir. Katılımcılar amaçlı örneklem yöntemlerinden ölçüt örneklemeyle belirlenmiştir. Veriler 7 kız, 6 erkek toplam 13 öğrenciden ve sınıf öğretmeninden toplanmıştır. Ölçüt örneklemedeki en önemli etken uygulamayı gerçekleştirecek olan öğretmenin ÇİFE alanında eğitim almış olmasıdır. Araştırmanın verileri araştırmacı ve öğretmen günlükleri, video kayıtları, katılımlı ve sistemli gözlemler, öğrencilerle ve sınıf öğretmeniyle yapılan yarı yapılandırılmış görüşmeler ve öğrenci ürünleriyle toplanmıştır. Veriler betimsel analiz yoluyla çözümlenmiş olup araştırma sorularına uygun temalaştırma yapılarak sunulmuştur.

Sınıf içi uygulamalar öncesinde araştırmacı ve uygulamayı gerçekleştiren sınıf öğretmeni işbirliğiyle uyaran olarak kullanılabilecek iyi örnekler seçilmiştir. Örnekler arasından daha önce yapılan araştırmalarda kullanılan eserler elenmiş ve seçilen eserlerin yayıneverlerinden yazılı izin alınmıştır. Etkinlik planları Türkçe dersiyle bütünleştirilerek yazılmıştır. Veri toplama araçları hazırlanmıştır. Ders planları ile veri toplama araçları için beş uzmandan görüş alınmış ve gerekli güncellemeler yapılmıştır. Öğrencilerin yapılacak çalışma hakkında bilgilendirilmesiyle sınıf içi uygulamalara başlanmıştır. 12 farklı uyaran üzerinden 25 ders saatinde çocuklar için felsefe oturumları gerçekleştirilmiştir. Öğrenci ve öğretmen görüşmeleri yapılarak sınıf içi uygulamalar tamamlanmıştır. Ulaşılan veriler betimsel analiz yoluyla incelenmiştir. Veriler arasından ilgili olmayanlar ayıklanmış, analiz için bir çerçeve oluşturulmuştur. Araştırmanın alt soruları ana tema olarak kullanılmıştır. Bulgular tanımlanmış, yorumlanmıştır. Bir alan uzmanından tutarlılık incelemesi için görüş alınmış, sınıf öğretmeniyle teyit toplantısı yapılmıştır. İkisiyle de görüş birliği sağlanmıştır.

Analiz sonucunda ilkokul ikinci sınıf Türkçe dersinde ÇİFE uygulamaları; dikkat toplama, uyaran sunumu, tartışılacak ana sorunun belirlenmesi, sorgulama grubu, değerlendirme ve pekiştirici etkinlikler olmak üzere altı aşamada gerçekleşmiştir. Bu aşamaların temel dil becerileri ve Türkçe dersiyle olan ilgisi bulgular kısmında

açıklanmıştır. Uygulamaları sırasında uzaktan eğitimle, dil becerileriyle, çocuklar için felsefe eğitimiyle ve diğer alanlarla ilişkili sorunlar gözlenmiştir. Uzaktan eğitimle ilgili sorunlar arasında ekranın karalanması, bağlantı sorunu ve dış seslerin derste gürültüye yol açması vardır. Dil becerileriyle ilgili sorunlar arasında konuşan kişiyi dinlememe, soru cümlesi oluşturmama ve yazma çalışmalarında isteksizlik gözlenmiştir. ÇİFE ile ilgili sorunlar arasında kolaylaştırıcının tepkisi, oylama ile soru seçiminde zorlanma, katılımcı sayısının uygulamayı zorlaştırması gibi güçlükler vardır. Diğer sorunlar ise öğretmen ve öğrencilerin dikkatinin dağılması ve video kaydı sırasında öğrencilerin çekinmesi olmuştur. Sorunlar için işe dönük ve pratik çözüm önerileri paylaşılmıştır. Öğretmenin ÇİFE uygulamalarına yönelik ilk başlarda önyargısının olduğu ancak bakış açısının olumlu yönde değiştiği gözlenmiştir. Öğrenci görüşlerinin ise tüm süreç boyunca olumlu olduğu fark edilmiştir.

ÇİFE uygulamalarının farklı yaş ve farklı disiplinler ile çalışılması çeşitlilik açısından iyi olacaktır. Sorunların çözümüne çocukları dâhil etmek hem ÇİFE hem de pratiklik açısından önemli görülmektedir. Uygulamalarda kavram haritası, etkileşimli okuma gibi farklı teknikler kullanılırsa çocukların ilgisini kazanmak kolaylaşacaktır.

**Ethical Permission:** Before starting the study, necessary consent was taken from Anadolu University (Date: 30.12.2020, Protocol No: 72716).

**Informed Consent:** Informed consent was obtained from the participants.

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| Authors             | Contact                                                |
|---------------------|--------------------------------------------------------|
| Münevver Kayaalp    | MEB, Bilecik.<br>E-mail: kayaalpmunevver@gmail.com.    |
| Şerife Dilek Boyacı | Anadolu University.<br>E-mail: sdbelet@anadolu.edu.tr. |



# The Connection Between Forest School and Preschool Programs: A Comparison Study\*

Filiz Aydemir\*, \*Vahide Yiğit Gençten\*\*

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## Abstract

The forest school approach, implemented in an increasing number of schools globally, offers opportunities for children to explore and engage in activities in natural settings. In the preschool period, considered critical for children's overall development at the beginning of their lives, being intertwined with nature supports children's becoming active learners. In early years education, in this manner, programs are formed based on children's developmental and individual needs through the Preschool Education Program developed by the Ministry of National Education and implemented in 2013 to engage students actively. As all early-year institutions in Turkey are required to follow the guidelines in this program, this study aims to examine the connection between the program and the forest school approach to highlight similarities and differences so that the place of the forest school approach in the program can be understood. The data consisted of program documents and an extensive literature review on the forest school approach. In addition, in order to analyze the data, we engaged in document analysis. Results showed that the preschool program and the forest school approach coincided. Therefore, it is suggested that preschool programs in early years classrooms should include more nature-related activities.

**Keywords:** Preschool education, preschool curriculum, forest school approach.

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\*\*  Corresponding Author, Adiyaman University, Faculty of Education, Adiyaman, faydemir@adiyaman.edu.tr.

\*\*\*  Adiyaman University, Faculty of Education, Adiyaman, vgencten@adiyaman.edu.tr.



## Introduction

The importance of preschool education has increased in Turkey following the global trend over the years; as a result, studies based on the preschool program have increased as well (Ahi & Kahriman-Pamuk, 2021; Güven & Yılmaz, 2017; Ocak & Korkmaz, 2018). To this end, efforts to make preschool education compulsory are also on the agenda (Kiz & Sincar, 2020; Küçükturan, Altun & Altun, 2013). Therefore, considering the increasing number of children attending early years institutions and the needs of current students, an inclusive preschool education program valuing nature-based elements can provide a positive reflection for children in early years education. For this reason, understanding the place of the forest school approach as one of the most common approaches to nature-based education in a National Preschool Program can help early years educators and teachers adapt and adjust their classroom practice accordingly.

The forest school approach is based on children's education through bonding with nature for all age groups, from preschool to older ages, allowing children to connect with nature and supporting their overall development, which is also known to have lifelong effects (Garden & Downes, 2021). Many pioneers in the early years of education have highlighted the importance of the children-nature bond, such as Froebel, Dewey, and Montessori (Cutter-Mackenzie-Knowles et al., 2020). Nature is valued in these terms to offer children hands-on experiences (Leather, 2018), risk-taking and physical activities (Connolly & Haughton, 2017), places and resources to explore (Bal & Kaya, 2020), opportunities to communicate, collaborate, and cooperate (Cutter-Mackenzie-Knowles et al., 2020), to critically think and develop cognitive development (Garden & Downes, 2021), to develop awareness for the self and others (Burns & Manouchehri, 2021), and to increase environmental knowledge (Ahi & Kahriman-Pamuk, 2021). In this play-based and child-centred approach, children's multifaceted development is supported since children learn and enjoy themselves at the same time. Indeed, in a forest, the topography is multifarious, leading children to become more dynamic (Häggström, 2019). Therefore, children will be active in their play and learning so that their social interaction is increased. Children's senses are in the foreground as they touch, smell, explore, take risks, and control the environment. They need natural resources for their play and search for materials such as rocks, stones, leaves, or sticks. In their search, they directly encounter nature and what it offers and become aware of different ecosystems and biodiversity (Martín-Ezpeleta et al., 2022). Despite this multifaceted structure, none of the studies examine their reflection on the Turkish education program.

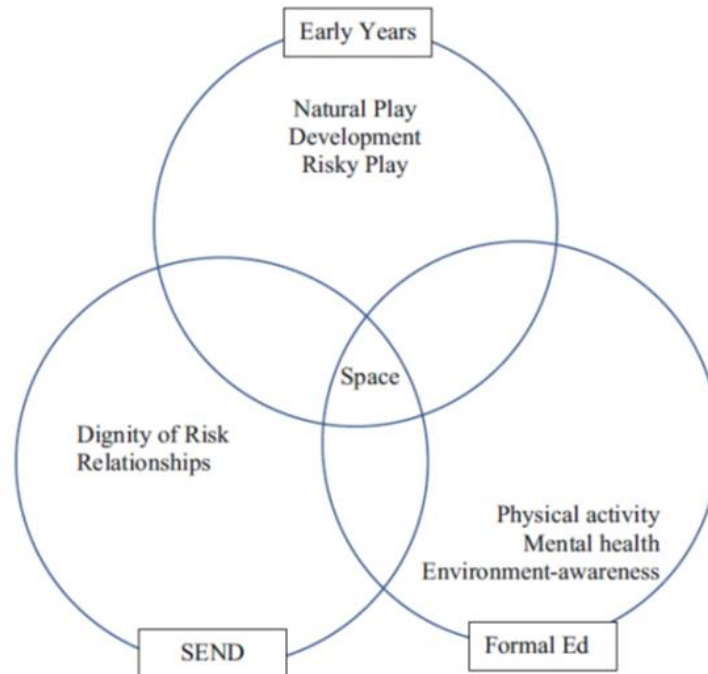
The forest school approach is unique in shaping teaching and learning experiences by combining several early year's philosophy, theory, research, and practice (Ajaps & Forh Mbah, 2022). One of the most critical characteristics of forest schools is regular visits to a woodland or a forest to establish a bond with nature by understanding the natural settings and ecosystem (Larimore, 2016). The local area is often preferred for children to access easily. The practice in these schools is semi-planned based on children's needs, abilities, and backgrounds, allowing them to use emerging opportunities for learning. Yet, there are many activities such as drama, art, mathematics, and literacy (Malone et

al., 2017) embedded in the program, and each forest school has its own routine such as circle time or greeting the woodland at the beginning of the day (Kahriman-Pamuk, 2020). In these schools, practitioners are required to have specific qualifications for leading children, using the equipment, and regarding children's health (Harwood et al., 2020). In the forest school approach, which is set out with the motto "There is no bad weather, there are children who are poorly dressed," children spend their time outside in all weather conditions.

Garden and Downes (2021) discussed forest school conceptual space as intersecting with philosophies of early years education, special education, and formal education. In this study, where we discuss the commonalities and differences between the forest school approach and early years education, it is important to understand where these two pedagogies intersect. Considering Figure 1 below, it can be discussed that shared commonalities should be, but are not necessarily restricted to, natural play, development, risky play, and space. The early years' program supports the tenets of forest schools in some ways.

**Figure 1.**

*Forest School Conceptual Space (Garden & Downes, 2021, p. 11)*



On the other hand, the Turkish Pre-School Program, which the Ministry of National Education implemented in 2013, still shapes preschool classroom practices and supports children's outdoor activities based on the targets and achievements it highlights (MoNE, 2013). This program, accepting preschool education as the period in which children's development is the fastest, emphasizes that the child's brain development will be negatively affected if the child spends his/her first years in an environment where stimuli

are insufficient, emotional and physical support is not provided adequately, and new learning opportunities are not created (MoNE, 2013). Inevitably, children raised in an environmentally sensitive way from an early age will become individuals who respect, protect and bond with nature in their future lives (Chawla & Gould, 2020).

In Turkey, many studies have been carried out to show the benefits of nature-based education, such as improving children's leadership characteristics (Çelebi, 2002), changing their perceptions of nature (Yardımcı, 2009; Özdemir, 2010), instilling a sense of responsibility (Erdoğan, 2011), supporting environmental literacy (Kıyıcı, Yiğit & Darçın, 2014), and developing their social skills (Çiftçi, 2019). Although there are such studies, Turkey's first state-supported forest school was founded in Mersin and named Tarsus Forest School, which was opened in cooperation with the Ministry of National Education in 2018 (Sönmez, 2020). While there were state-supported initiatives such as Mersin Erdemli Sea and Forest School and Samsun Canik Forest School, which were reopened with the support of MoNE through volunteer teachers, these schools were later turned into Science and Nature Schools. Despite these few publicly supported forest schools, most forest schools in Turkey currently exist with the support of private institutions. This limits children's access to nature-based learning opportunities and creates an opportunity gap. Therefore, it is important to highlight why the forest school approach is beneficial and necessary and how forest school practices can inform preschool approaches. In this way, it will be beneficial for children, educators, families, and society to provide children who cannot attend private institutions with the opportunity to access activities developed by the Forest School philosophy. Thus, the basis of equality of opportunity would be reinforced by applying a forest school perspective, and preschool teachers can consider the principles of this approach while preparing their activities. In this manner, the question of 'What are the similarities and differences between the main features of the MEB 2013 preschool education program and the forest school approach?' will be addressed in this study.

