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Attitudes of Preschool Teachers on the Use of Music Activities in Early Childhood Education

Research Article

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ABSTRACT

In education, students can be provided with a particular discipline and behaviour. Emphasis is placed on shaping the individuals in the preschool education period and their mental and emotional development. Music has an impact on many areas, especially children's psycho-motor development, language development, emotional development, and social development. Therefore, they significantly contribute to children in the education process they start before primary school. For this reason, the research aims to draw attention to the importance of using music activities in preschool. In this study, which was carried out with the method of phenomenology, the views of 19 preschool teachers from various provinces on music activities were analyzed. In the semi-structured interview form prepared in line with expert opinions, there are opinions about music activities and information about teachers' self-efficacy perceptions about their music education. Two researchers coded the qualitative data from the teachers separately and analyzed them with themes. Consensus reliability analysis was used in the research. As a result of the study, it was concluded that preschool teachers found music activities beneficial. Despite this, preschool teachers said their music education proficiency should be better. Consequently, more emphasis should be placed on music education in preschool education.

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Keywords:

Pre-school education, Music activities, Music in pre-school education, Music and education

Introduction

The effects of music on people have been known for a long time. Music, used in many societies that have lived on earth, has been seen as more than just a means of entertainment. It is natural for music to reflect societies, as it is also a cultural tool. Thus, music is a bridge from the past to the future. Since the future is

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made through the upbringing of new generations, music has educational roles, both culturally and qualitatively. The use of music as a tool is an important educational method used by societies.

Education aims to bring desired behaviors to the individual (Ertürk, 1975; Sönmez, 2015). Music, an important branch of education, aims to provide individuals with desired musical behaviors (Uçan, 2018). Platon states music is a powerful educational tool (Van der Linde, 1999). Music education provides many benefits to children, including self-discipline, self-sacrifice, cultural sensitivity, and self-confidence (Petress, 2005). Music is too powerful to be excluded from children's lives, whether at school or outside (Campbell & Scott-Kassner, 2018). In addition, the fields of art education and early childhood education are compatible with each other in many ways (Baum, 2017).

Music education plays an important role place in the development of children in early childhood. The benefits gained while developing musical skills show that music has an important place in children (Peery & Peery, 1987). Studies have shown that music programs improve children's motor skills (Derri, Tsapakidou, Zachopoulou, & Kioumourtzoglou, 2006). It has been shown that music education contributes to the development of control, auditory-verbal working memory, cognitive flexibility, and all executive functions in children (Bayanova, Chichinina, Veraksa, Almazov, & Dolgikh, 2022).

Music education, which has many benefits for children, is considered important in the preschool curricula of many leading countries worldwide. Finland is among these countries. The curriculum in Finnish preschool education consists of games that develop creativity rather than subjects such as mathematics and literature. Thus, children are given a desire for lifelong learning before school (Ülkütekin, 2016). Finnish preschool education institutions aim to give children impulses according to age, strengthen their bodies, train their emotions, and introduce them to nature and society (Gürkan, 2019). From this point of view, it can be said that Finland considers music education important in preschool education. The aim of preschool education in France is to develop children's communicative, physical, and artistic skills and learning abilities; to ensure their socialization and preparation for future school life (Sözer, 1997). Therefore, it can be said that the concepts of artistic skills and learning abilities in preschool education in France are related to music education. Japan, which has a high participation rate of 98%, the number of attendees to the preschool program, has determined the basic areas of the preschool program as health, social life, nature, language, music, and art (MEXT, 2004; cited in Ekinci, 2010). Among the aims of preschool education in Turkey is "to enable children to develop body, mind, and emotion and to acquire good habits (Ministry of National Education, 2013). In general, although Finland, France, Japan, and Turkey cover different concepts in preschool programs, the subjects covered also include music education.

Higher Education Institution (n,d) preschool education curriculum includes one field education course (Early Childhood Music Education Field Education IV. Semester), one general culture elective course (Turkish Music), two field education elective courses (Early Childhood Rhythm, Dance and Orff Education) includes a limited number of courses as (Education of Hospitalized Children).

Related Literature

As the studies in the literature, there are many studies on the benefits of early music education in children. Early participation in active music-making has been shown to benefit children's broader development (Barrett, Flynn, & Welch, 2018). It has been revealed that music education must be a must, even without preschool literacy learning, and since it is part of its physicality, it has become a fundamental work in the development of pedagogical activities with children in Early Childhood Education (Habowski, Conte, 2019). Music education contributes significantly to the intelligence and personality development of children. Music, which contributes not only to musical skills but also to the child's cognitive, psychomotor, and socio-emotional development, is an essential tool, especially in the preschool period (Vasiu, 2021). Music education

has a significant potential to improve the quality of life of children (Gracia, 2020). Considering that there are studies regarding the use of music even in language teaching to foreign students (Üstün, 2023), it is natural that music has benefits for language development in the early period. It has been emphasized that music education improves children's phonological awareness and early literacy skills (Eccles and others, 2021). For this reason, as stated in studies (Rodriguez, 2019; Salvador & Culp, 2021), it is beneficial for children to receive music education at an early age. It is argued that early music education facilitates creative expression and can shed light on current discoveries regarding teacher-child interactions with music in the areas of increasing teacher confidence (Koops & Tate, 2021). Research results reveal that music education is effective in mathematics education (Raja & Bhalla, 2021).

When we look at the research of preschool teachers on music activities, researchers generally focus on competencies, their thoughts on music culture, and teachers' views on music activities. Nasiopoulou, Williams & Lantz-Andersson (2022) investigated preschool teachers' thoughts on their work with curriculum content areas. Sheridan, Williams, Sandberg & Vuorinen (2011). In the research conducted by Kondracka-Szala & Michalak (2019), the use of popular music in preschool education in Poland was examined, emphasizing that it was educationally valuable. The research conducted by Ehrlin & Gustavsson (2015) revealed that most preschool teachers do not feel confident about their musical activities. Gillespie & Glider (2010) investigated how and when teachers use music in their preschool classrooms throughout the day. In the research, a 24-hour observation was made, and it was determined that music was used for an average of 6.5 hours. Moreover, in the study of Kaya & Özkut (2019), preschool teachers' musical culture accumulations and their views on music culture were investigated. At the end of the research, it is emphasized that the quality of music education should be increased in teacher training institutions. The study by Ehrlin & Wallerstedt (2014) investigated how preschool teachers perceive their musical work and their own musical competence. Preschool teachers participating in the research stated that they frequently use music activities. In the research, he emphasized that music as a tool contributes to the development of children.

In Holmberg & Zimmerman Nilsson's (2017) study, preschool teachers' thoughts on music content and activities were investigated. In the study, it was emphasized that music education research is important for the daily work of preschool teachers because it can improve their teaching and learning qualities and contribute to general knowledge in society.

In the study of Sökezoğlu Atılğan & Türkkay Özer (2021), the views of preschool teachers on the implementation of music activities in the classroom, the competencies of preschool teachers about music lessons, and the contribution of these activities to preschool education were investigated. As a result of the research, it has been revealed that preschool teachers find themselves competent in the field of music, but they encounter various problems while applying music activities. Rajan (2017)'s research examined how preschool teachers use music, and the types of music activities offered to children in their classrooms. Preschool teachers in the study said they use music to attract children's attention and make academic connections. However, the research revealed that although teachers attach importance to music teaching practices, they have difficulties due to limited resources and inadequacies.

In Lee (2009)'s study, current music practices and teachers' music teaching needs were investigated in public kindergartens in South Korea. According to the research, most teachers claimed that they should have more applicable and comprehensive pre-service and in-service music education programs. According to Sonakın (2022)'s research, it has revealed that preschool teachers have high self-efficacy for music teaching and consider themselves sufficient in terms of instrument-performance management self-efficacy. In the research conducted by Aysu, Aral, Gürsoy & Yıldız Bıçakçı (2018), the views of preschool teachers about music activities were examined. As a result of the research, it was determined that most of the teachers did not participate in in-service training, training, course, or workshop on music activities; they planned the music

activity themselves, had difficulty in finding songs while planning, and had difficulties in classroom management during the implementation phase.

In the research, the thoughts and self-efficacy of preschool teachers about music activities come to the fore. While some consider themselves competent in music education (Şahin, 2012), some consider themselves inadequate (Gölbaşı, 2013; Aktaş, 2013; Çeviker, 2010; Alpaslan, 2010).

Purpose of the research

Almost all of the studies in the literature have revealed that music education and music activities are important in early childhood, but teachers need to consider themselves sufficient in this regard. This research aims to investigate preschool teachers' thoughts and attitudes about music activities during the preschool period of children. In this context, research

- Preschool teachers' thoughts on music activities and music education
- The quality of the music education received by preschool teachers,
- Preschool teachers' self-efficacy perceptions about music activities,
- Preschool teachers' use of music activities
- Concepts such as the problems experienced by preschool teachers were examined.

Methodology

Model of the Study

Seeking out the opinions of experts can provide valuable insights, help to ensure the validity of research and analysis, generate new ideas, and build professional networks. This study, which evaluates the thoughts of preschool teachers about music activities and their music education competencies according to their self-efficacy, is a qualitative research conducted with a phenomenology design. *Phenomenology* is a research method that uses the experiences of individuals to obtain information about a phenomenon (Johnson, 2000). Phenomenology focuses on phenomena that we do not have a detailed understanding of (Yıldırım & Şimşek, 2018).

Study Group

The study group of the research consists of 19 educators working as preschool teachers in public and private institutions in the 2021-2022 academic year. The study group selected by the convenience sampling method, which is one of the purposeful sampling methods, was considered to be fast, practical, and economical (Yıldırım & Şimşek, 2018). The demographic characteristics of preschool teachers participating in the study are shown in Table 1.

Table 1. The Study Group Informations

Code	City	Experience	Institution
T1	Ankara	14	Public institution
T2	Ankara	10	Public institution
T3	Ankara	2	Public institution
T4	Ankara	15	Public institution
T5	Ankara	18	Public institution
T6	Ankara	14	Public institution
T7	Ankara	6	Public institution
T8	Ankara	4	Public institution
T9	Ankara	5	Public institution

T10	Ankara	9	Public institution
T11	Malatya	17	Public institution
T12	Sakarya/Hendek -Antalya/Alanya	4	Public institution
T13	İstanbul	3	Private institution
T14	Bartın	1	Public institution
T15	Batman	14	Public institution
T16	Ankara	15	Public institution
T17	Antalya/Alanya	10	Private institution
T18	Antalya/Alanya	16	Private institution
T19	Antalya/Alanya	16	Private institution

Table 1 shows the demographic information of the preschool teachers who participated in the research. Information about the place where the teachers participating in the research teach, the duration of their experience, and the institution they work in can be seen.

Data Collection Tools, Collection of Data, Validity and Reliability

The data were obtained with a semi-structured interview form prepared by the researchers. The structural validity of the data collection tool was provided under the supervision of three researchers who are experts in their fields and line with their corrections. The data collection tool, which also passed the language expert control, was tested with a pilot interview, finalized in line with the participants' opinions, and applied to 19 preschool teachers. The application was made online via Zoom. As a result of the application, which lasted approximately 25 minutes, the answers to the questions were reported to the participants in writing, and the participant's confirmation was received. The data collected in the study were coded separately by two researchers, and the reliability formula suggested by Miles and Huberman (1994) was used to calculate the reliability. As a result of the calculation, the reliability of the research was calculated as 90%. (Miles & Huberman, 1994)

Analysis of the Data

Content analysis was used in the analysis of the data. The data obtained in the content analysis are interpreted by creating themes (Yıldırım & Şimşek, 2018). In the study, the data coded separately by two researchers were analyzed by creating themes. After defining the concepts determined according to the purpose of the study in the content analysis, a pre-analysis structure is created (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz, & Demirel, 2020). In this context, a structure was created to analyze the data coded separately according to the purpose of the research, and the themes were analyzed. In the study, the names of the preschool teachers were not shared following the ethical rules, and the teachers were given codes such as T-1, T-2.....T19

Ethics Committee Approval: Results

Data were collected electronically. Participants were informed that they would voluntarily participate in this study and could leave whenever they wanted. For this study, ethical approval was obtained from the decision of the Ethics Committee of Alanya Alaaddin Keykubat University, numbered 2022/15, Ethical evaluation document publication number: E-70561447-050.01.04-102472. In this study, all the rules stated to be followed within the scope of the "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. However, none of the actions specified in the second part of the directive, under the title of "Proceedings Contrary to Scientific Research and Publication Ethics," were carried out.