## Method

### Research Design

Comparative studies are discussed in the literature as "investigations to analyze and evaluate, with quantitative and qualitative methods, a phenomenon and/or facts among different areas, subjects, and/or objects to detect similarities and/or differences" (Coccia & Benati, 2018, p. 1). Bereday's (1964) systematic comparative educational framework was used in this study as it aimed to compare the preschool program and the forest school approach to understand similarities and differences. In this framework, there are four steps in designing the research: description, interpretation, juxtaposition, and comparison, which the researchers in this study also followed.

First, each researcher engaged in the description process for the forest school approach as it is unique in nature, but there are different implementations worldwide. For descriptions and interpretations, the conceptual framework developed by Waite, Bølling,

and Bentsen (2015) is used as a guide. These interpretive descriptions were gathered in Table 1 for juxtaposition purposes. Then, researchers met for a discussion of similar and different features of the preschool program and the forest school approach so that a comparative result for the final version could be elucidated.

**Table 1.**

*The Juxtaposition of Fundamental Features of the Preschool Program the Forest School Approach*

| Concept  | Preschool Program                    |                                                                           | Forest School Approach                             |                                                                                           |
|----------|--------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------|
| Content  | Flexible                             | (Kılıç, 2020)                                                             | Process-oriented                                   | (Harris, 2017; Dilek, 2019)                                                               |
|          | Spiral                               | (MoNE, 2013)                                                              | Spiral                                             | (Davis & Waite, 2005)                                                                     |
|          | Eclectic                             | (Düzgün, 2014)                                                            | Solitude                                           | (Andrachuk et al., 2014)                                                                  |
|          | Balanced                             | (Kılıç, Tunceli, & Ünsal, 2021)                                           | Holistic                                           | (Forest School Commission, 2011; Lamb, 2011; Murray & O'Brien, 2005)                      |
|          | Play-based                           | (MoNE, 2013)                                                              | Play-based                                         | (Louv, 2008; Slade, Lowery & Bland, 2013; Forest Education Initiative, 2019; Paslı, 2019) |
| Pedagogy | Child-centered                       | (Güler, 2004; Zembat, 2007; Arı, 2013; Yılmaz et al., 2021; İş, 2017)     | Child-centered                                     | (Knight, 2013)                                                                            |
|          | Themes as vehicles                   | (Akkaya, 2009)                                                            | Pre-determined concepts yet emerging opportunities | (Andrachuk, et al., 2014; Sobel, 2014)                                                    |
|          | Learning centers in classrooms       | (İş, 2017; Altun, 2018; Aysu & Aral, 2016)                                | Everywhere as learning centers                     | (Häggström, 2019)                                                                         |
|          | Consultancy                          | (MoNE, 2013)                                                              | Consultancy                                        | (Williams Siegfredsen, 2017)                                                              |
|          | Inclusion for disabilities           | (Kılıç, Tunceli, & Ünsal, 2021)                                           | -                                                  | -                                                                                         |
|          | Family Involvement and Participation | (Çamlıbel-Çakmak, 2010; Şahin & Ünver, 2005; Ondieki, 2012; Kernan, 2012) | Family Involvement and Participation               | (Kenny & Rogers, 2015)                                                                    |
|          | Emphasizing local environment        | (MoNE, 2013)                                                              | All natural places                                 | (Knight, 2013)                                                                            |
| Outcome  | Exploration                          | (MoNE, 2013)                                                              | Exploration                                        | (Paslı, 2019; Bal & Kaya, 2020;                                                           |

|                   |                               |                               |                               |                                                                                              |
|-------------------|-------------------------------|-------------------------------|-------------------------------|----------------------------------------------------------------------------------------------|
|                   | Daily Experiences             | Life (Kılıç, 2020)            | Daily Experiences             | Life (Sobel, 2014; Williams Siegfredsen, 2012; Huppertz, 2004; Paslı, 2019; Constable, 2017) |
|                   | Creativity                    | (Aral & Duman, 2018)          | Creativity                    | (Paslı, 2019; Murray & O'Brien, 2005; Knight, 2013)                                          |
|                   | Cultural and universal values | (Düzgün, 2014)                | Cultural and universal values | (O'Brien & Murray, 2006)                                                                     |
|                   | -                             | -                             | Strength                      | (Blackwell, 2015)                                                                            |
|                   | -                             | -                             | Wellbeing                     | (Blackwell, 2015; Tiplady & Menter, 2020)                                                    |
|                   | -                             | -                             | Risk-taking                   | (Harris, 2017; Maynard, 2007; Waters & Begley, 2007)                                         |
|                   | Language and communication    | (MoNE, 2013)                  | Language and communication    | (Harris, 2017; O'Brien & Murray, 2006)                                                       |
| <b>Assessment</b> | Multifaceted assessment       | (MoNE, 2013; Sapsağlam, 2013) | Multifaceted assessment       | (Yılmaz Bolat, 2020; Dilek, 2019)                                                            |

## Data Collection

As all early year's educational institutions are required to follow the preschool program developed by MoNE (2013), this program document constitutes the primary data. However, a body of literature was needed to form a solid framework for the program and forest school approach. Therefore, a thorough review of a range of databases was carried out using WoS (Web of Science) and DergiPark. Multiple search terms including "early childhood education," "forest school," and "forest school approach," were integrated with terms in order to narrow the search to studies describing the fundamental features of the forest school approach. This yielded 42395 hits, containing 1696 publications. Similarly, multiple search terms, including "Turkish preschool program" "Turkish preschool education" and "Turkish early year's s education", were carried out using WoS and Dergipark. This yielded 4047 hits, containing 2169 publications and 15 web-based literature found in a Google Scholar search, including the forest school approach and preschool programs.

The researchers determined the documents' selection and screening criteria in this process. Among the criteria, one of the most important was that the resources analyzed were required to be in peer-reviewed journals, suitable for the research subject, primary resources and up to date from 2002 to 2022. Duplicated resources were removed. Several criteria were also employed for exclusion, such as being related to older age groups and employing different approaches (e.g., High Scope) that do not take place in the scope of the current study and exclude grey literature. Title scrutiny revealed 16

publications related to the MoNE 2013 preschool education program and 27 related to the forest school approach, its principles, features, and philosophy.

## Data Analysis

Comparative studies in education have been defined by Wilson (2003, p. 17) as "an intersection of the social sciences, education and cross-national study which attempts to use cross-national data to test propositions about the relationship between education and society and between teaching practices and learning outcomes". Following this framework, we first, created an abstract scheme to draw a clear picture of the pedagogical principles of the forest school approach and preschool program. Then, three researchers separately worked on the analysis of the literature, which led to four conceptual elements: "content", "pedagogy", "outcome", and "assessment". These elements helped researchers understand whether there is a connection between the principles of the forest school approach and the preschool program. Indeed, Waite et al. (2015) used similar concepts, highlighting purpose, aims, content, pedagogy, outcome, and barriers when comparing outdoor learning in English and Danish Forest schools.

In this study, we applied Bereday's (1964) systematic comparative educational framework to compare an international approach to education (forest school approach) and the preschool program in Turkey. First, we defined our concepts and interpreted them, then juxtaposed them by and contrasting what we found based on our literature search. Consequently, we reached out with our findings about the similarities and differences between the forest school approach and the Turkish preschool program to understand the connection between the tenets of the forest school approach and the early years' education program.

## Findings

The findings of this study are represented under three titles which include subtitles.

### Tablo 2.

#### Themes for Content Coverage

| Content                  |                                                                                                       |                                                                                  |
|--------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
|                          | Preschool Program                                                                                     | Forest School Approach                                                           |
| <b>Flexibility</b>       | Teachers are flexible in planning their classroom practices based on students' needs, abilities, etc. | Emerging opportunities are valued. A process-oriented learning approach is seen. |
| <b>Spiral patterns</b>   | The achievements and indicators are discussed repeatedly through different activities.                | Constant repetition of content until learning occurs.                            |
| <b>Eclectic elements</b> | The program was created based on different approaches and models of                                   | This approach stands as a different learning model and                           |

|                              |                                                                                                                                                                                                                                                                                     |                                                                                                                                     |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|                              | preschool programs such as Montessori and Waldorf.                                                                                                                                                                                                                                  | practices are carried out in a similar way almost everywhere.                                                                       |
| <b>Balanced programs</b>     | A developmentally appropriate program based on children's cognitive, physical, social-emotional, linguistic, moral, motor and self-care development. The emphasis is on the balance of active and passive activities; individual and group activities, and a variety of activities. | Children's holistic development is highlighted such as physical, language, cognitive, emotional, social and spiritual developments. |
| <b>Play-based approaches</b> | Play is integral.                                                                                                                                                                                                                                                                   | Forest schools offer children free play, exploration, and interaction with the natural world for an unstructured curriculum.        |

## Pedagogy

Table 3.

### Themes for The Scope of Pedagogy

| Pedagogy                                    |                                                                                                                                                                                        |                                                                                                                                                                                |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                             | Preschool Program                                                                                                                                                                      | Forest School Approach                                                                                                                                                         |
| <b>Child-centered pedagogies</b>            | The teaching and learning are designed based on the characteristics and needs of the children. The knowledge, skills, and attitudes for children are explicitly stated in the program. | Forest school practices are shaped based on the interests and needs of children.                                                                                               |
| <b>Themes/Concepts</b>                      | The program is based on achievements and indicators. Teachers are free to choose their own topics, the aim is not to teach any subject but to support children's development.          | No predetermined or ready concepts. The educational program is planned by considering the natural conditions, the participants, the climate, the season and natural resources. |
| <b>Learning opportunities</b>               | Learning centers in classrooms. Individual or group activities. Free, semi-structured and structured play.                                                                             | All green areas can be used as learning places. Individual or group activities. No centers. Free and semi-structured play.                                                     |
| <b>Consultancy service</b>                  | Cooperation with counselling service.                                                                                                                                                  | Risk and struggle are part of children's learning environment. No need for extra consultancy.                                                                                  |
| <b>Place for inclusion</b>                  | Inclusion and integration are essential. Individualized education program are used for children with special needs.                                                                    | There is not detailed information about inclusion. Regardless of their special needs, all children engages in the same activity.                                               |
| <b>Family involvement and participation</b> | The Family Support Education Guide is prepared as a part of the program. There is a cooperation between families and school.                                                           | Families are mostly invited to forest school sessions to understand the forest school philosophy and culture, not for                                                          |



the cooperation. Activities are organized with families throughout the year, such as child-parent days, regular study parties and a family camp at the end of the year.

## Outcome

**Table 4.**

### *Themes For Outcome Coverage*

|                                      | Outcome                                                                                                                                                                                      |                                                                                                                                                                                |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      | Preschool Program                                                                                                                                                                            | Forest School Approach                                                                                                                                                         |
| <b>Exploration</b>                   | Children are encouraged to be aware of what is happening around them, to ask questions, explore and research.                                                                                | Children are able to develop new ideas with natural resources and materials through meaningful experiences through exploration in green areas.                                 |
| <b>Daily life experiences</b>        | Making use of immediate environment, field trips, inviting professionals to the classroom.                                                                                                   | Project-based learning, innovation-based activities, creating responsibility and awareness on environmental issues, encouraging to connect with past learning and experiences. |
| <b>Creativity</b>                    | Diverse activities to develop creativity through different instructional methods and techniques.                                                                                             | It aims to raise self-confident, independent and creative individuals through offering unrestricted experience in environments to explore using a multitude of senses.         |
| <b>Cultural and universal values</b> | The program encourages respecting differences and gaining experiences of living together in harmony with individuals with different characteristics.                                         | The primary aim of this approach is to support children in learning with/about nature and nature has all diversity in it.                                                      |
| <b>Wellbeing</b>                     | The program considers both the physical and psychological wellbeing of children, such as exercising everyday for physical wellbeing and motivational activities for psychological endurance. | This approach supports children's social and emotional needs, especially self-development and self-esteem.                                                                     |
| <b>Risk-taking</b>                   | Child's safety is important, as a result, risk-taking has not directly been stated in the program.                                                                                           | Controlled risk taking activities are major with safety measures.                                                                                                              |
| <b>Language communication and</b>    | Emphasising Turkish language teaching and advance use of this language for communication.                                                                                                    | Not directly stated, yet, indirect activities are designed for language and communication support.                                                                             |

Seven different subthemes are listed under the 'outcome' theme, represented in Table 4. When Table 4 is examined, there are exploration, daily life experiences, creativity, cultural and universal values, wellbeing, risk-taking, language and communication themes for the scope of the outcome.

### **Assessment**

Regardless of the educational approach, evaluation is a must for continuous feedback. Below, the assessment process for the Turkish program and the forest school approach is described.

**The assessment process:** Evaluation in the preschool education program includes the evaluation of the children and the program, as well as the self-evaluation of the teacher. A "Development Observation Form" has been created in order to monitor the child's knowledge, skills and attitudes, covering all developmental areas in detail. There is also a "Progress Report" prepared twice a year based on this form. Creating a developmental file (portfolio) for each child is also emphasized in the program. Evaluation of the program takes place in the daily training flow by evaluating the day, the daily training process, and the activities. The teacher's self-evaluation is the determination and evaluation of their abilities and interests with the data obtained from the children's and program's evaluations (MoNE, 2013; Sapsağlam, 2013).