Results

Preschool teachers were asked their thoughts about the benefits of music activities, and a table was created based on their attitudes about the subject. The 13 themes the researchers obtained from the data are analyzed below.

Table 2. Benefits of preschool music activities

Benefits music activities	Participants	f	%
Language development	T1 T3 T9 T10 T14 T15 T16 T17	8	42,1
Sense of rhythm	T2 T4 T6 T9 T11 T15 T17	7	36,8
Psychomotor development	T3 T9 T11 T14 T16	5	26,3
Cognitive development	T1 T4 T9 T16	4	21,0
Social skills development	T6 T9 T14 T16	4	21,0
Holistically development	T2 T7 T13 T16	4	21,0
Imagination and creativity development	T9 T10 T12	3	15,7
Focusing	T3 T14 T18	3	15,7
Emotional development	T9 T19	2	10,5
Increasing children's joy and happiness	T8 T16	2	10,5
Enhances learning	T5	1	5,26
Academic success	T17	1	5,52
Perception	T18	1	5,52
	Total	19	100

Table 2 shows the opinions of the preschool teachers participating in the research on the benefits of music activities. In this table, more than one theme was created with the data obtained from the teachers. Therefore, while some teachers are seen under different themes, others are seen under a single theme. According to the data obtained, 8 out of 19 participants claimed preschool music activities "contributes to the language development" of children. The number of teachers who think music activities develops the sense of the rhythm of preschool children is 7. It has been observed that the number of teachers who think that psychomotor development is positively affected by music activities is 5. It is seen that there are four teachers each who think that the cognitive, social, and holistic development of children is positively affected by music activities. It is stated that music activities is effective in subjects such as children's imagination, creativity, and focus. It has positive contributions by three teachers and by two teachers in matters such as increasing joy and happiness. Thought by two teachers that preschool music activities improve children's emotional development and learning. One teacher advocates that music activities improves academic achievement and perception in children.

According to the data from preschool teachers, concepts such as language development, rhythm development, and psycho-motor development are the most affected subjects from music activities. Teachers think these subjects are important concepts for the development of children in preschool, and therefore music activities should be benefited from them. In addition, the participants state that music activities should not be limited to these subjects and that all music activities tools that will positively affect children developmentally should be used effectively.

As can be seen, music activities have been described as a positive tool for the development of preschool children by all participants. Despite this, the data were collected by asking the participants in the study whether there is any harm in music activities. Below are the evaluations made on this subject.

Table 3. Findings on the harms of preschool music activities

Harms	Explanation	participants	f	%
Harmfull	none	none	0	0
Harmless (Precondition)	Must be compatible with ability and development level	T1	1	5,52
	Age-appropriate education should be given to the student.	T8	1	5,52
	Children who do not want should not be forcibly given	T10	1	5,52
	Choosing the right music education process	T13 T3	2	10,5
(Unconditional)	Absolutely no harm	T2 T4 T5 T6 T7 T9 T11 T12 T14 T15 T16 T17 T18 T19	14	73,68
Total			19	100

Table 3 shows the negative effects of music education and activities on preschool students. None of the preschool teachers participating in the research think that music education and its effectiveness are directly harmful. On the other hand, teachers were asked to evaluate whether music education and its effectiveness could cause some harm under any circumstances. According to the data obtained, 14 of the participants stated that there is no harm in music education and effectiveness. In contrast, five teachers stated that music education and activity "does not match their talent and development level," "if education is not given according to their age," "if it is forced," and "if the right music education process is not carried out." stated that a harmful situation may occur.

The participants did not have specific thoughts about what could be the harms of music education and its effectiveness. However, when the teachers were asked about this issue again, it was revealed once again how good music education and activity are for preschool children, that the targeted gains will not be gained adequately and that there are no major damages other than the possibility of interruption in the future musical life of children. In addition, the teachers state that the harms of music education and its effectiveness may be too few to compare with the benefits to be gained.

At this stage, teachers were asked questions about the scope of music education and music activities. The following evaluations emerged by creating two separate tables for what should and should not be in music education and activities. The themes created from the participants' data were not shown as percentages and frequencies under the headings of what should and should not be in preschool music education and music activities since a participant made more than one data entry.

Table 4. Things should be in music education and music activities in preschool education.

Things should be in preschool education	Participants	f	%
Education according to individual differences	T1 T10 T13 T17	4	21,05
Rhythm exercises, rhythm instruments	T7 T17 T18 T19	4	21,05
Education with music and games	T4 T8 T12	3	15,79
Music class	T11 T16	2	10,53
Education for each child with her/his own material	T8 T16	2	10,52
Training with a branch teacher	T2	1	5,26
Music education for preschool teachers	T5	1	5,26
Lyrics should be chosen pedagogically	T6	1	5,26
Creativity development with singing, voice discrimination, musical story, movement and dance	T7	1	5,26
Academic education	T9	1	5,26

Music education suitable for social, emotional, psychomotor, language and cognitive development	T14	1	5,26
Orff education	T15	1	5,26
Getting acquainted with the instrument, developing musical ear, learning songs	T3	1	5,26
	Total	1	
		9	100

Table 4 shows preschool music activities and what should be in education according to the opinions of preschool teachers. According to the data obtained, "education according to individual differences" and "rhythm exercises" (rhythm instruments) were expressed by 4 participants as what should be in preschool music activities education. While three preschool teachers argued that the concept of "education with music and games" should be necessary, "music class" and "education for each child with its material" were expressed by 2 participants as absolute must-haves in music activities and education. "The subject of education with a branch teacher", "music education for preschool teachers", "pedagogical suitability of lyrics", "creative development", "academic education subject", "music education suitable for social, emotional, psychomotor, language and cognitive development", Subjects such as "Orff education", "meeting with the instrument, developing the musical ear, learning songs" are concepts that must be included in music activities and education by a preschool teacher.

Preschool teachers participating in the research noted that individual differences should be considered in preschool music activities and education. The participants argue that every child has different perception levels, so the music education program should be structured according to the student. The importance of rhythm studies draws attention similarly to individual differences. Another finding is that music and game education should be together. Emphasizing the education of preschool children with play, the participants argue that the concept of play should be included in music activities and education so that the benefit to be provided can be higher.

In this part of the research, the participants were asked about music activities and what should not be in education.

Table 5. Things that should not be in music activities and education

Things that should not	Participants	f	%
There should be no pressure	T1 T4 T7 T8 T11 T16 T17	7	36,84
Children should be educated according to their age.	T14 T9 T10 T5 T6 T13 T18	7	36,84
Practical training should be given, not theoretical training.	T12 T19	2	10,53
There should be no shortage of equipment	T2	1	5,263
It should not be teaching notes.	T3	1	5,26
Shouldn't be the only one listening	T15	1	5,26
	Total	19	100

In Table 5, the thoughts of preschool teachers, musical activities and the concepts that should not be in education are shown. According to the data obtained, 7 participants stated that "there should be no coercion" in music activities and education. The other 7 participants argue that "education according to the age of the children" should be given. In addition, two participants draw attention to the need to "give practice instead of theory training".

Six participants suggest that "music education should be given according to the age of the children". The remaining 4 participants, on the other hand, express the concepts such as "there should be no lack of

equipment", "no musical notes should be taught", "practice should be given instead of theory education", "more than listening in education" as things that should not be included in music activities and education. The remaining 3 participants, one each, consider concepts such as "there should not be a lack of equipment", "no music teaching", and "only listening" are among the things that should not be in preschool music activities and education.

Considering that preschool prepares children for academic life, music education also has some responsibilities. However, many of the participants suggested that there should be no coercion. Teachers emphasize that forced education will not benefit children. Another important issue is the issue of education according to the age of the children. This concept, in which both song lyrics and readiness levels stand out, is among the most important prerequisites for the success of music education.

Preschool teachers clearly expressed what should and should not be in music education with their own experiences. Music education must be present in preschool with certain conditions. After that, the job falls to the preschool teacher. At this stage, the data were obtained by asking the teachers, who are one of the important building blocks of the inclusion of music education in the general curriculum in preschool institutions and its successful execution, about their music education, the adequacy of the music education program they received, and the teacher's self-efficacy. These findings are shown in order below.

Table 6. Scope of music education received by preschool teachers

Education received	Participants	f	%
Pre-school teacher Music education	T1, T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19	19	100
Rhythm training	T18, T19	2	10,526
Flute training, percussion training	T11	1	5,2632
Children and music lesson	T12	1	5,26
Instrument training and repertoire, piano	T15	1	5,26
Orff education	T17	1	5,26
Body percussion	T18	1	5,26
	Total	19	100

Table 6 shows the scope of the music education received by the teachers participating in the research. According to the data obtained, all the teachers received their music education at least within the scope of the preschool teaching undergraduate program. In addition to this training, T18 and T19 received rhythm training. In addition, the preschool teacher who participated in the research with the code T11 received flute and percussion training. In addition, the participant numbered T12 received training in children and music, the participant numbered T15 received training on an instrument, repertoire and piano, T17 Orff training, and T18 body percussion training.

As can be seen, only seven teachers receive music education on top of the education received at the university. The remaining 12 preschool teachers only took music lessons while they were undergraduates. Self-efficacy evaluations of the participants about the training they received are shown below.

Table 7. Competence of pre-school music education program

Competence	Participants	f	%
Insufficient	T1 T2 T3 T4 T5 T9 T10 T11 T13 T14 T18 T19	12	57,89
Medium proficiency	T7 T8 T16 T17	4	21,05
Sufficient	T6 T12 T15	3	21,05
	total	19	100

In Table 7, the opinions of preschool teachers regarding the adequacy of the music education program they received were asked. According to the data obtained, T12 of the T19 teachers argue that the preschool music education they receive is insufficient. Participants numbered T11, and T18, T19 among these 12 teachers are teachers who receive music education in addition to the music education they received in preschool teaching. Five teachers are the participants who argue that music education in preschool teaching is at a medium level. Despite this, participants numbered T17 are the ones who received additional music training to improve their competence. T6, who argued that the music education received in preschool music teaching was sufficient, did not receive any further music education, while T12 and T15 received additional music education to improve their competencies.

According to the findings, the majority of the participants think that preschool music education is insufficient.

After the subject of the adequacy of the music education program, the teachers were asked about their self-efficacy in music education.

Table 8. Music education self-efficacy of preschool teachers

Self-efficacy	Participants	f	%
Sufficient	T12 T15	2	10,53
Medium	T4 T6 T7	3	15,79
it could be better	T1 T2 T5 T8 T17 T18	6	31,58
Insufficient	T3 T9 T10 T11 T13 T14 T16 T19	8	42,11
	total	19	100

Table 8 shows preschool teachers' self-efficacy thoughts about music education. According to the data obtained, participant number 6, who found the music education program he received in preschool teaching sufficient in table 7, stated that his self-efficacy was moderate in table 7. Participants numbered 12 and 15, who thought that their previous musical education was adequate, also evaluated themselves as sufficient in music education. Participant number 7, who believed that the music education program he received as a preschool teacher was medium level and participant number 4, who thought it was insufficient, expressed his self-efficacy as moderate in table 7. Participants numbered 8 and 17, who evaluated the music education they received in preschool teaching as a medium, and participants numbered 1, 2, 5, and 18, who considered the education they received insufficient, stated that they were not inadequate in music education, but they wanted to be better. Participant number 16 claimed that although he described the music education he received as a preschool teacher as a medium level, his own efficacy was at a low level. The remaining participants, numbered 3,9,10,11,13,14, and 19, are teachers who think that the education they receive is insufficient and, therefore, they are also inadequate in music education.

Preschool teachers do not see the music education they receive and themselves as entirely sufficient in music education. The activities of the participants who want to improve themselves in music education are shown below.