In the forest school approach, the practitioner/leader uncovers children's interests through observations and planning unnoticed by children. Evaluations are made with children so that children can reflect on their own practices (Yılmaz Bolat, 2020). The aim of the evaluation process is to assess children's development, their emotional situation and plans for future activities in both the Turkish program and the forest school approach (Dilek, 2019). From this standpoint, the Turkish program parallels the forest school approach.

## **Discussion, Conclusion, and Suggestions**

In this study, researchers examined the early childhood education program MoNe (2013) developed by the Ministry of Turkish Education to illustrate the connection between the program and the Forest School Approach. Researchers found a significant relationship between the program and the elements of the forest school approach and represented these similarities and differences under four categories: content, pedagogy, outcome, and assessment. These four themes were later exemplified with subthemes in order to investigate this connection in depth. While the commonalities between the Turkish program and the forest school approach are undeniable, some contradictions still exist, such as the fact that risk-taking is not valued in the Turkish program, while it is an essential element in the forest school approach (Connolly & Haughton, 2017). As a result, risk-taking can often be noticed in forest school activities, but it is often underrated when creating activities for indoor classrooms.

Considering these commonalities, it can be concluded that the scholars who created MoNe also referenced the characteristics of the Forest School Approach while creating the eclectic program. Thus, the Forest School Approach has certainly influenced the early childhood education program in Turkey. However, despite these commonalities, teachers still prefer to develop indoor classroom activities that teachers often underuse outdoor spaces. Moreover, since outdoor classrooms are undervalued in the program, most children cannot benefit from the advantages of the forest school approach, such as the ability to question (Bak & Kaya, 2020), look for answers (Leaa & Bailie, 2019), communication skills and self-confidence (Gruno & Gibbons, 2020; Merritt et al., 2022).

All children should benefit from forest schools for holistic development, yet higher institutions that train teachers often do not emphasize the benefits of outdoor spaces. Thus, preservice teachers in early childhood education graduate with limited knowledge about the forest school approach and often fail to connect the forest school approach to the Turkish early childhood education program. This study guides teachers to make this connection and apply it in their classrooms. Thus, it is significant to recall the commonalities described in this paper to create activities that meet the criteria in the Turkish education program and forest school approach.

Echoing the findings, the researchers suggest that (1) policy-makers should be informed about the forest school approach; and while creating new programs, they should consider the holistic development of children who can develop a positive connection with nature; (2) in-service preschool teachers should learn about the forest school approach and implement its tenets in their activities such as using outdoor spaces for teaching different skills; (3) teacher education programs should more often focus on the forest school approach in the courses they offer to inform the teachers about the nature and program that goes hands-on hands. In conclusion, the researchers illustrated that a strong connection exists between the forest school approach and the early childhood education program that almost all activities planned for indoor classrooms can be carried to outdoor spaces with necessary alterations.

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## Genişletilmiş Türkçe Özet

Yıllar içinde küresel eğilimin ardından Türkiye'de okul öncesi eğitimin önemi artmış; sonuç olarak, okul öncesi programa dayalı çalışmalar da artmıştır (Ahi & Kahriman-Pamuk, 2021; Güven & Yılmaz, 2017; Ocak & Korkmaz, 2018). Bu amaçla okul öncesi eğitimin zorunlu hale getirilmesine yönelik çalışmalar da gündemdedir (Kız & Sincar, 2020; Küçükturan, Altun & Altun, 2013). Bu nedenle, erken yaş kurumlarına devam eden çocuk sayısının artması ve mevcut öğrencilerin ihtiyaçları göz önüne alındığında, doğaya dayalı unsurları değerlendiren kapsayıcı bir okul öncesi eğitim programı, erken yaş eğitiminde çocuklar için olumlu bir yansıma sağlayabilir. Bu nedenle, orman okulu yaklaşımının yerini, Ulusal Okul Öncesi Programda doğa temelli eğitim için en yaygın yaklaşımlardan biri olarak anlamak, erken yaş eğitimcilerinin ve öğretmenlerinin sınıf uygulamalarını buna göre uyarlamalarına ve ayarlamalarına yardımcı olabilir.

Orman okulu yaklaşımı, okul öncesinden ileri yaşlara kadar tüm yaş grupları için doğayla bağ kurarak, çocukların doğayla bağlantı kurmasını sağlayarak ve yaşam boyu etkileri olduğu bilinen genel gelişimlerini destekleyerek çocukların eğitime dayanmaktadır (Garden & Downes, 2021). Millî Eğitim Bakanlığı'nın 2013 yılında uygulamaya koyduğu Türk Okul Öncesi Programı, halen okul öncesi sınıf uygulamalarını şekillendirmekte ve çocukların açık hava etkinliklerini vurguladığı hedef ve kazanımlar doğrultusunda desteklemektedir (MEB, 2013). Okul öncesi eğitimi çocukların gelişiminin en hızlı olduğu dönem olarak kabul eden bu program, çocuğun ilk yıllarını uyarınların yetersiz olduğu, duygusal ve fiziksel desteğin yeterince sağlanmadığı, yeni öğrenme olanaklarının yaratılmadığı bir ortamda geçirmesi durumunda çocuğun beyin gelişiminin olumsuz etkileneceğini vurgulamaktadır (MEB, 2013). Kaçınılmaz olarak, erken yaşlardan itibaren çevreye duyarlı bir şekilde yetiştirilen çocuklar, gelecek yaşamlarında doğaya saygı duyan, koruyan ve onunla bağ kuran bireyler haline gelecektir (Chawla & Gould, 2020).

Türkiye'de doğa temelli eğitimin çocukların liderlik özelliklerinin geliştirilmesi (Çelebi, 2002), doğa algılarının değiştirilmesi gibi faydalarını göstermek amacıyla birçok çalışma yapılmıştır (Yardımcı, 2009; Özdemir, 2010), sorumluluk duygusu aşıl原因 (Erdoğan, 2011), çevre okuryazarlığını (Kıyıcı, Yiğit & Darçın, 2014) ve sosyal becerilerini geliştirmeyi (Çiftçi, 2019) desteklemektedir. Bu tür çalışmalar yapılmasına rağmen Türkiye'nin ilk devlet destekli orman okulu Mersin'de bulunmuş ve 2018 yılında Millî Eğitim Bakanlığı iş birliğiyle açılan Tarsus Orman Okulu adını almıştır (Sönmez, 2020). MEB'in gönüllü öğretmenler aracılığıyla desteğiyle yeniden açılan Mersin Erdemli Deniz ve Orman Okulu ve Samsun Canik Orman Okulu gibi devlet destekli girişimler yaşanırken, bu okullar daha sonra Bilim ve Doğa Okulları'na dönüştürüldü. Kamu tarafından desteklenen bu az sayıdaki orman okuluna rağmen, Türkiye'deki en eski okulların çoğu şu anda özel kurumların desteğiyle varlığını sürdürmektedir. Bu, çocukların doğaya dayalı öğrenme fırsatlarına erişimini sınırlar ve bir fırsat boşluğu yaratır. Bu nedenle, orman okulu yaklaşımının neden yararlı ve gerekli olduğunu ve orman okulu uygulamalarının okul öncesi yaklaşımları nasıl bilgilendirebileceğini vurgulamak önemlidir. Bu sayede çocuklara, eğitimcilere, ailelere ve topluma, özel

kurumlara gidemeyen çocuklara Orman Okulu felsefesiyle geliştirilen etkinliklere erişim imkânı sağlanması faydalı olacaktır. Böylece fırsat eşitliğinin temeli, orman okulu bakış açısı uygulanarak güçlendirilecek ve okul öncesi öğretmenleri faaliyetlerini hazırlarken bu yaklaşımın ilkelerini göz önünde bulundurabilecektir. Bu kapsamda "MEB 2013 okul öncesi eğitim programının temel özellikleri ile orman okulu yaklaşımı arasındaki benzerlikler ve farklılıklar nelerdir?" sorusu ele alınmıştır.

Tüm erken yaş eğitim kurumlarının MEB (2013) tarafından geliştirilen okul öncesi eğitim programını takip etmeleri gerektiğinden, bu program belgesi birincil verileri oluşturmaktadır. Bununla birlikte, program ve orman okulu yaklaşımı için sağlam bir çerçeve oluşturmak için bir literatür bütününe ihtiyaç vardı. Bu nedenle, WoS (Web of Science) ve DergiPark kullanılarak bir dizi veri tabanının kapsamlı bir incelemesi yapılmıştır. Araştırmacılar ayrı ayrı literatürün analizi üzerinde çalıştı ve bu da dört kavramsal unsura ulaşmamızı sağladı: *içerik*, *pedagoji*, *sonuç* ve *değerlendirme*. Bu unsurlar, araştırmacıların orman okulu yaklaşımının ilkeleri ile okul öncesi program arasında bir bağlantı olup olmadığını anlamalarına yardımcı olmuştur.

**Ethics Committee Approval:** This article was planned and conducted as completely original research and was sent to the relevant journal after being reported with its results. Research can be done in any symposium, congress, etc. It has not been submitted or sent to another journal for consideration. Since the application area of the research consisted of the basic features of the MEB 2013 Pre-School Education Program and the features of the Forest School, and human or animal participants/subjects were not included, an ethics committee review was not required, but all relevant guidelines specified in the journal's ethical principles and publication policy were followed.

**Informed Consent:** Informed consent was obtained from the participants.

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| Authors              | Contact                                                             |
|----------------------|---------------------------------------------------------------------|
| Filiz Aydemir        | Adiyaman University, Adiyaman.<br>E-mail: faydemir@adiyaman.edu.tr. |
| Vahide Yiğit Gençten | Adiyaman University, Adiyaman.<br>E-mail: vgencten@adiyaman.edu.tr. |

# Evaluation of Teacher's Classroom Practices in the Context of Vygotsky's Cultural-Historical Theory\*

Naşide Nur Karaman\*\*, Mustafa Sever\*\*\*, F. Çağlayan Dincer\*\*\*\*

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## Abstract

The effective continuation of the learning process depends on the teacher's interaction with children. Teachers must be facilitative in this interaction process while guiding children's learning. This study focuses on determining how teachers' classroom practices are reflected in the learning environment in the context of Vygotsky's cultural-historical theory. The study was designed as a case study from qualitative research models. All six teachers who constituted the study's data set worked in the same preschool education institution. Each teacher was observed for five days during the half-day period at the school using the non-participant observer technique. The observations were followed according to the "Teacher Observation Form" prepared by the researchers. This form included five headings: "Use of Language", "Use of Mediators", "Shared Activity", "Zone of the Proximal Development", and "Play." Content analysis was used to analyze the observations. As a result, it was concluded that teachers need to be informed about Vygotsky's cultural-historical theory in terms of theory and practice and that they need to share practices in the theory infrastructure.

**Keywords:** Vygotsky, cultural-historical theory, early childhood, classroom practices, learning environment

## About the Article

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\*\*  Corresponding Author, Ankara University, Faculty of Educational Sciences, Turkey, nasidenurkaraman@gmail.com.

\*\*\*  Professor, Ankara University, Faculty of Educational Sciences, Turkey, severmustafa@gmail.com.

\*\*\*\*  Professor, Ankara University, Faculty of Educational Sciences, Turkey, fcdincer@gmail.com.

## Introduction

Learning in the early years is critical for a child's lifelong development (Burlacu, 2013). Investing in education in a critical period such as the preschool period is seen as very important in the long run in terms of individual and social benefits. Dünya Bankası (The World Bank), focusing on issues such as economic analysis of education, the transition from school to work life, finance, and expenditures to scaffolding (Sever, 2019), reports that investing in children at an early stage will offer returns that will make a difference in the child's life in terms of economic productivity (World Bank, 2013; Jenkins, 2014). The United Nations 2030 agenda, within the scope of sustainable development goals, aims to continue programs to train manpower for future competitive jobs and to improve the quality of teachers, as preschool education is important in terms of its impact on primary school readiness and the development of a qualified workforce in Turkey (Ministry of Development [MoD], 2017). According to Auld and Morris (2019), early childhood education systems should be aligned with 21st-century skills to invest in human capital. Thus, the International Early Learning Study (IELS) will make it possible to assess early learning outcomes. According to a study conducted with children aged 3-6 in China, the quality of preschool education was a predictor of children's language, early math, and social skills (Li et al., 2019). In this respect, it has been determined that quality education has important compensatory effects on the development of rural children and can help reduce the rural-urban achievement gap (Schmitt et al., 2018). Classroom quality is a predictive factor in explaining children's learning and development to ensure equal opportunities in education. In addition, it should also be sustainable once equality of opportunity is achieved. Therefore, to ensure the functioning of quality preschool education programs, it is necessary to focus on the importance of the "teacher" effect, which will enable children to enrich the classroom, scaffolding their skill development, and progress in preparation for primary school.

Important transformations are taking place in education. In this transformation process, teachers, who form the basis of education, have been burdened with responsibilities such as establishing strong relationships with children, creating a positive learning climate, and being willing to engage in lifelong learning. These responsibilities have led teachers to seek new approaches to children's education (Ministry of National Education [MoNE], 2017). In this respect, Kim et al. (2019) argue that teacher education quality should be improved to develop competencies known as 21st-century skills. For a quality teaching and learning environment, there is a need to enrich teacher-child interactions (Pianta, 2017: 17-19). It is necessary to align these relationships with the curriculum (White, 2020). Different studies have been conducted on teacher-child interactions, and it has been found that preschool classroom experiences are positively associated with children's school readiness skills (Hatfield et al., 2016) and cognitive skills (Hu et al., 2017).

When children's development in academic and social skills is evaluated, it is seen that their gains in language-related academic skills are related to the classroom processes that children directly experience. While the instructional climate of the classroom

impacts children's academic skill outcomes, the quality of the teacher-child relationship is effective in children's acquisition of social skills (Howes et al., 2008). Hu et al. (2018) concluded that high-quality teacher-child interactions in early learning environments consistently explain the development of children's later academic and cognitive skills. In addition, a statistically significant and positive relationship was found between classroom quality and children's math, language, and literacy skills (Carr et al., 2019; Phillips et al., 2009). Curby et al. (2010) state that teachers who provide more emotional scaffolding to their students and adopt a positive environment and functioning in the classroom indirectly provide educational support. It is shown that teachers sensitive to children's needs scaffolding children more emotionally, and children are more likely to fulfill the teacher's wishes during the next activity (Phillips et al., 2009). When the studies are evaluated, it is seen that quality teacher-child interaction affects children's learning areas and their interest in learning.

Rather than a homogenizing tendency (Nóvoa, 2018), education should adopt an approach that supports children individually and allows them to construct their learning in a cultural environment (Bredekamp, 2015: 116). Moreover, teachers with an educational approach that puts the child at the center and considers his/her best interests will have a higher quality of interaction with children (Hausfather, 1996; Yang & Hu, 2019). The Russian Federation follows an education program based on a creative/constructivist, experience-based, play-based, and child-centered approach based on Vygotsky's theory (Bertram & Pascal, 2016: 161). Vygotsky's work has recently influenced education in the US. The concept of constructivism (Sharkins et al., 2017) led to the restructuring of the curriculum after Bruner in the US and formed the basis of the curriculum design model (Hapenciuc, 2019). Elena Bodrova and Deborah J. Leong developed an early childhood curriculum called "Tools of the Mind" based on Vygotsky's principles of cultural-historical psychology within a project. The Tools of the Mind Project began as a collaboration of public schools to develop basic cognitive and early literacy skills in kindergarteners (Bodrova & Leong, 2001).

The Tools of the Mind Project is based on Vygotsky's cultural-historical theory. This curriculum aims to facilitate children to regulate their behavior and guide their learning. To this end, several tools are used in the teaching and learning process, including strategies that support self-regulation and those that make self-regulation strategies suitable for use in academic activities. In this way, children acquire and internalize social, emotional, and cognitive self-regulation skills. Through mediators, teachers assess children's development individually and provide support (scaffolding) "according to the child" (Bodrova & Leong, 2013: 94). If one of the main goals of preschool education is to prepare children for primary school, the Tools of the Mind Curriculum aims to help young children develop cognitive and social-emotional competencies. This curriculum is among the innovative early childhood programs in UNESCO's international database (Bodrova & Leong, 2018b: 1095). It is considered one of the seven wonders of early childhood education (Lash et al., 2016). It has been found that children receiving education with this curriculum have reduced behavioral problems and aggression in the classroom environment, increased self-regulation skills and



social-emotional competencies, improved teacher-child relationships (Blair et al., 2018; Bodrova & Leong, 2001), improved literacy, self-control, and attention regulation, exhibited more prosocial behaviors, and reduced teacher burnout and bullying among children (Diamond et al., 2019). In addition, it has been shown that these skills acquired by children provide high differences in reading and vocabulary and increase the school success of children in grades 3 and 4 of primary school (Bodrova & Leong, 2018a).

Vygotsky's cultural-historical theory emphasizes the positioning of context in learning. Vygotsky argues that children learn through social interaction. Considering the child's developmental characteristics, the social and cultural environment is important in learning and internalizing learning (Bredenkamp, 2015: 116-117). When children learn, instead of a structured program, an effective learning process occurs through social interaction, using learning symbols, and being flexible enough to adapt to the situations in the classroom context. In this way, children reinterpret knowledge by constructing it themselves and experimenting repeatedly to deepen their knowledge, and learning is internalized by children in this way (Mejía-Arauz et al., 2018). Vygotsky studied the relationship between thought and language in learning. In preschool, children use language as a tool of thought (Atak, 2017). Therefore, speech becomes the most important tool of learning. Vygotsky focused on how cognitive functions such as language, thought, learning, perception, and memory develop (Bodrova & Leong, 2013: 90) and how speech and thinking are combined in constructing meaning (Mahn, 2012). These elements of the mind are not independent of each other. Language and thought to follow a different path until a certain level of cognition. Afterward, the development of language parallels that of thought. Understanding and naming a concept through language creates "meaning." The process of meaning is the transition from low mental functions to high mental functions (Vygotsky, 2018: 39-40).

According to Vygotsky, the zone of proximal development is the difference between what a child with developing mental functions can do alone without help and what they can do with help (Eun, 2018; Veresov, 2004). For positive differences to occur in potential development, scaffolding is essential. The emergence of the child's autonomy is possible with the help and cooperation of adults or peers (Marginson & Dang, 2016). Thus, the child's interaction with an adult or a peer with higher skills through language enables him/her to progress in his/her potential developmental area. Hapenciuc (2019) has studied how cultural-historical theory is perceived in the American cultural field. According to his studies, Vygotsky's scientifically grounded pedagogy is based on the research subject, pedagogical normativity, and research methodology. Learning is the reconstruction of subjective meanings formed in social cognition through intersubjective processes in a cultural-historical sense. It is the subjective construction (from a new perspective) of knowledge made meaningful through social interaction. Pedagogical normativity is the child's formation of effective thinking and learning mechanisms through scaffolding.

Vygotsky emphasized that every child should actively participate in the process of interaction with classmates and teachers (Maier-Höfer, 2015). Children's participation



has also been found to have a positive relationship with self-regulation skills (Marti et al., 2018). Children should be encouraged to experience a sense of participation (Bae, 2010). Kontos and Wilcox-Herzog (1997) examined the relationship between teacher involvement (as an activity environment and social context) and the developmental levels of children in early childhood classrooms. Teacher involvement was found to be related to the development of children's social competencies and cognitive skills. To promote children's learning and understanding in the classroom, teachers need to determine how to support children (Kim et al., 2019). In this context, teachers act as support providers. This support that adults give to children's learning activities encourages the child to study at the next level of what they can do. The tools of the mind reveal that children learn from adults, which is the teacher's role in the learning environment. The teacher guides children in this process (Bodrova & Leong, 2001; Bodrova & Leong, 2009). The development of children's academic and social skills is based on the quality of the curriculum, the teacher, teacher-child interaction, and the quality of the activities carried out in the classroom. In all these conditions, it is the teacher who will provide support to the child who will build their learning.

In terms of increasing the quality of education of preschool children, it has started to be considered how this curriculum program, created in the light of Vygotsky's theory and integrated with the US education system, can be implemented in our education system. When the domestic studies and practices in the context of Vygotsky's cultural-historical theory were examined within the limitations of the preschool period, it was determined that there were research studies on pretend play (Keleş ve diğerleri, 2018), play planning (Güler, 2010), children's self-directed speech (Keleş ve Alisinanoğlu, 2014) and free play (Aras, 2016) and theoretically informative-introductory studies (Ahioğlu, 2008; Atak, 2017; Bayhan ve Saranlı, 2010; Öncü, 1999; Palut, 2005). The lack of research on the teacher dimension has led researchers to study this issue. This study aims to examine the reflection of the teacher's classroom practices on the learning environment in the context of Vygotsky's cultural-historical theory in supporting children's development. In line with this purpose, the question "How are the implementation processes of preschool teachers in the learning environment related to (a) use of language, (b) use of mediators, (c) zone of the proximal development, (d) shared activity and (e) play in the context of Vygotsky's cultural-historical theory?" was sought to be answered.

## Method

### Research Design

This study, which aims to examine the teacher's classroom practices in the context of Vygotsky's cultural-historical theory, was designed as a case study, one of the qualitative research methods. A case study is an in-depth investigation of a situation or phenomenon that the researcher cannot control in the real-life environment of the researched subject without intervention (Yıldırım ve Şimşek, 2013: 315; Yin, 2017: 5).

This research design focuses on explaining and describing the comprehension, discovery, and interpretation of the situation holistically (Merriam, 2013: 40). The main purpose of this design is to describe and interpret the situation in detail in its context (Paker, 2015: 119). Accordingly, when children entered the preschool education institution, teacher behaviors were observed during free play, structured and routine activity processes, and feeding times.

### Participants

The study participants were determined by the typical case sampling method, which is one of the purposeful sampling types based on the criterion of easy accessibility. The number of participants and sample size are kept quite small in studies using detailed and in-depth research methods (Yıldırım ve Şimşek, 2013: 320-321). The determination of the teachers constituting the study group was based on their willingness and voluntariness to participate in the study. Participating teachers were informed about the study and signed a consent form. Six teachers working in independent kindergartens affiliated with the Directorate of National Education in Ankara province center during the 2017-2018 academic year and teaching 60-72-month-old children participated in the study. Between March 13, 2018, and April 20, 2018, each teacher was observed for 135 hours between 08.00-12.30 and 13.00-17.30 hours on five days - during their half-day period at the school. Each teacher was observed for an average of 15 hours. All the teachers in the three morning and three-afternoon groups were female. The length of service of these teachers ranged between 8-29 years. Their average tenure was 14.33 years (Table I).

**Table I**

*Descriptive characteristics of teachers*

| Teacher's Code names | Gender of the teacher | Type of school she works in | Group time | Class size |         | Recorded Observation times | Teacher's length of service |
|----------------------|-----------------------|-----------------------------|------------|------------|---------|----------------------------|-----------------------------|
| T1                   | Female                | Kindergarten                | Morning    | 5 girls    | 10 boys | 11 hours 24 min.           | 29 years                    |
| T2                   | Female                | Kindergarten                | Afternoon  | 10 girls   | 13 boys | 12 hours 40 min.           | 9 years                     |
| T3                   | Female                | Kindergarten                | Morning    | 12 girls   | 7 boys  | 17 hours 07 min.           | 18 years                    |
| T4                   | Female                | Kindergarten                | Afternoon  | 8 girls    | 7 boys  | 12 hours 03 min.           | 14 years                    |
| T5                   | Female                | Kindergarten                | Morning    | 11 girls   | 11 boys | 8 hours 27 min. dk         | 8 years                     |

|    |        |              |           |            |           |                     |         |
|----|--------|--------------|-----------|------------|-----------|---------------------|---------|
| T6 | Female | Kindergarten | Afternoon | 7<br>girls | 9<br>boys | 11 hours<br>41 min. | 8 years |
|----|--------|--------------|-----------|------------|-----------|---------------------|---------|

### **Data Collection Method**

In case studies, data are collected in various methods to describe the situation as reflectively and accurately as possible. In this study, data were obtained through video recordings and observation notes. The observer conducted the observation through non-participant observation.

### **Data Collection Tools**

The study used two data collection tools: "Teacher Recognition Form" and "Teacher Behavior Observation Form in the Context of Vygotsky Cultural-Historical Theory."

#### **Teacher Recognition Form**

To get to know the teachers participating in the study, a "Teacher Recognition Form" was prepared, which included information such as age, gender, professional experience, type of school, age group, length of service, etc.

#### **Teacher Behavior Observation Form in the Context of Vygotsky Cultural-Historical Theory**

To determine the reflection of Vygotsky's cultural-historical theory on the learning environment, the researchers developed the "Teacher Behavior Observation Form in the Context of Vygotsky's Cultural-Historical Theory." The observation form includes five sections and 82 items: Use of Language (12 items), Use of Mediators (12 items), Shared Activity (20 items), Zone of the Proximal Development (8 items), and Play (30 items). These items were prepared to determine whether teachers use the mind's tools to support the children's learning processes. The observation notes related to each item was described by the researcher who conducted the observation by taking notes in the "explanation" sections of the skills exhibited by the teacher.

In creating the "Teacher Behavior Observation Form in the Context of Vygotsky's Cultural-Historical Theory," a large pool of items was created by examining the literature in detail. Then, it was presented to two field experts to obtain content validity. The form was finalized as five sections and 82 items by making the specified arrangements.

### **Data Analysis**

The transcriptions of the data collected in the research were transferred to a computer file by watching the video recordings and overlapping the information taken from the field notes in line with the five areas determined at the beginning and the items under these headings. In this way, a codebook was created and transformed into a holistic data set. While coding, the conceptual framework of the Mind's Tools was utilized. Then, the codings were checked again on the data set, which the researchers read intensively several times, and necessary changes were made. Categories were determined based on the coding. Since the research was conducted by determining a

theoretical framework, keeping the themes as initially determined was deemed appropriate. Content analysis, one of the qualitative research methods, was used to analyze these data. The categories and codes that emerged based on the themes are shown in Table II.