Table 9. Preschool teachers' use of music activities

Frequency of use	Participants	f	%
At every event	T1 T7 T8 T10 T12 T14 T17 T18	8	42,11
One lesson a day	T4 T5 T6 T11 T15 T16 T19	7	36,84
Two to three per week	T2 T3 T9	3	15,79
None	T13	1	5,263
	total	19	100

Table 9 shows the use of music activities by preschool teachers. According to the data, eight teachers use music education "in every activity". The number of teachers using "one lesson a day" music education is also 7. While the number of teachers who use the music activity "two or three times a week" is 3, only T13 participant does not use music education "never". The participant in question is the teacher who sees the program he receives as inadequate and evaluates his efficacy as low. In the interview, it was assessed that although this teacher wanted to use activities, she did not benefit from music education because she saw her efficacy as low. This teacher stated that assuming that the music education he received was sufficient, he felt himself at an adequate level. He would use music education.

As can be seen, all participants, except one teacher, actively use music education in preschool education.

Table 10. Types of research conducted by preschool teachers on music education

Types of research	Participants	f	%
Rhythm studies	T1 T18	2	10,53
Instrument training	T7 T13	2	10,52
Keep up with current research	T4 T5 T6 T8 T11 T14 T16 15	8	42,11
Nothing	T2 T3 T9 T10 T12 T17 T19	7	36,84
	total	19	100

Table 10 shows the studies of the participants for music education. According to the data obtained, 2 participants do rhythm work, and two do instrument training. Eight participants state that they continue their music education by following up-to-date research. The remaining seven teachers say that they have not done any work. The interview revealed that they did not do it because they did not know how to work on this issue.

According to the findings, only seven teachers do not research music education. Since education is like a constantly evolving organism, research helps create a quality teaching environment for teachers who use music activities. For this reason, research is essential.

Table 11. Music education projects involving teachers

Project	Participants	f	%
e-twinning	T1 T18	2	10,5
ukulele project	T15	1	5,26
none	T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T16	16	84,2
	total	19	100

Table 11 shows the status of the participants' music education projects. It was revealed that only three teachers participating in the research were involved in the project, and the remaining 16 teachers were not involved in any music education project. It is seen that two teachers involved in music education projects are engaged in e-twinning, and one teacher is in ukulele projects.

As can be seen, all but one participant uses music education, and a tiny part of them participate in projects. As evaluated in the competency issues researched in the previous chapters, teachers want to improve themselves more. In this part, teachers were asked to assess fundamental problems experienced by all participants by asking about the difficulties they compare while applying music education. The data obtained are shown below by creating themes without grouping.

Table 12. Difficulties faced by preschool teachers while performing music activities

Unsuitable physical conditions
Lack of material
Not enough education
Children's attention is quickly distracted.
Lack of musical and rhythm instruments
Lack of education
Problems caused by my lack of education
Students' distraction
Adapting existing music to themes that appeal to the child's soul,
I don't know some songs
Lack of physical conditions
Melody pinning
Lack of material
None. Because; since there is a music class in our school, there is sufficient equipment.
None.

Table 12 shows the problems experienced by the participants while performing activities with music education. According to the data obtained, 4 out of 19 preschool teachers stated that they did not have any problems while performing music activities. Participant 13, one of these teachers, stated that he answered the question in this way because he did not do music activities. Another teacher is the preschool teacher, who said that he had enough equipment because there was a music class in the school, and he did not have any problems in music education. The remaining two teachers did not give detailed answers to this question.

In the study, 15 preschool teachers stated that they had problems while performing music activities. Among the problems experienced are "lack of physical conditions", "lack of materials", "lack of education", "distraction of children", "lack of musical instruments", "problems of adapting music education for children", "teacher not knowing songs", "melody picking" are such problems.

Conclusion and Discussion

In the study, preschool teachers' thoughts on music activities and music education, the quality of the education they received, their self-efficacy perceptions about music activities, their use of music activities and the problems they experienced were examined. Getting the opinions of experts on a subject can make important contributions to the target subject. For this reason, 19 teachers from various cities who have been working as pre-school teachers for many years were asked about their thoughts on music activities, and analyzes were made about the attitudes of teachers in this area.

According to the results obtained in the research, preschool teachers think that music activities are beneficial for children. Considering that Derri, Tsapakidou, Zachopoulou, and Kioumourtzoglou (2006) in previous studies obtained similar results, the importance of this subject in this study was repeated.

According to the results obtained from the data obtained from the preschool teachers participating in the research,

children's language development, sense of rhythm, psychomotor development, cognitive development, social skill development, holistic development, imagination and creativity development, focus, emotional development, increasing joy and happiness children, improving learning, academic success, perception results have emerged that can be achieved with These results are defended in the study of Bayanova, Chichinina, Veraksa, Almazov, and Dolgikh (2022). In addition, preschool teachers argue that music activities do not directly harm children.

According to the opinions of the preschool teachers who participated in the research, musical activities and music education qualitatively according to individual differences, education with rhythm instruments, education through games and music, music class, education for each child with their material, education with branch teachers, music education for preschool teachers. , lyrics should be chosen pedagogically, it should be suitable for singing, voice discrimination, musical story, movement and dance and creativity development, academic education, social, emotional, psycho-motor, language and cognitive development, Orff education should be, with instrument Concepts such as acquaintance, developing the musical ear, and music education with singing have emerged.

In the literature review, there is not enough data on how preschool music activities and music education should be done. For this reason, other studies should investigate the study's results further. In addition, according to the findings obtained in the research, it was concluded that there should be no coercion in music activities and music education and that children's readiness should be considered. Finally, participants think that music activities and music education do not directly harm children.

Music education is given on a limited basis during preschool teacher education. All preschool teachers participating in the research received this training during the formal education period. In addition, some participants state that they continue their development by taking additional music education. More than half of the preschool teachers participating in the research see the education they receive as insufficient. In addition, most participants consider themselves inadequate in music activities. These results are compatible with some studies in the literature (Gölbaşı, 2013; Aktaş, 2013; Çeviker, 2010; Alpaslan, 2010). A group of researchers stated that the education they received in preschool teaching was at an intermediate level. Few of the participants state that this training is sufficient. These results are compatible with the few studies in the literature (Şahin, 2012).

While only one of the preschool teachers participating in the research did not use music activities, the majority of the teachers stated that they used these activities intensely. These results are consistent with the results of Gillespie & Glider (2010) and Ehrlin & Wallerstedt (2014). Barrett, Schachter, Gilbert, and Fuerst (2022) suggest that preschool teachers use music as a part of the day. The musical activities of the preschool teachers participating in the research are consistent with these results.

While some participants did not do research for music activities, some of them stated that they did various activities and researches. However, the number of teachers involved in music research projects is tiny. As Aysu, Aral, Gürsoy & Yıldız Bıçakçı (2018) emphasized that preschool teachers did not participate sufficiently in the research, it is compatible with the results of this part of the research.

The problems that preschool teachers encounter while performing music activities are physical, unsuitable conditions, lack of materials, insufficient education, children's attention quickly distracted, the inadequacy of music and rhythm instruments, the distraction of students, inability to find music suitable for children, lack of song repertoire, melody problem emerged as such problems. Almost all of these problems stem from the insufficient level of education that preschool teachers receive in music education. For this

reason, music education should be supported with in-service courses, starting with the teachers on duty. Music education subjects should be increased in the curricula of students studying preschool teaching, and thus the emergence of these problems should be tried to be prevented. As Lee (2009) stated, preschool teachers should receive more training for musical activities. Preschool teachers should be encouraged to learn an instrument to play in music events.

A "preschool music teacher" branch should be established among preschool teachers. Thus, the gains that music education will provide for children can be achieved at the maximum level. On the other hand, the music education status of preschool teachers should be increased, and teachers should be encouraged to participate in research and training. In addition, preschool music education materials should be reproduced.

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Issues and Views on Bachelor's Theses: A Mixed-Method Study on Final-Year Geography Students

Research Article

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ARTICLE INFO	ABSTRACT
<p><i>Article History:</i></p> <p>Received: 16.11.2022</p> <p>Available online: 19.07.2023</p>	<p>This study aimed to determine what final-year geography students thought about bachelor's theses and what problems they experienced during the writing process. The sample consisted of 55 final-year students (37 women: 18 men) from the geography department of Tokat Gaziosmanpaşa University in the 2019-2020 academic year. The study adopted a mixed research design. Data were collected using a questionnaire and an interview form. The quantitative data were analysed using number and percentage distributions, while the qualitative data were analysed using descriptive analysis. For participants, the greatest challenges of preparing a bachelor's thesis were collecting data (f=29), writing (f=24), choosing a topic (f=17), and deciding on the right method (f=17). They also stated that they did not receive enough support from their thesis advisors. Universities should offer more applied courses on conducting scientific research and writing bachelor's theses. There should be more collaboration and interaction between students and thesis advisors.</p>
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	<p>Keywords: Bachelor's thesis, geography, final-year students</p>

Introduction

Although it varies across faculties and departments, final-year students generally have to write theses to graduate. It is also referred to as a "graduation project" or a "graduation assignment" in Turkey. Although a thesis is carried out with various applications in different faculties and departments, what is actually expected of the student is to plan a research project, collect data, and report it. The student can accomplish the process only if he/she knows about scientific research steps and receives support from his/her thesis advisor. However, the most significant contributor is a curriculum with a theoretical framework.

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Bachelor's theses focus on research skills. In other words, they are process-focused because students generally lack research experience (Stappenbelt & Basu, 2019). Every student needs to know how to write a thesis and choose a research topic. They need to specify problems statements and subproblems, followed by purpose, significance, limitation, assumptions, definitions, literature review, conceptual framework, and method (research model, sample or study group, data collection tools, data collection, and data analysis). Afterward, the process is completed by compiling and reporting information that includes other scientific research steps, such as findings, discussion, conclusion, and recommendations. The thesis writing process is a greater challenge for students who know little about scientific research steps and receive an education based on curricula that do not offer courses with a theoretical framework. In fact, some students cannot graduate on time and have to re-register for the following semester just because they cannot write theses. Therefore, as stated in the study by Babacan (2022) final year students do not perceive the bachelor's theses as a prerequisite for graduation

The Council of Higher Education (CoHE), as the supreme board/administration responsible for universities in Turkey, has implemented various arrangements in this context through the Bologna process and the European Credit Transfer System (ECTS) (CoHE, 2022). All faculties or departments in Turkey have their own requirements for the bachelor's thesis process. However, they are primarily responsible for offering students the right curricula with the right courses to ensure that they follow the universal scientific rules and write theses in line with the scientific research steps. In this way, students go through a systematic education to plan and finalize their research projects. With a special focus on the Bologna process, CoHE seeks to enhance the balance between diversity and unity, comparability, comprehensibility, and quality in higher education. Its objectives include fostering inter-university mobility, encouraging active participation, and lifelong learning (CoHE, 2022).

Bachelor's theses are a must for the faculties of arts and sciences in Turkey-because their one of primary goals is to produce academic research. Therefore, the students of the faculties of arts and sciences are expected to plan and conduct research projects. However, some faculties do not require their students to write theses to graduate, or some students from some faculties can graduate if they write theses that do not necessarily adhere to scientific research steps. This means that some students graduate before they develop the necessary academic skills. This is in stark contrast to the graduation criteria or curricular outcomes of the faculties of arts and sciences. Therefore, all students of the faculties of arts and sciences should follow universal scientific rules and write high-quality bachelor's theses before they graduate.

The Challenges of the Bachelor's Thesis Writing Process and the Literature Review

All final-year students face various challenges, one of which is writing a thesis. Choosing a research topic is particularly hard for them. Murray (2016) recommends that those who feel incompetent about writing should try and overcome that feeling.

The problems of the participants regarding the bachelor's thesis can be summarized as follows. Students do not know how to choose a research topic and work on it. Even if they manage to choose a research topic, they still have a hard time specifying a problem and subproblems, determining the aim, pointing out limitations, laying down an assumption, and conducting a literature review. Another challenge is choosing the right research method. Students also have difficulty constructing document analysis, survey, interview, observation, or experimental studies, developing data collection tools, and collecting and analysing data. This challenging process ends with stating findings and constructing the conclusion, discussion, and recommendation sections. In fact, every student who needs to write a bachelor's thesis should know how to construct a thesis step by step and write and report it. At this stage, students need guidance to learn what to write and how to write it. However, this is not possible unless faculties and departments undertake that task. Such guides should explain rules on how to write a bachelor's thesis, specify formal arrangements, brief about

technicalities, contain some sample pages, underline the significance of research integrity, and most importantly, walk students through scientific research steps. On the other hand, it is vital for students to have thesis advisors who communicate effectively. However, students generally have problems with their thesis advisors because they do not spend enough time with them, do not give them feedback, and do not guide them. Perhaps, students need their thesis advisors' guidance most when working on their theses. However, those who do not receive sufficient support from their thesis advisors find themselves in a desperate situation where they have no idea what to do. However, students are not the only ones with problems. Departments and thesis advisors also experience some challenges. For example, recently-established departments have more problems because they have limited archives and loosely-defined systems.

On the other hand, these and similar results have also been reported by various studies conducted outside the field of geography (Yavuz & Kaymakçı, 1996; Ulusoy et al., 2009; Erbay Çetinkaya & Yılmaz, 2017). There is also uncertainty surrounding the assessment process for students preparing a bachelor's thesis. Pérez-Ros et al. (2021) investigated the influence of faculty training courses on the supervision and evaluation of bachelor's theses. Their study revealed that faculty training courses had a positive impact on the thesis evaluation process. As a result of the training, academics assessed students' theses more objectively, fairly, and with higher quality.

Researchers in Turkey who look into students' views generally focus on master's theses (Sezgin et al., 2012; Akbulut et al., 2013; İnaç & Doğan, 2017; Kan & Gedik, 2016). Only a handful of studies address bachelor's theses. Those studies show that students face various problems during the thesis writing process. For example, they cannot communicate effectively with their thesis advisors and cannot receive adequate feedback from them. They also have difficulty overcoming language problems, choosing a research topic, and selecting the right methodology for research (Yavuz & Kaymakçı, 1996; Ulusoy et al., 2009; Erbay Çetinkaya & Yılmaz, 2017).

Fernández-Cano et al. (2021) conducted a study at a public university in Spain and found that most students who did not complete their bachelor's thesis were satisfied with the knowledge and skills they had acquired. However, Han (2014) reported that undergraduate students experienced many problems in terms of both content and type while writing their theses. Tapia Carlin (2013) determined that preservice teachers needed their thesis advisors' guidance to choose a research topic, design their research projects, and collect and analyse data. Puspita (2019) observed that students felt inadequate about choosing a research topic and conducting literature reviews. Henttonen et al. (2021) argued that although thesis advisors knew how hard it was to write a bachelor's thesis, they knew little about students' expectations. As the literature summarized above clearly shows, students experience numerous problems while writing a bachelor's thesis.

However, writing bachelor's theses has an important role that cannot be replaced by other teaching methods (Han, 2014). While theses are widely recognized as significant components of master's and doctoral education, they hold great importance for undergraduate students as well. In fact, a bachelor's thesis represents one of the initial original works produced by a student. However, research on bachelor's theses remains limited both globally and in Turkey. Notably, no Turkish researcher has yet conducted a study with geography students specifically concerning bachelor's theses. This study seeks to bridge this gap and address this research void. In this context, this study aimed to determine final-year geography students' views of the challenges of the thesis writing process. This study will contribute to the literature and make related recommendations.

Methodology

Research Design

This study adopted a mixed methodology to support a questionnaire to identify students' problems towards bachelor's theses. As stated by Plano Clark & Ivankova (2018), a mixed research design is a combination of qualitative and quantitative methods to collect and analyze data. Researchers who employ mixed designs perform surveys to generalize quantitative data and then conduct open-ended qualitative interviews to explain the quantitative data (Creswell & Creswell, 2021).

Sample/Study Group

Information is collected to make generalisations about a topic (Field & Hole, 2019). The sample/study group consisted of 55 final-year geography students from the faculty of arts and sciences of Tokat Gaziosmanpaşa University in Turkey. Participation was voluntary. All participants had taken the "Research Methods and Techniques in Geography" course in the second year and the "Thesis I" and "Thesis II" courses in the fourth year. All participants were working on their theses.

Data Collection Tools

DeVellis (2021) noted that social science researchers should develop their own data collection tools because the current data collection tools may not always be useful or appropriate. In the present study, a questionnaire and an interview form were developed to collect quantitative and qualitative data, respectively.

Questionnaire: According to Shaughnessy et al. (2021), questionnaires contain the same statements and questions and allow researchers to summarize participants' thoughts. In the present study, the researcher first developed a questionnaire, which consisted of three sections: Section 1 consisted of four questions on gender, career plans after graduation, choosing the geography major willingly, and being happy studying geography. Section 2 consisted of nine items on bachelor's theses. The items were rated on a three-point Likert-type scale. Section 3 consisted of 19 items on the content of bachelor's theses. The items were rated on a three-point Likert-type scale.

First, a pool of items (40 items) was developed for Sections 2 and 3. Two educational sciences and geography experts and an undergraduate student checked the draft for intelligibility and relevance. Eight inappropriate and unintelligible items were removed from the draft based on their feedback. The questionnaire was finalized after it was checked for face validity.

Interview form: Maxwell (2018) recommends that researchers develop research questions based on their research topics. In the present study, the researcher developed a semi-structured interview form to elaborate on participants' views. As pointed out by Merriam (2018), qualitative studies provide rich and descriptive data. The interview form consisted of four questions. Two educational sciences and geography experts and an undergraduate student checked the form for intelligibility and relevance. The form was finalized based on their feedback.

Data Collection

Data were collected online in late April in the second semester of the 2019-2020 academic year during the COVID-19 pandemic. All students were briefed about the research purpose and procedure, and informed consent was obtained from those who agreed to participate in the study. Participants were then administered first the questionnaire and then the interview form. Each participant filled out the questionnaire in 5-10 minutes. Each interview lasted 15-20 minutes.

Analysis of Quantitative Data

The quantitative data were analysed using the Statistical Package for Social Sciences (SPSS). Number and percentage were used for descriptive data.

Analysis of Qualitative Data

The qualitative data were analysed using descriptive analysis. Each participant was coded and numbered. For example, "P1" referred to the first participant. Direct quotes were used to provide an accurate and coherent picture of participants' views. However, not all participants were quoted. Only original and effective statements were used. Moreover, similar statements were converted into frequency tables.

Ethics Committee Approval

The study was approved by the Social and Human Sciences Research Ethics Committee of Tokat Gaziosmanpaşa University (Date: 02.04.2020, Session No: 04, & Decision No: 10).

Results

A- Quantitative Results

This section addressed the quantitative findings. Table 1 shows all participants' descriptive characteristics. Table 2 shows their general opinions about bachelor's theses. Table 3 shows their views of the content of bachelor's theses.

Table 1. Descriptive Characteristics

Variables		f	%
Gender	Woman	37	67.3
	Man	18	32.7
	Total	55	100.0
Post-graduation career plan	Teaching at a public school	25	45.4
	An academic career at a college	9	16.4
	Public official	9	16.4
	Any job in the public or private sector	12	21.8
	Total	55	100.0
The conscious choice of the geography major	Yes	22	40.0
	Somewhat yes	21	38.2
	No	12	21.8
	Total	55	100.0
Being happy studying geography in college	Yes	27	49.1
	Somewhat yes	26	47.3
	No	2	3.6
	Total	55	100.0

Table 2. Participants' Views of Bachelor's Theses in General

Items	Yes f (%)	Undecided f (%)	No f (%)	Total f (%)
1- Do you think writing a bachelor's thesis should be a requirement for graduation?	21 (38.2)	15 (27.3)	19 (34.5)	55 (100.0)
2- Do you think students should start working on their theses before the fourth year?	28 (50.9)	19 (34.5)	8 (14.5)	55 (100.0)

3- Do you think the second-year "Research Methods and Techniques in Geography" course helped you with your thesis?	27 (49.1)	27 (49.1)	1 (1.8)	55 (100.0)
4- Do you think the final-year "Thesis I" and "Thesis II" courses helped you with your thesis?	23 (41.8)	19 (34.5)	13 (23.6)	55 (100.0)
5- Can you write and edit a bibliography?	30 (54.6)	17 (30.9)	8 (14.5)	55 (100.0)
6- Do you know how to do in-text citations?	24 (43.7)	22 (40.0)	9 (16.4)	55 (100.0)
7- Can you write an abstract?	22 (40.0)	31 (56.4)	2 (3.6)	55 (100.0)
8- Can you write and edit a table of contents, tables, figures, etc.?	17 (30.9)	31 (56.4)	7 (12.7)	55 (100.0)
9- Can you set and edit the page layout (font, spacing, indentation, titles, etc.)?	36 (65.4)	17 (30.9)	2 (3.6)	55 (100.0)

Table 3. Participants' Views of the Content of Bachelor's Theses

Items	Agree f (%)	Undecided f (%)	Disagree f (%)	Total f (%)
10- I do not know exactly how to write a thesis.	22 (40)	14 (25.5)	19 (34.5)	55 (100.0)
11- The greatest challenge for me is to choose a research topic.	19 (34.5)	7 (12.7)	29 (52.8)	55 (100.0)
12- I am unsure what to consider when choosing a research topic.	24 (43.7)	16 (29.1)	15 (27.3)	55 (100.0)
13- I know the steps of writing a thesis, but I have difficulty putting them into practice.	40 (72.7)	6 (10.9)	9 (16.4)	55 (100.0)
14- I had difficulty specifying research problems and subproblems.	21 (38.2)	7 (12.7)	27 (49.1)	55 (100.0)
15- It is hard for me to write the "Introduction" section and review the literature.	25 (45.5)	12 (21.8)	18 (32.7)	55 (100.0)
16- I have no difficulty writing the purpose and significance of my thesis.	35 (63.7)	8 (14.5)	12 (21.8)	55 (100.0)
17- The easiest part for me was to write the "Limitations" and "Assumptions" sections.	36 (65.4)	9 (16.4)	10 (18.2)	55 (100.0)
18- I do not know why related studies should be written	18 (32.7)	14 (25.5)	33 (41.8)	55 (100.0)
19- I do not know enough about the "method" section and its steps.	19 (34.5)	16 (29.1)	20 (36.4)	55 (100.0)
20- I know whether to adopt a quantitative, qualitative, or mixed research design.	25 (45.5)	20 (36.4)	10 (18.2)	55 (100.0)
21- I can develop data collection tools, such as surveys, interview forms, observation forms, etc.	40 (72.7)	11 (20.0)	4 (7.3)	55 (100.0)
22- I can use software packages (SPSS, MAXQDA, NVIVO, etc.) to analyse data.	7 (12.7)	11 (20.0)	37 (67.3)	55 (100.0)
23- I can sort out and present data in the "Results" section to answer subproblems.	31 (56.4)	14 (25.4)	10 (18.2)	55 (100.0)
24- I can discuss results.	42 (76.4)	8 (14.5)	5 (9.1)	55 (100.0)
25- I can write a "conclusion" section.	33 (60)	13 (23.6)	9 (16.4)	55 (100.0)
26- I can discuss results in reference to earlier studies.	25 (45.5)	22 (40.0)	8 (14.5)	55 (100.0)
27- I can make recommendations based on results.	33 (60)	15 (27.3)	7 (12.7)	55 (100.0)
28- I can present a thesis and convince the jury.	34 (61.9)	13 (23.6)	8 (14.5)	55 (100.0)

B- Qualitative Results

This section addressed the qualitative findings.

Interview Form Question 1: *What do you think about the "Thesis I" and "Thesis II" courses that you have taken in your fourth year to write your bachelor's thesis? Can you make a general evaluation, please?*

Table 4 summarizes all participants' views of the necessity of the "Thesis I" and "Thesis II" courses. Most participants believed those courses were necessary ($f=40$) (Table 4).

Table 4. Participants' Views of the Necessity of 'Thesis I and Thesis II courses.