**Table II**

*Code system of the teacher's classroom practice (Code system for findings)*

| Theme                            | Category                        | Code                                |
|----------------------------------|---------------------------------|-------------------------------------|
| Use of language                  | Development of meaning          | Verbal expressions                  |
|                                  |                                 | Verbal clues                        |
|                                  |                                 | Written language                    |
| Use of Mediators                 | Self-directed speech            |                                     |
|                                  | Social conversation             |                                     |
|                                  | Function of Mediators           |                                     |
|                                  | Mediators in behavior           |                                     |
|                                  | Mediators as supporters         |                                     |
| Shared activity                  | The role of the teacher         | Guidance                            |
|                                  |                                 | Increasing interaction and dialogue |
|                                  |                                 | Affective                           |
|                                  |                                 | Physical                            |
|                                  |                                 |                                     |
| Zone of the Proximal Development | Organizing others               |                                     |
|                                  | Encouraging peer collaboration  |                                     |
|                                  | Providing Support (Scaffolding) |                                     |
|                                  | Performance Development         |                                     |
|                                  | Symbolic function               |                                     |
| Play                             | Facilitation                    |                                     |
|                                  | Development                     |                                     |
|                                  | Enrichment                      |                                     |

### Credibility and Ethics

In the study, codes such as T1, T2, T6 for teachers and C1, C2, C23 for children were used as nicknames to not reveal the participants' identities. In order to make the findings as realistic as possible, the entire observation process was video recorded. It is stated that the researcher recording the observed environment with a device and transferring it to writing this way increases reliability (Creswell, 2016: 253). In this way, it was possible to examine it again and again later and analyze it with the field notes. Guba and Lincoln (1994) emphasized that importance should be given to the trustworthiness of the situation being researched. He used the elements of transferability, consistency, and confirmability to ensure credibility (Başkale, 2016). In order to present the situation researched with functional criteria such as appropriateness, accuracy, and reliability, six teachers were used in this study to ensure participant diversity. Regarding the reliability of the research, different coders coded

the same data set, and a consensus was obtained between the coders. While observing the participant, five-day video recordings of a random teacher were watched and coded by an independent coder separate from the researcher. Then, the transcribed texts were read independently to determine a common opinion. The texts in the coded data were re-examined by the researcher and the independent coder together. As a result of discussions and comparisons, the coders reached a consensus. This situation is evaluated to ensure the objectivity of the research (Lincoln & Guba, 1985: 292) when other researchers other than a single researcher have parallel meanings of a phenomenon (Table III).

**Table III**

*The methods followed to ensure the credibility of the study*

| Validity and Reliability                       | Methods that can be used<br>(Guba & Lincoln, 1994) | Reflected in the study                                                                                        |
|------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Internal validity                              | Credibility                                        | The researcher observed the participants in their natural environment, such as the classroom.                 |
| External validity<br>Transferability           | Detailed description                               | Long-term interaction was ensured by observing children from free play times to the time they left school.    |
| Reliability                                    | Consistency review                                 | While watching the study records, the events in the classroom were conveyed directly without adding comments. |
| Objectivity<br>Competence of the<br>researcher | Verifiability                                      | Participant diversity was provided.                                                                           |

## Findings

### Use of Language

It was determined that teachers' classroom practices were related to meaning development, self-directed speech, and social speech through "Language Use."

### Meaning Development

Teachers' use of "verbal expressions," "verbal cues," and "written language" in classroom practices are defined under the category of meaning development. In the context of verbal expressions, it was coded as teachers attracting children's attention with verbal instructions, modeling children to verbalize their behaviors, and then expecting children to verbalize their behaviors. The use of verbal expressions attracted children's attention and gave the language a helping role in performing the behavior. It was aimed to enable children to acquire the meaning concretely by the teacher both labeling the behavior with language and taking action while performing a behavior. Teacher observations are given below.

It was observed that all teachers used verbal instructions to attract children's attention. T1 used verbal instructions mostly when moving from one activity to another and once as a warning. T2 used encouraging questions, counting to five, and fingerplays at the

activity's beginning and end to get the children to pay attention to him. T3 motivated the children individually with verbal instructions and attracted their attention by gamifying them. It was observed that T3 used verbal instructions the most, and T4 and T5 used them the least. Teachers' use of verbal instructions helped children to perceive the things they should pay attention to more and to focus their attention on the teacher rather than many other things in the environment. Teachers guided children to organize their attention by using verbal instructions.

T2: "Let's see who are the most hardworking bees who collect their class. Let's look at the hardest working bees: well done C1, well done C2, well done C3, well done C4 and C5."

Four teachers (T1, T2, T3, T5) expressed what they did verbally while performing a behavior. T3 showed this behavior the most. While T1 and T2 used verbal expressions to inform the children, especially when leaving the classroom, T3 and T5 also used verbal expressions for their behaviors. The teacher's use of verbal expressions about her actions while performing a behavior increases her awareness and consciousness about her behavior. When it is considered that children learn by observing and imitating, teachers need to think and plan before performing the behavior as it will serve as a model for children.

In free time, T1 counted the children and said to herself, "There are not 5 people again," walking towards her desk and taking notes on a piece of paper.

T2 looked at the children as she headed towards the door and said, "I'm going to take a look outside. If it's empty, I think we should hang these pictures there."

Only one of the teachers (T1) specifically expected children to verbalize their behaviors. The child naming his/her behavior aloud shows that he/she has learned a facilitative way of regulating his/her behavior. It is an indication that the child has started to guide himself/herself.

During the free play time, a girl brought the shape she made with dough to the teacher and showed it. T1 took the dough in her hand and said, "Wow, I can see that you really enjoyed your work. It is beautiful." Then, while the child pretended to eat her cake, she said, "My beautiful cake."

Another code for meaning development is "verbal clues." Teachers used verbal clues to make children think and to serve as reminders. In the observations, it was observed that verbal clues were used by four teachers (T1, T2, T3, and T5). It was noted that T3 exhibited such behaviors the most. T3 used verbal expressions to remind the children how to do an activity they would experience for the first time and participated in the task with them. It was observed that T4 and T6 did not use verbal clues.

T3 said during the class gathering time, "Yes, there is a person's book here. He is a boy with blond hair and black clothes. He has white skin. His eyes are colored." A child asked, "Who is this child?" T3: "Yes, who is this child?" he looked at the class with curious eyes. One of the children answered by saying, "Child 6". T3's face lit up, and he said, "Yes, C6". C6 ran towards his teacher, picked up his book, and took it back to his place. S3 continued to ask again. "Yes

(pointing to the book), she has black hair, and her hair is a bit long." A few of the children collectively said "C" out loud. S3 continued, "She is wearing a blue sweater. Yes, C7." (She handed the book to C7.) S3 continued, "Yes. (the teacher took another book and showed it.) She is wearing a black and white outfit with stripes. There is a duck in front of her." One child answered, "C8". T3 told C8, "Take your book." and handed the book to her.

Verbal clues were given to help children remember the concept. Three of the teachers (T2, T3, T6) were observed to concretize a concept by giving clues before answering directly. T2 used clues to give children the opportunity to guess. T6 tried to explain the concept to the children, and T3 used the clues for the children to discover the concept rather than taking part in the task together with the children. In this way, T3 provided clues by expressing what was wanted to be explained with different words to give children an opportunity. In one statement, T3 answered the question he asked himself without asking the children, but then he used clues in another statement to give children the opportunity to discover. In this way, it is aimed to ensure the development of thinking skills.

As T3 left the playroom, she stopped at the door and asked the children a question. "There is an animal that comes out of the ground with the spring rains? Let's see who knows. But to my ear. No one says it. Whoever gives the right answer goes up to the classroom. It crawls like this. It has antennae. Then there's the shell. Shall we start? Those who know go up to the classroom. Those who don't know go behind the desk." Then she said, "Now it has a shell. It is so tiny. It is a sticky animal. It walks by, sticking to the walls." The child said, "Forty feet?" T3 said: "It starts with the letter 's,'" and the child got it right. T3 continued in this way one by one until all the children knew.

Most teachers (T1, T2, T3, and T4) used verbal reminders and Mediators to accomplish tasks. It was observed that they generally used verbal reminders for classroom management, routine transitions, and activity transitions. Teachers guided children to focus their attention for a certain time. The use of verbal reminders together with Mediators supports children's cognitive development and helps them to focus and concentrate their attention.

During the conversation time, when T3 wants to change the places of some of the children sitting around her to make it easier for them to listen, she sings a song containing the names of the children (stars are not counted in the sky, raw eggs are not peeled, C1 and C2 are inseparable) and changes the places of the children and makes it easier for them to pay attention.

One of the teachers (T2) was observed to model the activities by using drawings as a reminder. In this way, the teacher used drawing to remember what was said. However, there were no expressions encouraging children to make drawings. The observations determined that other teachers (T1, T3, T4, T5, T6) did not use drawings or encourage children to use them. It was observed that the use of drawing by the teacher in the development of meaning was considered important in written language, facilitating remembering, organizing ideas, and structuring thoughts.



T2: " C1 was asked, "What do you think of when I say cotton? C1 replied to her teacher as "Snow princess, cotton candy". T2: "Very beautiful things came out. Let me write them down. ( she carried the board to a place where the children could see it and started to draw by creating a concept map). C1 thought of a princess, Ahmet thought of candy." C2: "Teacher, I thought of cotton because we wipe our nail polish." T2: "Ecem thought of real cotton." C3: "I thought of a rabbit, teacher." Other children listed the things they thought of one by one: Goat, lamb, pom-pom, snow...

### **Self-Directed Speech**

Self-directed speech is a type in which children do not intend to communicate. The child's speech is vocalized and can be heard by others. However, the child also uses this self-directed speech as a self-regulatory function. This type of speech has an important place in the use of language as it gives the meaning that thinking and speaking are combined. It was observed that the children in T1, T2, and T3's classes were allowed to talk to themselves about what they were doing while doing a task, and no negative intervention was made. Three teachers (T4, T5, and T6) were more authoritarian and often told children to be quiet and not to make any noise. It is also observed that those supporting children to talk to themselves while doing something do not interfere and limit their conversations with their peers. It can be said that T2, which expects children to express themselves verbally while performing their behaviors, provides more scaffolding for children to regulate their behaviors.

While cutting a circle with scissors, one of the children in T1's class discovered the numbers on the scissors, counted them as 1, 2, 3, 4, and 5, and continued the cutting activity by saying, "This scissors showed up to 5".

While continuing her activity, Ç9, who was in T3's class, took the butterfly she had made in her hand and said, "I used to be a little caterpillar. I grew up, I became a beautiful butterfly, and then I flew around and flew around" and talked by flying the butterfly in her hand.

### **Social Conversation**

Young children need to talk to others to become aware of their thoughts. On the other hand, the teacher can check the accuracy of the information the children have acquired through social talk. When children talk to their peers during the activity, learning takes place along with language. Social talk also supports the child's thinking while talking.

The children in T1's class usually sat at the table and communicated with each other during the activity. T1 took these conversations as an opportunity and only listened to them. She intervened when there was a situation related to misconceptions. T3 fully supported the children's collaboration (ensuring peer collaboration) and their conversations about what they were doing and did not intervene in all the activities at the table. The children in T5's class rarely talked to each other during the activities due to the teacher's constant warnings about being quiet, and they usually kept their silence even when T5 left the classroom. T6 does not suppress children's talking as strictly as T5, but it was observed that she also asked them not to talk during the activity.

Several girls worked at the table during the observation of T2's class during free play time. C1 liked C2's dough. She said, "Your dough has a beautiful color". Ç2: "Take it then," and handed her a piece of dough. C1: "No, I will not mix it," and continued to make a girl figure out of the dough. C2: "I think you should make her shoes colorful." C1 did not respond. Meanwhile, C3, who was working at the same table, said, "I think you made a bride." C1: "Yes, my bride will be like this." While continuing to shape the dough in his hand, C3 said, "I will make these parts and then I will make her head." C1 pointed to his shape and said, "I am making her feet from the beginning." Listening to them, C2 applauded and said, "Ay ay, it is very beautiful."

Only one of the teachers (T3) allowed children to talk while thinking. T3 directed children to think mostly through questions. It was observed that she allowed children to talk about a book they read or before semi-structured activities and plays in a way that would allow for intellectual guidance.

After breakfast, T3 extended the free play time and asked the children to come to the center area. (Showing the ropes in her hand) "There are two ropes. I wonder what kind of a play we will play with them?" and allowed the children to say the answers they thought aloud.

It was observed that three of the teachers (T1, T2, and T3) said out loud the strategies to be followed to solve a problem.

While they were doing an activity at the table, one of the children called out to T2, saying, "Teacher, it doesn't stick." T2: "Your hands are glue. It sticks to your finger as soon as you touch the eye. Ask for help from each other. Say "Can you help me?" to your friend while sticking.

It was observed that three teachers (T1, T3, and T4), especially T3, enabled children to participate mentally in the activities.

After reading the book with the children, T3 asked them, "What should be the name of this book?". She received answers such as "Sad frog family" and "Non-jumping frog family".

It was observed that two of the teachers (T1 and T3) asked some questions to the children to check whether the main topic, concept, or activity they wanted to explain was understood correctly by the children. This awareness of the teachers led the children to think again.

T3 first explained the play they played with chairs step by step. To check for understanding, he asked the children, "What are the play's rules?". He waited for a response from the children.

T3 turned to the children and said, "First, we pass through the blue cushions, take a chair, make a Moon Grandpa around the carpet, and drink water." Then he asked the children, "What is the drinking water order?". He waited for an answer...

Two teachers (T2 and T3) checked children in different contexts to determine whether they understood a concept. Both participants were observed to have examples of children's counting acquisition. The other four participants checked children's understanding through repetition but did not engage in any control behavior in different contexts.

T2 first asked the child to write the numbers on the board, and she said. Then, she asked the child to look at the flower with numbers written on the petals. She asked the child to take some clothespins from a bag with numbers written on them. On the clothespins, both the numbers are expressed as numbers, and there are pom-poms as many as the number. The child pulled the clothespin, found the leaf with the number, and put it on. When the child said the number incorrectly, T2 made him/her count the pom-poms and found the correct number.