The necessity of 'Thesis I and Thesis II courses	
Views	f
Yes	40
Somewhat yes	9
No	6

Below are some quotes from participants who believe that the "Thesis I" and "Thesis II" courses are necessary ($f=40$):

"The "Thesis I" and "Thesis II" courses are important for thesis writing. They're necessary..." (P 1)

"Faculties of arts and sciences are supposed to turn students into scientists and researchers. The "Thesis I" and "Thesis II" courses are necessary." (P 17)

"The 'Bachelor's thesis' course is necessary because it teaches us how to do research on a topic, find solutions, and collect scientific data. Students who get that kind of education for four years should be able to write something academic." (P 25)

"We learned how to write a bachelor's thesis from the "Research Methods and Techniques in Geography" course that we took in the second year. We thought about how to choose a topic. We covered the 'Introduction' section. I think that the 'Thesis I' and 'Thesis II' courses will help me with the thesis..." (P 33)

"I think that students who will graduate from faculties of arts and sciences should be able to conduct research, arrange it and present it. I think the 'Thesis I' and 'Thesis II' courses are necessary..." (P 38)

"We should improve ourselves, and those courses help us with that. We have been informed about the thesis writing process since the second year. Now, we're in the fourth year, and those courses help us see our shortcomings." (P 45)

"I think those courses are necessary because a final-year student should be able to write things and be creative. He should be able to analyse and synthesise." (P 50)

Below are some quotes from participants who believe that the "Thesis I" and "Thesis II" courses are somewhat necessary ($f=9$):

"The 'Thesis I' and 'Thesis II' courses are somewhat necessary because I don't think they're actually about writing a thesis; they're only a formality." (P 7)

"There's uncertainty as to whether those courses are necessary. I mean, most students write bachelor's theses, but do they do it for scientific purposes or just to graduate? That's what I'm not sure of. I can say that a thesis serves scientific purposes if it helps the student develop the skills necessary to write something scientific. The good thing about the courses is that they teach students how to conduct research on a topic. The bad thing about them is that students make too big a deal out of it and so feel nervous when it comes to writing a thesis." (P 22)

"I understand what's going on in the Thesis courses, but, in practice, I just can't make any plans, and I just don't know what to write. But I just have a hard time starting it. Besides, I'm not too happy with my thesis advisor. He doesn't guide me or anything." (P 51)

Below are some quotes from participants who believe that the "Thesis I" and "Thesis II" courses are unnecessary (f=6):

"I don't think that they're necessary because I think students should be required to write theses only if they will do a master's. Otherwise, it's just a waste of time. (P 9)

"I think that writing a bachelor's thesis should be on a voluntary basis. Otherwise, students do that just to pass the course; I mean, I don't think it contributes to their education. Those who are not interested in writing a bachelor's thesis should be allowed to take some other courses instead." (P 13)

"I don't think they're necessary and useful. I mean, students who are considering doing master's and PhD can learn that kind of stuff over time. A bachelor's thesis is necessary only if it explains an original topic and brings prestige and economic benefits to the author." (P 53)

Interview Form Question 2: *Do you consider yourself competent enough to do research and write a thesis? Can you evaluate the courses you have taken and whether you have comprehended the scientific research steps?*

Table 5 summarizes participants' self-perceived competence to work on a bachelor's thesis. Twenty-four participants considered themselves competent to work on a bachelor's thesis. However, thirty-one participants considered themselves somewhat competent or incompetent.

Table 5. Perceived Self-Efficacy in Writing a Bachelor's Thesis

Do you consider yourself competent about writing a bachelor's thesis?	
Views	f
Yes	24
Somewhat yes	17
No	14

Below are some quotes from participants who consider themselves competent to work on a bachelor's thesis (f=24):

"I can do scientific research. The course has been helpful, but I think it makes more sense to take that course in the third year, not in the second." (P 6)

"I can do research and write a thesis. The 'Research Methods and Techniques in Geography' course helped me get it through my head. It helped me a lot to tell what is right and what is wrong." (P 17)

"Yes, I do. All the courses I've taken since my first year are all connected, which helped me tremendously. In my second year, I took the 'Research Methods and Techniques in Geography' course, but I didn't get much about the thesis writing process. But I kind of got the hang of it when I started writing my thesis, and I can say that I'm doing pretty well." (P 29)

"I chose my research topic, and I'm doing my research. I believe that I can conduct scientific research with the help of my thesis advisor and earlier studies. I think that students can do better if they get help from their thesis advisors. You'll be better off if you have a thesis advisor who guides you." (P 38)

"Yes, I do, mostly thanks to the 'Research Methods and Techniques in Geography' course. In fact, our biggest problem is that we have too little time and too many courses to finish our theses." (P 50)

Below are some quotes from participants who consider themselves somewhat competent to work on a bachelor's thesis (f=17):

"I think that I'm somewhat competent. I can do research and put things into practice. But I don't think I'm good at proposing solutions to subproblems." (P 11)

"I don't think you can be competent out of nowhere. You should do research and literature reviews to become more and more competent. It's good that we took the 'Research Methods and Techniques in Geography' course. I want to do something good because it'll set an example for younger students. Writing the thesis helped me learn how to do a literature review and how to use different sources." (P 31)

"I don't think I'm 100% competent. It's because I'm not even halfway there yet. Yes, I can write a thesis by myself, but I'm sure it'll be missing a lot of stuff..." (P 45)

"No, I don't think I'm completely competent to write a thesis. I have a hard time choosing a topic, doing research, and interpreting data. But the courses I took did some help, for sure." (P 53)

Below are some quotes from participants who consider themselves incompetent to work on a bachelor's thesis (f=14):

"I'm not qualified to do scientific research." (P 7)

"I don't think I'm equipped enough to do scientific research. The 'Research Methods and Techniques in Geography' course didn't do much for me. I didn't quite understand the scientific research steps. I don't know how to write the thesis, like I don't know how to do research and a literature review." (P 20)

"No, I don't. The 'Research Methods and Techniques in Geography' course did some help. It showed us the steps we needed to take to write a thesis, but I realized that it wasn't of much help when I started working on my thesis because every thesis advisor has their own style when it comes to writing a thesis." (P 27)

"No, I don't, but it's not about the courses; it's about me not listening to the lecturer/thesis advisor carefully and not practising enough. So, that's why I don't think I'm equipped enough to conduct scientific research." (P 49)

Interview Form Question 3: What do you think are the challenges of writing a thesis; choosing a research topic, method, data collection, or writing?

Participants had mainly difficulty collecting data (f=29), writing (f=24), choosing a research topic (f=17), or deciding on the right method (f=17) (Table 6).

Table 6. The Challenges of Preparing a Thesis

Stage	*f
Collecting data	29
Writing	24
Choosing a research topic	17
Method	17
All stages	5
Finding resources	4
Writing a bibliography	2

*More than one answer

Below are some quotes about the challenges of writing a thesis:

"I have a hard time collecting data and writing because I don't know how to use the software programs." (P 1)

"I had so much difficulty collecting data. I also had a hard time writing because I had no idea how to do it. Choosing a topic was not too hard, but it was hard for me to find resources about my research topic." (P 4)

"It was easy for me to choose a research topic and collect data, but I have a hard time choosing the right method and writing the thesis." (P 7)

"It was pretty hard for me to choose a research topic. I'd picked up a topic, which I loved a lot. But I had to change it because I couldn't complete the scientific research part. I went to an institution to collect data, but they just wouldn't let me. They said they can't share any information with me. So, I went ahead and landed on a more ordinary topic." (P 8)

"I have a hard time choosing the right method, collecting data, and writing. I don't know how to put things into words, and I have no idea how to evaluate data and how to conduct surveys and interviews." (P 20)

"I had difficulty choosing a topic. I changed my topic three times. I also had a hard time putting the stuff I learned into practice." (P 33)

"Choosing the right method and writing has been hard for me. I have a hard time in practice. I write down stuff, but I just can't turn my sentences into citations. I mean, am I supposed to write down what I understand from an article or am I supposed to summarize it? I have no idea." (P 35)

"The greatest challenge for me is writing because I don't know how to type with ten fingers, and I don't know how to use the Microsoft Word." (P 39)

"To be honest, all the steps are a challenge for me." (P 48)

"Choosing the right method and collecting data were the greatest challenges for me. I feel completely inadequate when it comes to deciding between qualitative and quantitative methods and applying them." (P 54)

Interview Form Question 4: *What should be done to improve the thesis writing process?*

Table 7 summarizes what participants thought should be done to improve the thesis writing process.

Table 7. Participants' Recommendations for a More Effective Thesis Writing Process

Recommendations	*f
Thesis advisors should provide more detailed information on how to write a thesis.	21
Thesis advisors should give weekly reports and feedback regarding the execution and progress of the thesis.	10
Students should begin working on their theses in the third year, not the fourth.	8
The thesis writing process should be more systematic and gradual.	7
Thesis advisors should help students with data collection.	6
Thesis advisors should provide students with sample theses.	5
Students should choose research topics that are easy to collect data about.	4
Undergraduate courses should provide more projects and research opportunities to help students gain experience.	4
Academics should teach research methods and techniques well.	4
Students should choose research topics according to their areas of interest.	3
The department should offer the "Research Methods and Techniques in Geography" course in the third year, not in the second year.	2
There should be more hours of class on the thesis writing process.	2
Students do not do their best, which is a problem that should be solved.	2
Students should choose more useful and up-to-date topics to solve social problems.	1
Students should choose research topics that are easier to work on.	1
Academics should trigger students' curiosity.	1
Writing a thesis should be on a voluntary basis.	1

**More than one answer*

Below are some quotes:

"It would be better for students if they took the Thesis I and II courses in the third year." (P 1)

There should be more hours of class on how to write a thesis." (P 4)

I think that students should do what they are supposed to do. I mean, some students do their best, but others don't." (P 6)

"Every student should choose a topic according to their areas of interest. Besides, they should be able to access data easily." (P 9)

Thesis advisors should give feedback at every stage. They should correct students' mistakes and teach them the right way." (P 11)

"I think that writing a thesis should be on a voluntary basis. Thesis advisors should be more attentive and spend more time with their students. The feeling of being monitored can motivate students." (P 13)

"The whole thesis writing process could be easier if students accessed resources more easily and chose topics that were easier to work on." (P 16)

"Thesis advisors should monitor each stage up to a certain point and help students access resources." (P 18)

"Lecturers should assign research topics that are similar to theses. In this way, students can gain experience." (P 20)

"Thesis advisors should arouse the curiosity of students who will write theses." (P 23)

"Thesis advisors should instruct students about research methods and techniques. They should be in constant communication with students and monitor their improvement. They should encourage students to choose interesting topics, not boring and difficult ones." (P 24)

"Thesis advisors should provide students with resources and monitor their improvement." (P 27)

"Thesis advisors should present students with sample theses. They should instruct them on how to put research methods into practice instead of just talking about those methods." (P 28)

"Students should choose more current research topics that are about social problems. They should work on topics and find solutions to problems." (P 30)

"Thesis advisors should present more examples and instruct students on how to write references." (P 35)

"Thesis advisors should make sure that students do their best and should monitor them more closely." (P 43)

"The 'Research Methods and Techniques in Geography' course should be offered in the third year, not in the second." (P 47)

"Thesis advisors should monitor students more closely, and students should choose better topics. Students and thesis advisors should plan each step together. Thesis advisors should be there for their students and spend more time with them." (P 54)

Conclusion, Discussion, and Recommendations

In the present study, the researchers first asked participants (1) what their future career plans were, (2) whether they chose the major willingly, and (3) whether they were happy studying geography. Most participants stated that they wanted to work as teachers or some sort of public officials. Only nine participants considered pursuing academic careers (16.4%) (Table 1). This result indicates that only a limited number of geography students have the goal of becoming scientists and researchers. However, as stated by Yılmaz &

Çokluk (2010), the primary purpose of the faculties of arts and sciences in Turkey is to turn students into scientists and researchers. Twelve participants chose to study geography unwillingly (21.8%) (Table 1). However, only two participants stated that they were unhappy studying geography (3.6%) (Table 1). Although some students choose to study geography unwillingly, they become happy with their choice after a certain point. This is probably because they want to work as teachers or some sort of public officials in the future. Therefore, academics should motivate students to pursue academic careers and become scientists and researchers and ensure that their thesis writing process serves that purpose.

Twenty-one participants believed that writing a thesis should be a requirement for graduation (38.2%) (Table 2). This result suggests that students are not aware enough of the significance of the thesis writing process. However, another goal of the faculties of arts and sciences in Turkey is to help students develop the skills necessary to conduct scientific research (Yılmaz & Çokluk, 2010). There is no research in Turkey addressing geography students' views of writing a bachelor's thesis. Moreover, there is only a small body of research on students' views of writing a bachelor's thesis in general (Yavuz & Kaymakçı, 1996; Ulusoy et al., 2009; Erbay Çetinkaya & Yılmaz, 2017). Yavuz & Kaymakçı (1996) found that 54% of nursing students believed that writing a thesis was an important experience. On the other hand, Ulusoy et al. (2009) reported that most students considered writing a bachelor's thesis unnecessary. These results indicate that undergraduate students fail to recognize the importance of conducting scientific research. Yılmaz & Çokluk (2010) determined that students who took a "scientific research methods" course experienced less anxiety about doing research.