## **The Use of Mediators**

The theme "Use of Mediators" was examined under three categories: the function of Mediators, Mediators in behaviors, and Mediators as supporters.

### **Function of Mediators**

Another important concept in Vygotsky's cultural-historical theory is "the use of mediators." Mediators are mental reminders and facilitators that help children solve problems and retain information and are used to internalize knowledge. In the observations, teachers first created awareness of children's attention to use mediators. Teachers then introduced the tool to the children and explained how to use the tools in the classroom. Sample teacher observations are given below.

Two teachers (T1 and T3) were observed to check that the child's attention was where it should be focused. It was observed that T1 and T3 asked questions to the children for this purpose, and T3 also used the tool to attract attention to the focus.

To the child who tried to roll the paper with his/her hand while looking at his/her friend (in the study of wrapping paper on CD), T1 said: "Look at what you are doing, children! Look at the area where you are working while you are working. I can't do that work with my hand (shows a circle movement) with my eyes elsewhere (like looking to the sides)."

T3: "Children who hear me should take their binoculars. Look at me."

Three teachers (T2, T3, and T4) introduced the tools to the children and gave information about how to use them. While T4 used the tool for rules, T2 and T3 used the tool in plays and activities. Using the intermediary, children gained external guidance and found the opportunity to control themselves.

T4: "Raising a finger means 'Teacher.'" She told the children. "Raise your finger when you want to say something. Speak when I give you the right to speak," she explained. "This (he pointed by raising his finger) means 'Teacher'."

### **Mediators in behavior**

Mediators are meaningful and usable for preschool children when they are concrete, explicit, and externally present. In the classroom observations, the teachers also used concrete objects or pictures to make the mediators concrete and explicit. Only two of the teachers (T3 and T4) supported the children by using clues such as concrete objects or pictures so that they could start working independently.

(He took a block in his hand.) T3 "Now every time I hit, two people from the front will take their chairs and move to the table." (to eat fruit)

In free time, T3 and T4 placed objects such as paints and worksheets on the tables and directed the children to the tables they were interested in by pointing to them.

It was observed that only one of the teachers (T4) enabled children to use external mediators in studies such as perception, attention, and memory. The use of external mediators helps children to remember.

While T4 was having the children do a reading and writing preparation activity, she told them, "On the last page, there are the numbers 1, 2, 3, 4, 5. Now you have learned these numbers. If you can't remember them, you can look there." and pointed to the place on the cupboard where flowers were hanging as many as the number of numbers.

### **Mediators as supporters**

Teachers used mediators as a supportive tool to regulate children's behaviors or to help them acquire new knowledge/skills. It was observed that all teachers, except T5, drew children's attention with finger plays, songs, and rhymes during activity transitions. The teacher who used these attention attractors the least was T1. T1 mostly attracted children's attention with verbal instructions.

T6 started to sing the song "Let's join hands and join the ring, come on C10 you come and let's play oy oy oy, come on C11 you come and let's play oy oy, come on C12 you come and let's play oy oy oy" while calling the children to collect their materials on the table and come to the play.

It was observed that only two of the teachers (T3 and T4) created mediators for children to follow their daily routines. While T3 used to play as a mediator, T4 used music.

When T3 waited at the door with a play by saying, "Come on, children," during the observation period, the children realized it was time for breakfast and lined up. T3 used the play as a tool. When breakfast time approached, she called the children at the door and reminded them it was time to eat with a play.

### **Shared Activity**

One of the teacher's classroom practices is revealed by the "shared activity" theme. A shared activity is the realization of an activity, learning, problem, or play between two or more people. In this context, the role of the teacher in the classroom and what she does while learning and teaching take place were determined. Based on the observations, the theme of "shared activity" was analyzed under four categories: the role of the teacher, organizing the environment, organizing others, and encouraging peer collaboration.

## **The role of the teacher**

The "teacher's role" in the shared activity process was coded as guiding, increasing interaction and dialog.

In order to support the learning of classroom rules, it was observed that when the children in the class forgot the rules of the play, the teacher asked them a question to remind them of the rules. In this way, it is thought that it will permanently affect children to remember the rule again.

During free time, when some boys in T3's class made guns and played, the teacher asked them, "Were we playing with guns in class?". "You need to turn it into something else. What can you turn it into?" (there is a rule not to play armed plays in the classroom).

Four teachers (T1, T2, T3, and T6) were observed to create strategies children could use daily to solve problems. The teacher assumed the role of creating facilitating opportunities during an action performed by the children.

On the sudoku worksheet that T1 gave to the children, there were rectangle, ellipse, hexagon, and circle shapes. When the children had difficulty drawing the hexagon, T1 showed a different strategy: "You can make the hexagon like the sun."

In T3's class, when children were collecting small toys, T3 said: "You can roll up your T-shirt and collect them there."

Another dimension of the teacher's role in the shared activity process is "increasing interaction and dialog." In this way, children actively participate, mentally focus and construct their understanding. In this context, it was observed that the teacher asked questions to the children and evaluated the answers given to the questions.

In the active learning process, the teacher ensures the direct participation of children. Observations revealed that three teachers (T1, T2, and T3) guided children to construct their understanding by asking them questions.

T2 asked C1, "What did they pay attention to regarding cleanliness in this picture?" C1 answered aloud by saying, "They wore gloves." T2 nodded and said, "They wore gloves, glasses..." Without waiting for T2 to finish, İrem Cx said, "They also wore hats". T2 continued, "They wore bonnets on their heads. Their hair can fall into the food while cooking. They wore glasses. So why did they wear glasses?" C2: "So that oil would not splash in their eyes." T2 asked the other children, "Maybe. What else could happen?" Sarp Cx answered, "So that his eyelashes would not fall off." T2 said, "Yes, that came to my mind first. Yes, while cooking, they took themselves to safety so that their eyelashes would not fall into the food, and what Ahmet said is very true. They took themselves to safety so that oil would not splash into our eyes."

It was observed that three teachers (T1, T2, and T3) focused on "how they reached" their answers when they asked a question. This reduces the possibility of random correct answers and supports their self-expression and thinking skills.

T1: (addressing C13) "Are those shoes of your street or inside shoes?" C13 only answered by saying, "Yes." T1 asked again, "Did you change your shoes inside? Were your shoes like that?"

C13, making his hands into fists and getting angry with his teacher, replied, "Yes. Look, look at the bottom of my shoes. It is clean."

A sulking child said that his friend did not like him. T3 asked the child how he/she decided this, and the child said: "Because he doesn't want to play with me; he doesn't give me the role I want."

It was observed that two teachers (T2 and T3) focused on "how relevant" the children's answers to the questions were. It was observed that T1, on the other hand, focused on "how they reached" the answers the children gave when they asked a question but did not pay attention to "how related" the answer was. This requires taking into account the possibility of children's possible correct answers. On the other hand, determining how related the answers are shows the children's engagement.

(They arranged the chairs back to back in two groups.) T3 told the children, "You must be in equal order." He looked at the line and said, "The best thing is to call your helper aunt. Because we need one more person." Ç6 said, "Let it be C14". T3 replied, "C14, but he can't play this play very fast." This time, C7 said, "Teacher, then you will be the one." T3 said, "But I will do this (hits two sticks together). I will give a signal." C7 said to the teacher, "Without giving up, you will be at the back, you can also both play and perform."

Only one of the teachers (T1) emphasized the features to be considered by using children's answers. The teacher uses this method to increase the permanence and internalization of that feature through the child's response.

T1 asked the children, "Which sounds did we learn before?" (She waited a while and continued.) "We learned the sound 'ah.' We learned the sound eee. We learned the sound ee when we said apple, October, September." One of the children said Ecrin. T1 confirmed the child, "Ecrin, yes. Ekrem, Eymen. We learned the sound ii. What were the ones that start with ii?" Another child shouted, "İpek." T1 said, "Yes, İpek starts with ii. We said human, climate, cow, needle, and thread all start with the sound ii."

## **Organizing the environment**

Another category of teachers' classroom practices within the scope of shared activities is "organizing the environment". In this context, organizing the environment was coded as affective and physical. Organizing the environment as "affective" includes the arrangements that can be made for children to be free to explore new ways, participate, and focus.

It was observed that only T1 of the teachers allowed children to explore and experience.

T1: "He also found such a solution. He could not turn it over and tore it. It can be possible. After all, he did it. The important thing was to complete the shell, to make it." Another child told T1, "I can do it like that (draws a circle in the air). I have another option."

It was observed that three of the teachers (T1, T3 and T4) enabled children to participate in cooperative play-based activities.

T4 spread a large piece of kraft paper on the floor in her classroom and asked the children to

work in groups. She said, "This will be our forest, and these are our trees," and showed the paper to the children. You can fold it as you like. We will take our crayons. Let this be a tree, for example (S4 folded the cut round), we will make the trunk. We fold our flowers. We will make the trunks with crayons. The children started to create their trees on kraft paper.

There are various class management strategies that teachers implement. It was observed that only T2 from teachers, once ignoring distractions, attracted the attention of children. Other teachers, instead of ignoring, have attracted attention more on that dispenser by warning the child. Ignoring distractions is a teacher behavior that supports children in terms of regulating behavior.

While T2 was collecting the experimental materials, the children spoke very loudly, and she started singing the song, "Tap your hands, tap, tap, tap, tap, tap," and the children continued to sing the song.

It was observed that two teachers (T1 and T3) allowed children to communicate by talking, drawing, or other ways. It was observed that the other teachers generally wanted the children to work silently outside the free play time.

In T1's class (among the children who drew pictures), C13 said, "What have you done here now?" C15 said, "I am going to build a house after I paint what I drew." C16, "Look, I colored it like you." C17 said to C16, "Go to the next section. Then do like this," and showed a drawing from her paper. At the same time, C13 explained his drawing to C15. They said, "These are clouds, and these are lightning."

The "physical" organization of the environment is the teacher's indirect involvement in the shared activity. These changes to the learning environment included positioning props, toys, and tables. Three teachers (T2, T3, and T5) were observed to prepare the environment for the children to create different types of shared activities.

When T3 came to the classroom in the morning, she separated the tables and put materials on them for the children to work with. These materials were paints, legos, dough plays and toys, and papers of different geometric shapes. She organized many tracks for movement activities with materials such as rope, hula hoops, and cushions.

It was observed that one of the teachers (T3) changed and updated the learning environment occasionally. The classroom environments of T5 and T6 were too small to be open to physical change. On the other hand, although the other teachers' classrooms were quite large, it was not observed that they made a different arrangement regarding the learning environment.

One day, T3 put the pots where they had previously planted lentils and broad beans on one of the tables for free play time, a book for completing a story called "Lamb with Henna" on another table, and matching cards and Legos on another table. Depending on whether the children used that section or not, she removed the work on the table that had not been visited for a while. She gave books to children who wanted to make second and third books in the spaces opened by their removal. She put Legos, plastic toys, and paints on the tables. On another day, T3 moved the tables to separate places and put dough, watercolors, and crayons. She also put books on a separate table for children who wanted to study math. On another day, she organized the tables



in a U-shape to expand the classroom environment. She placed different materials on each table. She placed interlocking toys, Legos, plastic animals, number beads, and musical instruments.

### **Organizing others**

Another important category in classroom practices is "organizing others." Organizing others is defined as the child's organization of another child's behavior or the teacher's organization of the child's behavior. Organizing others is also considered a prerequisite for self-regulation. It was observed that by enabling children to organize others, they took responsibility for the behavior they were expected to learn. Three teachers (T1, T2, and T3) allowed children to organize their peers' behavior. Teachers (T4, T5, and T6) who did not allow children to talk about the activity with their peers during an activity also did not allow children to organize their friends' behaviors.

In T1's class, C18 reached out to take his friend's glue to glue his eyes on his snail during the activity. The other child who owned the glue tried to prevent him with his arm. C18 said, "Sharing is good." When the owner of the glue pulled his arm away, C18 took the glue.

While tidying up the classroom, C14 (a child with special needs) was interested in the boxes in the cupboards. One of his friends came to him and said, "hiss hiss hiss" and took him by the hand and led him to another playground.

It was observed that only one of the teachers (T2) deliberately made mistakes and allowed the children to correct them. The other teachers occasionally emphasized the right thing to do. In this way, the teacher plays an active role in the learning process for children to gain the ability to organize their behavior. Allowing the child's friends and the teacher to organize their behavior was one of the methods used to realize that the rule was generalizable.

T2 said, "Now, children, we took soap in our hands. We did not rub it like this. We opened the tap. There is soap in our hand. We put it in the water and pulled our hand out. Do you think our hand will get rid of germs like this?" and then waited for a response from the children. The children shouted, "No". Child 1 said, "Our hand stays foamy." Another child said, "There are chemicals in the foam." S2 said, "I wish it stays foamy. A little soap gets on it. He doesn't even get any soap on his hand. He puts the soap in the middle of his hand in the water and pulls it out. Do you think the hand will get rid of germs like this?" The children shouted "No!" together. T2 said, "Actually, your friend is right. There are chemicals in our hands. If we don't wash our hands very well..." T20 jumped in and interrupted the conversation by saying, "It gets dirty when we eat."

Only one of the teachers (T6) directly asked a child who did not follow the rules to identify his/her friends who made the same mistake. This is seen as a step to ensure that children develop awareness about identifying mistakes and thus develop self-regulation skills through regulating others.

As the assistant teacher, T6 chose C19, who made noise and talked a lot. When he spoke again, she said, "C19, aren't you the teacher's assistant? Shouldn't the teacher's assistant be like a teacher? Shouldn't he be an example? Shouldn't you warn your friends when they do something wrong? Do you understand the duties of a teacher's assistant?" C19 listened to the

teacher and said, "I will be like a teacher."

### **Encouraging peer collaboration**

Within the scope of the shared activity, the teacher's "encouraging peer collaboration" to scaffolding learning is among the classroom practices. It is beneficial for children to work and practice with their peers. In this way, children with different competency levels were encouraged to move forward together and engage in different activities.

It was observed that all teachers except T6 allowed children who could complete a task without help to work with children who could not. While T3 allowed children to work together the most, T6 supported children more individually.

C1 had difficulty in coloring. T2 told him to ask his friend for help. His friend said: "C1, look, this is how I paint," and showed him how to do it. C1 started to paint by holding the paint like her friend (by taking the paint in her palm) and doing what she did.

T5 called C21 and said, "Are you done?" C21 said, "It is finished, but I have paint left." She gave her answer. T5 said, "Can you help C22? Can you help C22 after C21 collects your paint?"

It was observed that T3, one of the teachers, ensured peer collaboration by assigning different roles/tasks to different children in the activity. T3 evaluates and changes the tasks taken by children according to their differences, especially in activity changes.

While T3 gave children the task of pulling the ropes in the play and movement activity in her classroom, she gave C14 an easier task. Since C14 could not do it alone, he assigned another child to help him. (C14 gives additional information!)

### **Zone of the Proximal Development**

According to the observation of the teacher's behaviors in the context of the child's "zone of the proximal development" theme, two categories were identified: providing support (scaffolding) and developing performance.

#### **Providing Support (Scaffolding)**

The first step in determining the child's potential developmental area is to determine the behaviors that the child can do independently. Teacher observation is considered important for this. It was observed that T1, T2, and T3 made detailed observations to determine the developmental level of the behaviors that each child can do independently. Through observations, it is possible to determine what children can do independently, how much help they need, and how they will progress.

While writing the number 9, according to the needs of the children, T2 goes to them and makes some of them do nine by holding their hands, supports some of them by just standing next to them, and reminds them of the steps and makes them do it.

While T3 asked the children to proceed by jumping from the hula hoops with both feet, he said to C6: "You wait, C7, you start. C6, you go behind him."

Teachers make observations to determine children's development. In their observations (T1, T2, T3, and T5), they realized to what extent the children faced difficulties in activities and tasks. Thus, they gave instructions that allowed children to develop individually.

When a child was uncertain how to glue the circles on the paper, T1 approached him and corrected his paper. "Hold it like this. You should place the colors on the paper first and then start gluing. Okay?" and put one sample circle on the paper. "Which color do you want next to this one? Place it first. After placing it, glue it." watch the child do it.

After the child struggled for a long time to find and color similar objects, T2 sat next to the child because it was time to go. "You find them and tell me, and I will do coloring?" he said. The child suddenly became active and started to show it to T2 faster and completed the activity in a short time.

### **Performance Development**

During the observations, the teachers independently observed the children's potential and identified their difficulties. It was observed that T2 and T3 enabled the children to take tasks at different levels for their performance development. In this way, opportunities were provided for children to acquire skills with different difficulties in their learning processes.

T2 said, " C4, you collect the whole round table. C5, you collect the place where you work and put the scissors."

When the children went to their plays, T3 put an empty basket and another box with toys side by side. She showed the baskets to C14. "Can you put these in it?" she asked him. C14 said, "I am me," and hit his chest with his hand in a satisfied way.

Most teachers (T1, T2, T3, and T5) regularly observed children's behaviors that they could do with adult support. It was determined how high children's developmental progress can be when they receive support. As the adult provided step-by-step support, children's development and learning increased. In this way, the individuality of each child is accepted by the teacher.

T1 said, "Now, everyone should stick their CD to the snail's shell." C13, addressing Ö1, asked, "Is this the right place?" while turning the CD to show both sides. T1 replied, "Just as you left it." and moved towards the child. When he saw other children also confused, he took one child's CD in his hand and said, "The shiny side goes up." Then he pointed to the matte side and said, "Put the glue here and stick your CD. Despite the explanation, he went to the children who couldn't do it. Pointing and showing, he said, "Put your glue here," and handed it to them, then said, "Stick it."

"While working on rhythm exercises with the T3 children, they adjusted themselves to the child's performance, providing verbal instructions to some, demonstrating on their own sticks to others, trying multiple times with some, and starting over with others."

(In the butterfly crafting activity) C21 called out, "Teacher, I can't make the wings." T5 responded, "C21, you can make them by cutting what you have in a rectangular shape. Cut two pieces."

C21 struggled for a while and managed to cut one wing. C5 was observing C21 all the while. "C21, look, you've cut it. I told you that you can do it. Kids, you can do it willingly. Now, go ahead and cut the other wing," T5 encouraged. C21 struggled for a while, then went to Ö5 and extended the wing, saying, "I couldn't do it." T5 replied, "But you did cut one wing." C5 looked at C21, and after making eye contact, said, "Alright, let's stick them together."

## **Play**

The theme of "play" was analyzed under four categories: symbolic function, facilitation, development, and enrichment.

### **Symbolic Function**

All teachers allow children to play "pretend plays" in their classrooms. They are aware that these plays will encourage productivity in children's imagination. Free play time, in particular, was observed to be the most appropriate time for this. In this play, children used symbolic representations, assumed different roles, and built imaginary scenarios.

T6 took the children to the garden. (Part of the garden is a sandbox, and part is a toy area.) The children scattered to play in the area they wanted. The teacher went to the children and looked at them. When T6 came to them, one of the children said, "We are making a cake. And tea for you." and handed the cup filled with sand. T6 took it in his hand, brought it to her mouth, and said, "Mmm, thank you. Don't you have any for the other teachers (interns)?" The child ran to his friends, made a cake and talked to them. Those children also took a cup and gave it to the teachers next to T6.

When T6 took the children out to the garden, there were some children who chose to play in the playground or with the soil. One of the children playing with the soil said, "Teacher, we hid treasure (rocks) inside this (sand hill)," as they pointed to the sandy area they had created with their friends.

### **Facilitation**

Teachers' asking children's plans about the play before starting the play and including more small group activities are deliberate behaviors that involve "facilitating" the play for them.

It was observed that T2, T3, and T5 asked the children what they would play before the play started; in this way, they helped the children plan their own plays. It was determined that when children made a plan before they started to play, they focused on that fiction, thought, planned together, and were willing to solve problems.

T5 said, "Come on, let's play sitting down for a bit (the classroom is very small, and the children had started to climb on the table). Come on. (The children came to the carpet.) What do you want to do or play while sitting? The child quietly said, 'Hand in hand xxx,' so the name of the game wasn't understood. T5 asked, "What is that?" (The child demonstrated by hitting the ground.) T5 replied, "There might be something on the table too." Another child said, "Let's play." T5 asked, "What? What have you decided to play?" The children began to turn their hands. T5 said, "Okay, go ahead and start." (and left the children.) The children played rock, paper, scissors."

It was observed that T2 and T3 used small group activities for teaching basic academic skills. Teachers determined how much all children in the small group learned and how much help they needed and intervened accordingly.

T2 called three children to play sudoku on the board during free play time. One child was confused about the numbers after 3. T2 made this child cooperate with the other children.

|   |   |  |   |
|---|---|--|---|
| 1 |   |  |   |
|   | 3 |  | 2 |
|   |   |  | 4 |
| 3 |   |  |   |

"What should come here?" Cx Hasan said 4, and repeated 4, 4. T2 said, "Look, there are 4 here. (The child wrote under 1.) "Barış, you find out what should come here." Barış said to himself in a low voice, "1 will come here". T2 said, "There are 2, 3 and 4. Write what is left to come." BarışCx wrote 1. (A three-person activity)

### Development

Children may need scaffolding for the development of their play. The planning and participation of parents in the classroom is very important for them. In addition, it can be said that children's ability to establish and conduct plays with their friends and their knowledge of how to resolve conflicts during the play are also in the category of play development.

Teachers included family participation activities to ensure the continuity of learning. For this purpose, one of the parents is invited to the class. Depending on their preferences, they either carry out an activity in the classroom with the children or present an activity they had previously done with their child at home. In this way, it was observed that three of the teachers (T2, T5, and T6) cooperated with their parents. The other teachers (T1, T3, and T4) did not cooperate with parents inside or outside the classroom.

In T5's class, the mother brought cloth bags for the children to paint. For Mother's Day, each child was to paint and decorate these cloth bags and present them to their mothers. The children made decorations in various shapes on the cloth bags with potato printing. During the activity, T5 and the mother supported the children.

T6 asked the children to prepare a storybook with their parents within parental cooperation. The children created a story by drawing pictures for their own story, cutting some pictures from magazines or newspapers, and pasting them into the book. The mother also wrote down her story. T6 said, "We will read the storybook your friend prepared with her mother." They read the story in the classroom.

It was observed that all four teachers (except T5 and T6) guided children in different ways to solve conflicts among their peers appropriately. T1 and T3 supported children by reminding them how to express their problems and what to do in the face of problems. It was observed that T2 only used verbal warning and actually warned the children not to escalate the situation rather than guidance; T4, in addition to her guidance, sometimes assigned the dominant child who had a problem or called him/her and suggested another solution.

T4: "What happened?" she asked. The child showed his friends sadly. T4, "Then talk with C23, but not always what you want." C23 said, "It is always what C22 says anyway. He wanted a picture. We made a picture." C22, "No, we did it according to you." T4, "What will you decide then? Let it be what you say and what he says." C24, "Something came to my mind: let's do it like this, let's take turns. Let it be for all of us. Once you, once me, once you. Let's all take turns."

## **Enrichment**

Another category of the play theme is "enrichment." The enrichment category includes children's playtime, appropriate use of materials and toys, teacher intervention in play, and guidance to ideas that enrich the play's content.

All teachers were interested in children's ways of expressing themselves and stated that play is a product of children's imagination. Although they allowed the children to play for 40-60 minutes without interruption, it was observed that T3 and T4 did not direct the children to another activity before the end of their play.

T1 called out to the class by shouting, "Yes, Little Geniuses." The children responded to T1 by saying, "It's time to gather." T1 said, "Yes, it is time to gather. Let's go to breakfast. You were playing very well, but sorry, it is breakfast time. After that, we have studies. I can give you time if we have time after our studies. But it's over now. Let's get ready."

Two children were playing side by side, making a gun out of Legos and making "click, click, click" sounds. T3 watched the children for a while and said, "After you use it, you turn it into something else, okay?"

[While the class was gathering, she separated the table of the children who did not finish the puzzle and gave time for two children to finish. When the class gathered, other children and T4 watched the puzzle makers].

All teachers ensured their classrooms were equipped with paints, materials, and toys appropriate for children's development. There are also toys with multiple functions in the classrooms.

(After reading the story) "Now I say if I distribute these pages to you. They are immediately on the tables. In 5 minutes, in a short time, you can cut these lines and make yourselves a rabbit head. You can be rabbits. I will be the wolf. Would you like us to act this out?" "Yes!" (some children went to the tables, hugged the teacher, and passed.) [T3 had materials such as hula hoops, cushions, and rope to make the track in play and movement activities. ]

[In the dance of the fairies and the bees with belly, T3 told the girls to give tulles and move them slowly, and the boys to take a cushion put them in their clothes, and make a belly for themselves].

Most of the teachers leave the children alone in their plays. It was observed that only T3 made attempts for children to gain experience with themes that would enrich their plays.

T3 called the other children in the classroom and asked them some questions.

T3 said, " C7 made a hippopotamus from the squares here. Anyone who wants to look can

come. Where do hippos live?"

C7, "In water," T3, "Well then, do you want to draw water for her?" C7 sat at the table and took paint and paper. She started to draw. T3, "Does this hippopotamus travel alone or have friends?" C7, "It has friends." S3, "Then can you draw them too?"

It was observed that only T3 of the teachers wanted the children to be taught "how to do" the activity and wanted them to explain "why" they were doing the activity.

Children who wanted to work at a single table were gathered. T3 went to them and supported them occasionally about how they should work. T3 showed how to work on the activities in the book by going to C24. T3 said, "Count the stars in the flying balloon. Then, write them on the clouds next to it. How many are there here?" C24 answered by saying, "2". T3, "OK, write it down."

T3 asked the child doing bookwork: "What does he want you to do here, and why?"

## Conclusion and Discussion

This study determined how the teacher's classroom practices are reflected in the learning environment in the context of Vygotsky's cultural-historical theory. In the USA, E. Bodrova and D. J. Leong prepared a curriculum called Mind's Tools by transferring Vygotsky's theory to the practice field and working on it. In this way, it has started to think about how to apply the Russian-based theory to the Western curriculum. In line with this study, all these practices were evaluated, and a teacher observation form was created by the researchers. Teachers' classroom behavior processes were examined under five themes with the observations made, and different categories were included under each theme. The themes were analyzed as follows: In the theme of "use of language", meaning development (verbal expressions, verbal cues, and written language), self-directed speech, and social speech. In the theme of "use of mediators," the function of mediators, mediators in behaviors, and mediators as supporters. In the "shared activity" theme, the themes were analyzed as the role of the teacher (guiding, increasing interaction and dialogue), organizing the environment (affective and physical), organizing others, and encouraging peer collaboration; in the "zone of the proximal development" theme, support, performance development; in the "play" theme, symbolic function, facilitation, development, enrichment.