Half the participants believed it would be better for students to start writing their theses before the last year (50.9%) (Table 2). In fact, the Department of Geography of Tokat Gaziosmanpaşa University offers the "Research Methods and Techniques in Geography" course in the second year. Our participants' recommendations also indicated that they believed that the bachelor's thesis writing process should start before the fourth year (Table 7). They also recommended that the department offer more hours of class on thesis writing. Erbay Çetinkaya & Yılmaz (2017) also asserted that students should start working on their theses as early as possible.

Only one participant found the "Research Methods and Techniques in Geography" course useless for the thesis writing process (1.8%) (Table 2). However, thirteen participants found the "Thesis I" and "Thesis II" courses useless (23.6%) (Table 2). The "Research Methods and Techniques in Geography" course is delivered by only one academic, while the "Thesis I" and "Thesis II" courses are delivered by different academics in groups of students. Some participants considered those courses useful, while others found them useless. This is probably because they took them from different academics, and therefore, they were satisfied at different levels. This result was supported by the qualitative results as well. Although most participants believed that the courses were necessary, some were unhappy about their thesis advisors as they stated that they did not receive sufficient support. Twenty-one participants noted that thesis advisors should give them more detailed information about the thesis writing process (Table 7). Ten participants remarked that thesis advisors should give weekly reports and feedback about the thesis writing process (Table 7). Students regard supportive and empowering thesis advisors who guide and mentor their undergraduates as "good thesis advisors" (Roberts & Seaman, 2018). These results indicate that thesis advisors should spend more time with their students, provide them with information and feedback about the thesis writing process regularly, and ensure effective interaction.

Eight participants stated that they were unable to write bibliographies for scientific research (14.5%), while nine participants noted that they were unable to use in-text citations (16.4%) (Table 2). These results show that most students have a rudimentary understanding of conducting sound academic research based on scientific and ethical standards. When writing bachelor's theses or homework assignments, students know how to quote and cite but do not know how to do in-text citations and write bibliographies (Çakmak, 2015).

Therefore, Çakmak (2015) recommends that academics identify and eliminate students' mistakes and misconceptions when it comes to doing in-text citations and writing bibliographies. Two participants remarked that they could not write abstracts (3.6%). Seven participants expressed that they could not form tables of contents, tables, and figures (12.7%). Two participants stated that they could not set page layout (3.6%) (Table 2). Universities should offer training in Microsoft Office to help students overcome those problems.

Güleç & Saruhan (2013) argue that writing a thesis can be a stressor for undergraduates. In support of this view, our participants noted that they did not know how to write a thesis (40%), had difficulty choosing a research topic (34.5%), or were unsure about what to consider when choosing a research topic (43.7%) (Table 3). The interviews support these results. Choosing a research topic was the third greatest challenge for our participants (*f* 17) (Table 6). Participants also had difficulty collecting data, writing, and applying a methodology (Table 6). These results indicate that students do not know much about the scientific research steps.

Güleç & Saruhan (2013) reported that 61.3% of the students experienced anxiety about choosing research topics, whereas 38.7% of the students stated that they received enough help from their thesis advisors. Erbay Çetinkaya & Yılmaz (2017) detected that undergraduate students encountered problems with the language, style, methodology, and choosing a research topic. Yavuz & Kaymakçı (1996) also determined that students had difficulty choosing research topics and communicating with their thesis advisors. Our results are consistent with the literature. We can state that students still suffer from those problems. Sezgin et al. (2012) grouped graduates' expectations of their thesis advisors under the categories of "research process," "communication," and "raising behaviour." Gizir (2005) reported that final-year students regarded their thesis advisors as inconsiderate and aloof people who avoided communication. These results are in parallel to some of the results of the present study.

Forty participants stated that they had difficulty putting the thesis writing steps into practice, although they knew them in theory (72.7%). Twenty-one participants noted that they had a hard time specifying research problems and subproblems (38.2%). Twenty-five participants remarked that it was hard for them to write an "Introduction" and conduct a literature review (45.5%). Thirty-five participants expressed that it was easy to write the purpose and significance sections (63.7%). Thirty-six participants found it the easiest to write the "Limitations" and "Assumptions" sections (65.4%). Eighteen participants stated that they did not know why they had to write the titles and contents of related studies (32.7%) (Table 3). According to these findings, students cannot put their knowledge into practice, do not know why they have to write a research title, and have difficulty writing the "Introduction" section and conducting a literature review. The interviews also showed that participants could not put their knowledge into practice and had difficulty writing (*f* 24) (Table 6). In parallel with this finding, Kan & Gedik (2016) recommended that the curriculum address the subject of academic writing.

Four participants recommended that undergraduate courses offer more research projects to help them gain more experience in academic writing (Table 7). Erbay Çetinkaya & Yılmaz (2017) also found that students lacked research and academic writing skills. As suggested by Ulusoy et al. (2009), academics should explain to their students the significance and benefits of the thesis writing process. Therefore, universities should revise their curricula in a way that they focus more on writing skills.

Nineteen participants noted that they did not know enough about the methods section and steps (34.5%). Twenty-five participants remarked that they knew enough whether to adopt a quantitative or qualitative or a mixed research design (quantitative-qualitative) (45.5%). Forty participants stated that they could develop surveys, interview forms, observation forms, etc. (72.7%). However, only seven participants expressed that they knew how to use data analysis software packages (SPSS, MAXQDA, NVIVO, etc.) (12.7%)

(Table 3). The interviews showed that the greatest challenge for participants was collecting data (*f* 29). They also had difficulty with the method step (*f* 17) (Table 6). These results indicate that students have gaps in their knowledge of the method section. Although most students believe that they know how to develop data collection tools, they do not know how to analyse data. Although the department of geography of Tokat Gaziosmanpaşa University offers courses on statistics, it is evident that students have gaps in their knowledge.

Participants felt adequate about sorting out and presenting data to answer subproblems (56.4%), interpreting results (76.4%), writing a conclusion section (60%), discussing results (45.5%), making recommendations (60%), and presenting their theses and convincing the jury (61.9%) (Table 3). These results show that generally students can write the "Results," "Conclusion," and "Recommendations" sections. What is more, participants did not talk in their interviews about any problems with writing the "Results," "Conclusion," "Discussion," and "Recommendations" sections (Table 6). Male (2021) found that most graduate students experienced anxiety about defending their theses before juries. These results are somewhat different from the results of the present study.

The last interview question posed to all participants was about what to do to make the thesis writing process more effective. The recurrent theme was that participants expected their thesis advisors to give them more detailed information about the process and provide them with reports and feedback. They noted that the thesis writing process should begin in the third year and be more systematic and gradual. They also added that they needed help and guidance with accessing resources and collecting data (Table 7). Although students face similar problems during the thesis writing process, they also encounter different challenges. Therefore, thesis advisors should identify the problems their students experience before they start writing their theses. Aldosari & Ibrahim (2019) recommend that thesis advisors be collaborative people who pay attention to their students' needs and wants.

Some practical recommendations based on the results are as follows: Academics should explain to students the significance of conducting scientific research and the necessity of writing a bachelor's thesis. Curricula should offer more courses and applied projects to help students develop the skills necessary to conduct scientific research and write a bachelor's thesis. Thesis advisors should spend more time with their students and help and guide them more. Future studies should recruit larger samples of students and thesis advisors and look into their views of the thesis writing process based on different variables.

This study had three limitations. First, the data were collected using a questionnaire and an interview form developed by the researcher based on their literature reviews and experiences because there are no valid and reliable measurement instruments that can be used to determine geography students' problems and views of the bachelor's thesis writing process in Turkey. Second, the sample consisted only of geography students from the Faculty of Arts and Sciences of Tokat Gaziosmanpaşa University. Three, the results could not be discussed in the literature because there is no research into geography students' problems and views of the bachelor's thesis writing process. However, this is the first study to investigate the topic, and therefore, it will pave the way for further research.

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The Relationship between Metacognitive Awareness, Self-Efficacy and Attitudes towards Profession of Pre-Service Teachers

Research Article

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ABSTRACT

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The aim of this research is to examine the relationship between the pre-service teachers' metacognitive awareness, self-efficacy and attitudes towards teaching profession. The study designed with the relational survey model. In this study, convenience sampling method was used. A total of 335 university students consisting of 180 (53.7%) female and 155 (46.3%) male individuals studying at the faculties of education of 5 state universities that located in Western Black Sea and Marmara region of Türkiye made up the study group of the study. In the study, Metacognitive Awareness Scale, the Teacher Self-Efficacy Scale and the Attitudes Towards the Teaching Profession Scale were used as data collection tools. In addition to the scales, the "Demographic Information Form" that prepared by the researcher was used. In order to determine whether there is a significant relationship between metacognitive awareness, self-efficacy and attitudes towards teaching profession, Pearson Correlation Coefficient was calculated. Besides, t-test was used to determine whether the students' metacognitive awareness, self-efficacy and attitude towards the teaching profession differed significantly according to gender; ANOVA test was used to determine whether they differed according to department and grade level. According to the findings obtained from the research, there was a positive and moderately significant relationship between the pre-service teachers' metacognitive awareness average score and their self-efficacy average score.

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Keywords:

Metacognitive Awareness, Self-Efficacy, Attitudes, Relationship, Pre-service Teachers

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Introduction

Metacognition is considered one of the most important factors contributing to learning success. The existence of this factor has been developed since the time of Socrates and was introduced by Flavell in the early 1970s. In addition, the critical role of metacognition in the teaching and learning process has been highly emphasized in recent years. The increase in metacognitive studies is clearly stated in some educational journals. As a result, most educational circles see metacognition as a learning competence and a quality that must be acquired by students.

Metacognitive ability is closely related to other success factors performed by independent students. Thanks to the metacognitive skill, students can observe, regulate and control their thinking processes. Students can also evaluate and choose which form of study they deem more effective and appropriate. Based on its role in monitoring and controlling the cognitive process, metacognition is positively associated with self-regulation of learning. In addition, it is reported that metacognition has a significant correlation with motivation and self-efficacy, which are the two most important factors for achieving quality learning. (Fauzi, 2019)

Teachers' personal values guide their goals and behavior at school. In addition, values can support subjective well-being and a sense of individual self-efficacy. Teachers' belief in their ability to effectively handle the tasks, obligations, and challenges associated with their professional activities plays a key role in influencing important academic outcomes and well-being in the work environment.

The concept of self-efficacy is derived from Bandura's theory of social-cognitive behavior change (Bandura, 1977). The concept expresses a teacher's belief in his or her ability to successfully cope with the tasks, obligations and challenges associated with his professional role. According to Singh (2018) many studies have shown that teachers with high self-efficacy are more willing to come up with new ideas, try new teaching methods, and better organize their classrooms. (Allinder, 1994; Ashton, 1985; Bamburg, 2004; Guskey, 1988; Tschannen-Moran & Woolfolk Hoy, 2001).

In short, self-efficacy beliefs affect attitudes towards teaching practice and the educational process, and thus the quality of teaching and learning.

Teaching involves solving complex, nonlinear, dynamic and ambiguous problems by nature. As a result, teacher effectiveness largely depends on personal representation or how teachers define tasks, use strategies, view the probability of success, and ultimately solve the problems and challenges they face.

Researchers such as McGuire (1989) and Wood (2000) believe that attitudes are formed and manifested in three basic dimensions: cognitive, affective and behavioral. The cognitive component of attitudes includes perceptions, beliefs, and assumptions of individual facts and events. The affective component describes emotional experiences and emotional reactions to various facts and events. The behavioral component describes intentions and predictions about how a person might act in relation to a fact or event based on their assumptions and beliefs.

Anderson (1980) points out that attitudes are formed after receiving various information about facts, events, or people. Thus, the nature of the attitudes an individual forms is determined by how information is received and combined, in the sense that certain details of the information may be given more importance than others. For this reason, the importance given to different pieces of information, the order of perception and the values given will contribute to the shaping of attitudes. Factors such as home environment, family background, socioeconomic background, beliefs, and educational institutions affect a teacher's attitudes. It is assumed that pre-service teachers with positive attitudes towards the teaching profession are successful teachers in every sense (Bilgin & Aykaç, 2016). The individual's attitude towards the profession will affect the way he performs the duties required by the profession. As long as individuals have a positive attitude towards

the profession, they will tend to do overcome difficulties during teaching process (Dönmez & Karasulu Kavuncuoğlu, 2019; Kara & Ada, 2021). Positive attitudes towards the profession are reflected in the teacher's classroom behavior and enable better fulfillment of the teacher's role.