Children's development is shaped by the environmental and cultural context resulting from the classroom experiences, activities, and interactions provided to them. The quality of teacher-child interactions in preschool classrooms significantly affects children's language development (Cunningham et al., 2020; Veraksa et al., 2019). As a result of the analysis of the observations made in the context of the teacher's "Use of language" theme, it is necessary to ensure meaning development first. Meaning development includes attracting children's attention with verbal instructions, acting with them by giving verbal clues, and supporting children to generate their questions and answers by giving as many clues as possible. Von Suchodoletz et al. (2014)



emphasizes that teachers should encourage children's problem-solving efforts concerning their learning processes rather than giving general praise or outcome-oriented feedback. In addition, teachers' language sensitivity that facilitates communication leads to a quantitative increase in children's vocabulary (Justice et al., 2018). Teachers' asking questions and giving clues are considered as positive expression categories in classroom management (Akgün, Yazar ve Dinçer, 2011). In order to support children's active participation in the classroom, teachers should ask open-ended questions and guide them through interactive dialogues (Huang et al., 2019). Teachers' strategies to increase the frequency of children's conversations in the classroom show that they involve children in more conversations and that child-initiated conversations increase child engagement (Bradley & Reinking, 2011; Cabell et al., 2015). More experienced teachers' interactive use of language in different environments, such as large groups, circle time, and centers in the classroom environment, and giving clearer instructions are effective in supporting children's language development (Phillips et al., 2018).

In the teacher observations, it was observed that the teacher's verbal expression of his/her behaviors served as a model for the children and encouraged them. In fact, this has a similar relationship with engaging in self-directed talk. It was observed that teachers who exhibited self-talk behavior also allowed children to talk about the activity with their peers. These teachers were also observed to say out loud the strategies to follow when solving a problem. It was found that there was a positive relationship between self-talk and mind manipulation in older children.

In contrast, self-talk and beliefs were positively associated with younger children talking about the task (lao et al., 2015). These findings suggest that through self-talk, language can regulate social cognitive processing. It has been stated that children who begin to internalize self-directed speech also develop self-regulation skills (Bayhan ve Saranlı, 2010; Bråten, 1991), have better social skills, and show fewer behavioral problems (Winsler et al., 2003). This means preparing the environment for a positive classroom climate.

Vygotsky's approach to mediators explains how children's cognitive processes are shaped. Mediators support the development of independent thinking in children and facilitate problem-solving skills (Kozulin & Presseisen, 1995; Linask, 2019). Thus, it enables them to acquire high-level mental functioning (Gillespie & Zittoun, 2010; Veraksa & Veraksa, 2018). In line with the research results, teachers try to teach the function and correct use of an intermediary to support children's thinking processes. Bomer (2003) stated that mediators are valid in a particular discourse and context, temporarily visible, and gradually transformed through internalization. It was observed that the participants used mediators only in activity transitions through music and in following daily routines.

The role of the teacher affects children's classroom behavior (Ünlü ve Tunç Pekkan, 2019). Rojas and Abenavoli (2021) state in their study that the quality of teacher-child interaction in preschool classrooms increases children's participation in the classroom.

It was concluded that when the teacher is sensitive and supportive towards children in the classroom and when the teacher approaches the child's perspective, children's participation is strong (Emilson & Folkesson, 2006). Sheridan et al. (2014) stated that teachers' competencies in organizing to create good conditions for children's learning varied across preschools, and this was related to the teacher's approach. Within the "shared activity" theme, it can be said that teachers' role of guiding children and increasing interaction and dialog with them is directly related to increasing children's participation. Shared thinking is replaced by collective interactions in which the teacher relinquishes control over the activity, leaving children to develop their ideas with their peers (Papandreou & Yiallourous, 2020). In their study, Ortega et al. (2009) reported increased children's joint play with their friends when the teacher assumed an observer role. As a result of the observations, it was observed that teachers guided children to participate in cooperative play with their peers, thus giving children the opportunity to explore and experience. In this respect, the spatial organization of the classroom environment can be updated from time to time to create different types of shared activities.

In a preschool classroom's busy, active environment and as a single teacher, it can be difficult to observe individual children's behavior patterns throughout the activity. Nevertheless, to ensure children's individual development, the relationship between learning and development gains importance through a process of co-construction. It has been shown that a positive relationship exists between teachers and children's interactions as scaffolders (Smidt & Embacher, 2020). Teachers' detailed observations to determine the child's developmental level, noticing the degree to which children face difficulties in activities and tasks and providing assistance, observing what they can do with adult scaffolding and what they can do alone while providing assistance, enabling children to take on tasks at different levels in activities, and being sensitive to their reactions to all this scaffolding and assistance helped them to maximize their zone of the proximal developments. Breive (2020) states that it is important for the teacher to trust children's ability to take responsibility to co-construct the zone of the proximal development.

Another theme, "play", provides an important context for children's learning. In play, the child engages first with himself and then with others, and this gradual process enables him to interact with his environment. Child engagement is found to increase more in free play than in other types of play (Åström et al., 2020). All of the teachers gave the opportunity to play "pretend plays." During this time, the children themselves decided which plays to play. It is stated that when children's choices are active, they progress in their cognitive flexibility (Ansari & Purtell, 2017). It has been revealed that to maintain children's play, teachers only make conversations to continue the play themes without getting involved in the play (Keleş et al., 2018). It was observed that while children were playing, teachers were usually busy with various tasks and left the children alone. They mostly talked to a single child and had instantaneous interactions (Åström et al., 2020). In this study, all teachers need to be supported in ensuring that teachers gain experience with themes that will enrich children's play and model for

children how these themes can be handled together. Cabell et al. (2013) observed that teachers interacted more with children in large groups and free time settings than during meals and routine time, modeling language use and giving feedback to children during conversations. The least effective instructional interactions occurred when moving from centers to large groups. This study observed that teachers were more supportive of play in small groups and included small group activities to provide "facilitation" for children.

This study attempts to understand teachers' classroom practices in the context of Vygotsky's cultural-historical theory. It is seen that teachers who actively adopt the use of language also show this interaction in other areas. Although some teachers had practices about the function of mediators, it was observed that mediators were not used sufficiently in the classroom regarding behaviors and support. The shared activity and play titles were parallel practices among themselves. In fact, teachers need guidance on what they need to do other than facilitation to be aware of the impact of play on children's development. It has been observed that there is a need for a platform where informative and theory-based practices can be shared and discussed, especially in the themes of organizing others and peer cooperation, symbolic function, support, and enrichment. In future studies, theoretical information can be provided to teachers, and the transfer processes to practices can be re-examined. In fact, by developing cooperation between teachers, they can be provided to guide each other in terms of classroom practices to support their zone of the proximal development. In addition, although the study was conducted with intensive observations and recording, there may be some data loss since many themes were tried to be interpreted simultaneously. For this reason, the themes can be handled separately for future studies.

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## Genişletilmiş Türkçe Özet

Öğrenme sürecinin etkili bir şekilde sürdürülmesi öğretmenin çocuklarla etkileşim halinde olmasına bağlıdır. Bu etkileşim sürecinde öğretmenin çocukların öğrenmelerine rehberlik ederken kolaylaştırıcı bir rol oynaması beklenmektedir. ABD’de E. Bodrova ve D. J. Leong tarafından Vygotsky’nin kuramının uygulama alanına aktarılması ve üzerinde çalışmaları ile Zihnin Araçları adında bir müfredat hazırlanmıştır. Böylelikle Rus temelli olarak ortaya atılan kuramın batılı müfredatlarda nasıl uygulanacağı üzerine düşünölmeye başlanmıştır.

Bu araştırmada öğretmenlerin sınıf içi uygulamalarının Vygotsky’nin kültürel-tarihsel kuramı bağlamında öğrenme ortamına nasıl yansıdığını belirlemeye odaklanılmıştır. Çalışma nitel araştırma modellerinden durum çalışması ile desenlenmiştir. Araştırmanın veri setini oluşturan altı öğretmenin tümü, aynı okul öncesi eğitim kurumunda görev yapmaktadır. Öğretmenlerin her biri, katılımcı olmayan gözlemci tekniği ile okulda bulundukları yarım günlük süre boyunca beşer gün gözlemlenmiştir. Gözlemler araştırmacılar tarafından hazırlanmış olan “Öğretmen Gözlem Formu”na göre takip edilmiştir. Gözlemlerin çözümlemesinde içerik analizi kullanılmıştır.

Öğretmenlerin sınıf içi davranış süreçleri yapılan gözlemlerle birlikte beş tema altında incelenmiş, her tema altında farklı kategoriler yer almıştır. “Dilin kullanımı” teması incelendiğinde anlam gelişimi (sözel ifadeler, sözel ipuçları ve yazılı dil), kendine yönelik konuşma ve sosyal konuşma; “aracıların kullanımı” temasında araçların işlevi, davranışlarda araçlar, destekleyici olarak araçlar; “paylaşılan etkinlik” temasında öğretmenin rolü (rehberlik etme, etkileşim ve diyalogu artırmak), ortamın düzenlenmesi (duyuşsal ve fiziksel), diğerlerini düzenleme, akran iş birliğini teşvik etme; “potansiyel gelişim alanı” temasında destek verme, performans geliştirme; “oyun” temasında sembolik işlev, kolaylaştırma, geliştirme, zenginleştirme olarak temalar çözümlemmiştir.

Sonuç olarak, öğretmenlerin Vygotsky’nin kültürel-tarihsel kuramına yönelik teori ve uygulama açısından bilgilendirilmeleri gerektiği ve teori alt yapısında pratiklerin paylaşılmasına ihtiyaçları bulunduğu sonucuna ulaşılmıştır. Yapılan öğretmen gözlemlerinde öğretmenin kendi davranışlarını sözel olarak ifade etmesinin çocuklar için model oluşturduğu ve onları teşvik ettiği gözlemlenmiştir. Bunun aslında kendine yönelik konuşma gerçekleştirmeyle de benzer bir ilişkisi vardır. Kendine yönelik konuşma davranışı sergileyen öğretmenlerin, çocukların akranları ile etkinlik hakkında konuşmalarına da izin verdikleri görölmüştür. Bu öğretmenlerin aynı zamanda bir problemi çözerken takip edilmesi gereken stratejileri sesli bir şekilde söyledikleri de gözlemlenmiştir. Dilin kullanımı’nı aktif şekilde benimseyen öğretmenlerin diğer alanlarda da bu etkileşimi gösterdiği görölmektedir. Bazı öğretmenlerin araçların işlevi hakkında uygulamaları bulunsa da davranışlarda ve destekleyici olarak araçların sınıf içinde yeterince kullanılmadığı gözlemlenmiştir.

Paylaşılan etkinlik ve oyun başlıkları kendi arasında paralel uygulamalar olmuştur. Aslında öğretmenlerin oyunun çocukların gelişimleri üzerindeki etkisinin farkında olmaları için kolaylaştırma dışında yapmaları gerekenler hakkında rehberliğe

ihtiyaçları vardır. En az etkili öğretimsel etkileşimler merkezlerden büyük gruba geçerken gerçekleşmiştir. Bu çalışmada öğretmenlerin küçük gruplardaki oyunları daha çok desteklediği, çocuklarda "kolaylaştırma" sağlamak için küçük grup etkinliklerine yer verdiği gözlemlenmiştir. Öğretmenlerin çocukların oyunlarını zenginleştirecek temalarla deneyim kazanmalarının sağlanması ve bu temaların birlikte nasıl ele alınabileceği konusunda çocuklara model olmaları konusunda tüm öğretmenler desteklenmelidir. Gözlemler sonucunda öğretmenlerin, çocukları akranları ile birlikte iş birlikçi oyunlara katılmalarına rehberlik ederek bu yolla çocukların araştırıp deneyimlemelerine fırsat verdikleri görülmüştür. Bu açıdan sınıf ortamının mekânsal düzenlemesi zaman zaman güncellenerek farklı türdeki paylaşılan etkinliklerin oluşturulmasına zemin hazırlamaktadır. Öğretmenler özellikle diğerlerini düzenleme ve akran iş birliği ile sembolik işlev, destekleme ve zenginleştirme temalarında bilgilendirici ve teori alt yapısında uygulamaların paylaşarak tartışılacağı bir platforma gereksinim duyulduğu gözlemlenmiştir.

Yapılacak olan sonraki çalışmalarda öğretmenlere kuramsal bilgilendirme yapılarak, pratiklere aktarım süreçleri tekrar incelenebilir. Hatta öğretmenler arasında bir iş birliği geliştirilerek potansiyel gelişim alanlarını destekleyecek şekilde sınıf içi uygulamaları noktasında birbirlerine rehberlik etmeleri sağlanabilir. Ek olarak çalışma yoğun gözlemlerle ve kayıt altında gerçekleştirilmiş olmasına rağmen aynı anda pek çok temanın bir arada yorumlanmaya çalışılması nedeniyle bazı veri kayıpları olabilir. Bu nedenle daha sonraki çalışmalar için temaların ayrı ayrı ele alınması sağlanabilir.

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| Authors            | Contact                                                           |
|--------------------|-------------------------------------------------------------------|
| Naşide Nur Karaman | Ankara University, Turkey.<br>E-mail: nasidenurkaraman@gmail.com. |
| Mustafa Sever      | Ankara University, Turkey.<br>E-mail: severmustafa@gmail.com      |
| Çağlayan Dincer    | Ankara University, Turkey.<br>E-mail: fcdincer@gmail.com.         |