When we look at averages in international and national exams as Türkiye, we cannot achieve the results we want. Individuals need to be aware of their own cognitive processes in order to reveal a quality learning. In this direction, the concept of metacognitive awareness emerges. Teachers who are aware of their own cognitive processes and can organize their learning methods are expected to transfer these skills to their teaching. As a result, teacher education has to train qualified teachers and teachers have to train qualified students. If every stakeholder in education, especially teachers and students, knows themselves and is aware of their cognitive ways and skills, the results we expect from the country can be achieved more easily. Examining the relationships between teacher candidates' self-efficacy and attitudes towards the profession, especially metacognitive awareness, and determining the relationships between these concepts formed the basis for this research.

Purpose of Research and Sub-Problems

The aim of this study is to examine the relationship between pre-service teachers' metacognitive awareness, self-efficacy and attitudes towards the profession. The following research questions were formulated for the purpose of this investigation:

1. Do metacognitive awareness, self-efficacy and attitudes towards the profession of pre-service teachers participating in the research differ according to;
 - a- gender
 - b- department
 - c- grade level?
2. Is there a significant relationship between the metacognitive awareness, self-efficacy and attitudes of the teacher candidates participating in the research?
3. Do pre-service teachers' self-efficacy and attitudes have a significant effect on their metacognitive awareness?

Method

In the method part of the study, the model of the research, universe-sample, data collection tools and data analysis are presented.

Research Model

Quantitative research design was conducted to determine the relationships between pre-service teachers' metacognitive awareness, self-efficacy and attitudes towards the profession and to determine whether these three concepts differ significantly in terms of various demographic variables such as gender, department of education and grade level. Relational survey model was applied in this study. Survey models are research approaches that aim to interpret a situation that has happened or continues to happen in the past. At the same time, the important thing in the relational scanning model is to present the existing as it is. Relational survey models are research models that determine whether the change between more than one variable is together or the level of this change. (Karasar, 2015)

Population and Sample

In this study, convenience sampling method, which is one of the non-probability sampling methods, was used. Convenience sampling method is expressed as obtaining data from a sample that researchers can

easily access and where they will not have permission and transportation problems. (Büyüköztürk, 2018: 95) The sample of this study consists of 180 (53.7%) females and 155 (46.3%) males, studying at the education faculties of 5 state universities in the Western Black Sea and Marmara regions in the 2021-2022 academic year. A total of 335 teacher candidates were formed. The sample representing the universe (N=335) consists of participants. Information on demographic distribution is shown in Table 1.

Table 1. Distribution of Participants by Demographic Characteristics

Demographic Characteristics		Frequency	Percentage
Gender	Female	180	53.7
	Male	155	46.3
Age	18-19	101	30.1
	20	68	20.3
	21	94	28.1
	22 and above	72	21.5
Grade Level	1. grade	89	26.6
	2. grade	81	24.2
	3. grade	93	27.8
	4. grade	72	21.5
Department	Primary School Teaching	79	23.6
	Turkish Language Teaching	57	17.0
	English Language Teaching	72	21.5
	Mathematics Teaching	47	14.0
	Pre-school Teaching	50	14.9
	Other	30	9.0

Data Collection Tools

Quantitative data collection tools were used as data collection tool in this study, which was conducted to determine the metacognitive awareness, self-efficacy and attitudes of teacher candidates towards the profession. In the study, Metacognitive Awareness Scale, Teacher Self-Efficacy Scale and Attitude towards Teaching Profession Scale were used as data collection tools. In addition to the scales, the Demographic Information Form prepared by the researcher was used.

Demographic Information Form: It was developed by the researcher with the aim of obtaining data about various demographic variables related to the pre-service teachers constituting the study group. The demographic information form includes demographic variables of the participants' gender, age, department of education, grade level, mother's education level and father's education level.

Metacognitive Awareness Scale: Metacognitive Awareness Scale was developed by Durdukoca and Arıbaş (2019). The scale, which has questions to determine metacognitive awareness, consists of 18 items and three factors. The Cronbach-Alpha reliability coefficient for the entire scale was found to be .75. In this study, the Cronbach-Alpha coefficient of the scale was found to be .88.

Teacher Self-Efficacy Scale: The Teacher Self-Efficacy Scale was developed by Tschannen-Moran and Hoy (2001). The Turkish adaptation and validity-reliability study of the scale was carried out by Çapa, Çakıroğlu, and Sarıkaya (2005). The scale consists of 24 items and three factors and is scored in nine equal intervals. The Cronbach-Alpha reliability coefficient for the overall scale was determined as .96. In this study, the Cronbach-Alpha coefficient of the scale was found to be .93.

Attitude Scale Towards Teaching Profession: The Attitude Scale Towards Teaching Profession was developed by Kahramanoğlu, Yokuş, Cüçük, Vural, and Şiraz (2018). The scale, which has questions to

determine the attitude towards the teaching profession, consists of 12 items and a single factor. The Cronbach-Alpha reliability coefficient for the overall scale was found to be .85. In this study, the Cronbach-Alpha coefficient of the scale was found to be .86.

Data Analysis

It was observed that histogram graphs, kurtosis and skewness coefficients and Kolmogorov-Smirnov test results were similar to normal distribution. Based on the results, it was determined that the distribution of the Meta Cognitive Awareness Scale, Teacher Self-Efficacy Scale and Attitude towards Teaching Profession Scale subscales and total scores were normal and parametric tests were used. Pearson Correlation Coefficient was calculated to determine whether there is a significant relationship between metacognitive awareness, self-efficacy and attitude towards the teaching profession. On the other hand, to determine whether students' metacognitive awareness, self-efficacy and attitudes towards the teaching profession differ significantly according to gender, t-test; ANOVA test was used to determine whether it differs according to department and grade level. LSD test, which is one of the Post Hoc tests, was used to determine between which groups the differences were. IBM SPSS 22 program was used for statistical analysis of the data.

Findings

In this section, the findings about whether the metacognitive awareness, self-efficacy and attitudes of pre-service teachers differ according to the variables of gender, department and grade level are included. In addition, the relationships between metacognitive awareness, self-efficacy and attitude are examined and the effect of self-efficacy and attitude on metacognitive awareness is presented in this section.

Findings on Whether Students' Metacognitive Awareness Levels Differ According to Gender, Department and Grade Level

T test was used to evaluate whether students' metacognitive awareness levels differed significantly according to gender, and ANOVA test was used to evaluate whether they differed according to department and grade level.

Table 2. T-Test Results of Students' Metacognitive Awareness Levels by Gender

	Gender	n	X	ss	sd	t	p
Total Metacognitive Awareness	Female	180	66.05	9.59	333	-1.74	.08
	Male	155	67.84	9.12			
Self-awareness	Female	180	29.71	4.08	333	.05	.96
	Male	155	29.69	4.12			
Organizational Awareness	Female	180	22.22	4.00	333	-1.85	.07
	Male	155	22.99	3.53			
Judgmental Awareness	Female	180	14.12	2.94	333	-3.39	.00*
	Male	155	15.16	2.62			

*p<.05

Judgmental awareness dimension scores of students differ significantly according to gender (t333=-3.39, p<.05). Men's judgmental awareness (\bar{x} =14.16) is higher than women's (\bar{x} =14.12). Total metacognitive awareness score (t333=-1.74, p>.05), self-awareness (t333=.05, p>.05) and organizational awareness (t333=-1.85, p>.05) scores do not differ according to gender.

Table 3. ANOVA Results of Students' Metacognitive Awareness Levels by Department

	Department	Group	n	\bar{X}	ss	sd	F	p	Difference
Metacognitive Awareness	Primary School	A	79	67.91	11.32	4	2.27	.06	--
	Turkish Language	B	57	67.95	6.87	300			
	English Language	C	72	68.53	8.85				
	Mathematics	D	47	65.89	8.39				
	Pre-school	E	50	64.00	9.70				
Self-awareness	Primary school	A	79	30.18	5.44	4	1.98	.10	--
	Turkish Language	B	57	29.49	2.81	300			
	English Language	C	72	30.64	3.61				
	Mathematics	D	47	29.34	3.36				
	Pre-school	E	50	28.78	3.77				
Organizational Awareness	Primary school	A	79	22.80	4.32	4	.72	.58	--
	Turkish Language	B	57	22.91	3.01	300			
	English Language	C	72	22.96	3.44				
	Mathematics	D	47	22.11	3.48				
	Pre-school	E	50	22.10	4.43				
Judgmental Awareness	Primary school	A	79	14.94	2.98	4	5.84	.00*	A>E
	Turkish Language	B	57	15.54	2.13	300			B>D
	English Language	C	72	14.93	2.88				B>E
	Mathematics	D	47	14.45	2.64				C>E
	Pre-school	E	50	13.12	2.89				

*p<.05

The students' judgmental awareness score differs statistically significantly according to the department ($F_{4-300}=5.84$, $p<.05$). It was observed that the difference was between Turkish language teaching ($\bar{x}=15.54$) and mathematics teaching ($\bar{x}=14.45$), and between Turkish language teaching ($\bar{x}=15.54$) and pre-school teaching ($\bar{x}=13.12$). It can be said that the judgmental awareness of the students studying in the Turkish language teaching department is higher than the students studying in the mathematics and pre-school departments. Another difference is primary school teacher ($\bar{x}=14.94$) versus pre-school teacher ($\bar{x}=13.12$), English teacher ($\bar{x}=14.93$) versus pre-school teacher ($\bar{x}=13.12$), and mathematics teacher ($\bar{x}=14.45$) versus pre-school teacher ($\bar{x}=13.12$). It can be stated that the judgmental awareness of the students studying in the primary school, English and mathematics teaching department is higher than the students studying in the pre-school department.

Students' total metacognitive awareness score ($F_{4-300}=2.27$, $p>.05$), self-awareness score ($F_{4-300}=1.98$, $p>.05$) and organizational awareness score ($F_{4-300}=.72$, $p>.05$) does not differ according to the department.

Table 4. ANOVA Results of Students' Metacognitive Awareness Levels by Grade Level

	Grade Level	Group	n	\bar{X}	ss	sd	F	p	Difference
Metacognitive Awareness	1. grade	A	89	68.00	6.67	3	2.26	.08	--
	2. grade	B	81	66.62	9.68	331			
	3. grade	C	93	64.97	10.59				
	4. grade	D	72	68.25	10.09				
Self-awareness	1. grade	A	89	29.66	2.71	3	2.01	.11	--
	2. grade	B	81	29.93	4.17	331			
	3. grade	C	93	28.95	4.74				
	4. grade	D	72	30.47	4.45				
Organizational Awareness	1. grade	A	89	22.89	3.05	3	1.58	.19	--
	2. grade	B	81	22.36	4.00	331			
	3. grade	C	93	22.00	4.13				

Judgmental Awareness	4. grade	D	72	23.17	3.94				
	1. grade	A	89	15.45	2.21	3	4.29	.01*	A>B
	2. grade	B	81	14.33	2.80	331			A>C
	3. grade	C	93	14.02	3.16				
	4. grade	D	72	14.61	2.96				

*p<.05

Judgmental awareness scores of students differ statistically significantly according to grade level (F3-331=5.10, p<.05). It was observed that the difference was between the 1st grade (\bar{x} =15.45) and the 2nd grade (\bar{x} =14.33) and between the 1st grade (\bar{x} =15.45) and 3rd grade (\bar{x} =14.02) levels. It can be said that the judgmental awareness of the 1st grade students is higher than the 2nd grade and 3rd grade students.

Students' total metacognitive awareness score (F3-331=2.26, p>.05), self-awareness score (F3-331=2.01, p>.05) and organizational awareness score (F3-331=1.58, p>.05) does not differ by grade level.

Findings on Whether Students' Self-Efficacy Levels Differ According to Gender, Department and Grade Level

T test was used to evaluate whether students' metacognitive awareness levels differed significantly according to gender, and ANOVA test was used to evaluate whether they differed according to department and grade level.

Table 5. T-Test Results of Students' Self-Efficacy Levels by Gender

	Gender	n	X	ss	sd	t	p
Self-efficacy Total	Female	180	175.65	18.85	333	-1.79	.08
	Male	155	179.02	15.06			
Student Engagement	Female	180	58.62	6.69	333	-.63	.53
	Male	155	59.05	5.53			
Classroom Management	Female	180	58.22	6.67	333	-2.31	.02*
	Male	155	59.80	5.76			
Instructional Strategies	Female	180	58.81	7.02	333	-1.97	.05
	Male	155	60.17	5.31			

*p<.05

Classroom management dimension scores of students differ significantly according to gender (t333=-2.31, p<.05). Men's classroom management score (\bar{x} =59.80) is higher than that of women (\bar{x} =58.22). Self-efficacy total score (t333=-1.79, p>.05), student engagement (t333=-.63, p>.05) and instructional strategies (t333=-1.97, p>.05) scores do not differ according to gender.

Table 6. ANOVA Results of Students' Self-Efficacy Levels by Department

	Department	Group	N	X	ss	sd	F	p	Difference
Self-efficacy Total	Primary school	A	79	182.14	17.83	4	4.79	.00*	A>D
	Turkish Language	B	57	177.28	13.18	300			E>E
	English Language	C	72	180.88	12.51				B>E
	Mathematics	D	47	174.47	17.22				C>E
	Pre-school	E	50	170.84	20.70				C>D
Student Engagement	Primary school	A	79	60.68	6.64	4	3.20	.01*	A>B
	Turkish Language	B	57	58.12	4.73	300			A>D
	English Language	C	72	59.74	5.09				A>E
	Mathematics	D	47	57.74	6.05				
	Pre-school	E	50	57.78	7.07				

Classroom Management	Primary school	A	79	60.46	6.54	4	4.77	.00*	A>D
	Turkish Language	B	57	59.46	4.32	300			A>E
	English Language	C	72	60.38	4.36				
	Mathematics	D	47	57.74	6.47				
	Pre-school	E	50	56.62	7.46				
Instructional Strategies	Primary school	A	79	61.00	5.90	4	5.34	.00*	A>E
	Turkish Language	B	57	59.70	5.23	300			C>E
	English Language	C	72	60.76	4.63				D>E
	Mathematics	D	47	58.98	6.25				
	Pre-school	E	50	56.44	8.13				

*p<.05

The students' self-efficacy scores differ statistically significantly according to the department ($F_{4-300}=4.79$, $p<.05$). It was seen that the difference was between primary school teacher ($\bar{x}=182.14$) and mathematics teacher ($\bar{x}=174.47$) and primary school teacher ($\bar{x}=182.14$) and pre-school teacher ($\bar{x}=170.84$). It can be said that the self-efficacy scores of the students studying in the primary school teaching department are higher than the students studying in mathematics and pre-school departments. Another difference is Turkish language teaching ($\bar{x}=177.28$) versus pre-school teaching ($\bar{x}=170.84$), English language teaching ($\bar{x}=180.88$) versus pre-school teaching ($\bar{x}=170.84$), and English teaching ($\bar{x}=180.88$) versus mathematics teaching ($\bar{x}=174.47$). It can be stated that the self-efficacy scores of the students studying in Turkish and English language teaching department are higher than the students studying in the pre-school department. It can be stated that the self-efficacy scores of the students studying in the English language teaching department are higher than the students studying in the mathematics teaching department.

Table 7. ANOVA Results of Students' Self-Efficacy Levels by Grade Level

	Grade Level	Group	n	X	ss	sd	F	p	Difference
Self-efficacy Total	1. grade	A	89	178.31	9.79	3	3.49	.02*	D>B
	2. grade	B	81	176.14	19.26	331			D>C
	3. grade	C	93	173.48	18.39				
	4. grade	D	72	181.86	19.58				
Student Engage	1. grade	A	89	58.47	4.10	3	3.14	.03*	D>A
	2. grade	B	81	58.95	6.99	331			D>C
	3. grade	C	93	57.69	6.34				
	4. grade	D	72	60.57	6.80				
Classroom Management	1. grade	A	89	59.88	3.73	3	4.06	.01*	D>B
	2. grade	B	81	58.17	7.10	331			D>C
	3. grade	C	93	57.56	6.68				
	4. grade	D	72	60.47	6.97				
Instructional Strategies	1. grade	A	89	59.97	3.80	3	2.64	.04*	D>C
	2. grade	B	81	59.01	7.10	331			
	3. grade	C	93	58.24	6.88				
	4. grade	D	72	60.82	6.87				

*p<.05

The students' total self-efficacy scores differ statistically significantly according to the grade level ($F_{3-331}=3.49$, $p<.05$). It was observed that the difference was between 4th grade ($\bar{x}=181.86$) and 2nd grade ($\bar{x}=176.14$) and 4th grade ($\bar{x}=181.86$) and 3rd grade ($\bar{x}=173.48$) levels. It can be said that the self-efficacy of the 4th grade students is higher than the 2nd grade and 3rd grade students.

Findings on Whether Students' Attitudes Towards Teaching Profession Differ According to Gender, Department and Grade Level

T-test was used to evaluate whether students' metacognitive awareness levels differed significantly according to gender, and ANOVA test was used to evaluate whether they differed according to department and grade level.

Table 8. T-Test Results of Students' Attitudes Towards Teaching Profession by Gender

	Gender	n	X̄	ss	sd	t	p
Attitudes Towards Teaching Profession	Female	180	51.14	7.01	333	5.10	.00*
	Male	155	47.52	5.79			

*p<.05

Students' attitudes towards the teaching profession differ significantly by gender (t333=5.10, p<.05). The attitude score of women (\bar{x} =51.14) is higher than that of men (\bar{x} =47.52).

Table 9. ANOVA Results of Students' Attitudes Towards Teaching Profession by Department

	Department	Group	n	X̄	ss	sd	F	p	Difference	
Attitudes Towards Teaching Profession	Primary school	A	79	47.44	7.75	4	9.50	.00	E>A	
	Turkish Language	B	57	46.75	4.31				300	E>B
	English Language	C	72	50.28	5.79				E>C	
	Mathematics	D	47	50.85	5.99					
	Pre-school	E	50	53.14	7.15					

*p<.05

Students' attitudes towards the teaching profession differ statistically significantly according to the department (F4-300=9.50, p<.05). The differences were found between pre-school teacher (\bar{x} =182.14) and primary school teacher (\bar{x} =174.47), pre-school teacher (\bar{x} =182.14) Turkish language teaching (\bar{x} =170.84), pre-school teacher (\bar{x} =182.14) versus English language teacher (\bar{x} =170.20). It can be said that the attitude of the students studying in the pre-school teaching department is higher than the students studying in the primary school, Turkish and English language departments.

Table 10. ANOVA Results of Students' Attitudes Towards Teaching Profession by Grade Level

	Grade Level	Group	n	X̄	ss	sd	F	p	Difference	
Attitudes Towards Teaching Profession	1. grade	A	89	48.43	4.84	3	9.60	.00*	D>A	
	2. grade	B	81	50.06	6.61				331	D>B
	3. grade	C	93	47.49	7.96				D>C	
	4. grade	D	72	52.63	5.89					

*p<.05

Students' attitudes towards the teaching profession show a statistically significant difference according to the grade level (F3-331=9.60, p<.05). The differences between 4th grade (\bar{x} =52.63) and 1st grade (\bar{x} =48.43), 4th grade (\bar{x} =52.63) and 2nd grade (\bar{x} =50.06) and 4th grade (\bar{x} =52.63) vs. 3rd grade (\bar{x} =47.49) levels were found. It can be said that the attitudes of the 4th grade students towards the teaching profession are higher than the 1st grade, 2nd grade and 3rd grade students.

It was examined whether there is a significant relationship between students' metacognitive awareness, self-efficacy and attitudes towards the profession. The Pearson correlation coefficient was calculated. The correlation coefficient is given in Table 11.

Table 11. The Relationships Between Students' Metacognitive Awareness, Self-efficacy and Attitudes towards the Profession

Variables	1	1.1	1.2	1.3	2	2.1	2.2	2.3	3
1. Metacognitive Awareness Total	--	.89**	.91**	.80**	.57**	.52**	.51**	.53**	.35**
1.1. Self-awareness		--	.72**	.55**	.51**	.48**	.47**	.45**	.38**
1.2. Organizational Awareness			--	.64**	.51**	.48**	.44**	.48**	.34**
1.3 Judgmental Awareness				--	.46**	.39**	.43**	.44**	.15**
2. Self-efficacy Total					--	.91**	.91**	.94**	.40**
2.1. Student Engagement						--	.72**	.78**	.43**
2.2 Classroom Management							--	.80**	.33**
2.3. Instructional Strategies								--	.34**
3 Attitudes Towards Teaching Profession									--

* $p < .05$, ** $p < .01$

A moderately significant positive correlation was found between the students' metacognitive awareness total score and their self-efficacy total score ($r = .57$, $p < .01$). A low level of positive correlation was found between the total score of metacognitive awareness and the total score of attitude towards the teaching profession ($r = .35$, $p < .01$). A moderately significant positive correlation was found between the total score of self-efficacy and the total score of attitude towards the teaching profession ($r = .40$, $p < .01$).

Findings on the Prediction of Students' Metacognitive Awareness Scores by Self-Efficacy and Attitudes towards the Profession Scores

Multiple regression analysis test was applied to determine the predictive power of students' self-efficacy and attitudes towards teaching profession scores on metacognitive awareness scores. The results of multiple regression analysis regarding the prediction of metacognitive awareness score are given in Table 12.

Table 12. Multiple Regression Analysis Results on the Prediction of Metacognitive Awareness Scores

Variable	B	Std. Error	β	T	p
Constant	7.60	4.59		1.66	.01
Self-efficacy	.28	.03	.51	10.39	.00
Attitudes Towards Teaching Profession	.21	.07	.15	3.13	.00

R = .58 R² = .34
F_{2,332} = 84.98 P = .00

As seen in Table 12, self-efficacy and attitude scores significantly predict metacognitive awareness score ($R = .58$, $R^2 = .34$, $p < .05$). Self-efficacy and attitude towards teaching profession scores together explain 34% of the variance in metacognitive awareness scores. In other words, self-efficacy and attitude towards teaching profession together affect 34% of the metacognitive awareness score.

Discussion and Conclusion

In this section, the results obtained from the findings on metacognitive awareness, self-efficacy and attitudes of 335 teacher candidates participating in the research are included.

When examining whether gender has an effect on pre-service teachers' metacognitive awareness, it was seen that there was a significant difference in favor of men in the dimension of judgmental awareness, which is one of the sub-dimensions of the scale. However, when the total score of metacognitive awareness was evaluated, it was not seen that gender had an effect on pre-service teachers' metacognitive awareness. Findings supporting this result were found in the field. A similar result was reached in the study conducted by Özsoy

and Günindi (2011). In the studies conducted by Cihanoğlu (2012) and Palantis (2018), results supporting our findings were obtained. Also Asy'ari and Rosa (2022) stated that metacognitive awareness is not significantly different based on the gender. When the metacognitive awareness of the teacher candidates according to the department of education was examined, it was seen that the judgmental awareness of the students studying in the Turkish teaching department was higher than the other departments. When the total score of metacognitive awareness was examined, it was concluded that metacognitive awareness did not differ according to the department studied. Although the grade level has a small effect on metacognitive awareness in favor of 4th graders, it is not possible to say that there is a differentiation. Özsoy and Günindi (2011) found that there was no differentiation between grade levels in their study in which they investigated the metacognitive awareness of preschool teachers.

Although the classroom management score, which is one of the sub-dimensions of self-efficacy, was higher for men than for women, it was observed that there was no gender difference in terms of other sub-dimensions and total self-efficacy scores. It has been understood that the self-efficacy of the teacher candidates studying in the primary school teaching department is higher than the other departments. In the study conducted by Gürbüzürk and Şad (2009), it was mentioned that primary school teacher candidates have higher self-efficacy than Mathematics and English teacher students. Gürbüzürk and Şad (2019) based this situation on the fact that primary school teacher students receive good education in the fields of Turkish, Mathematics, Social Studies and Science, thanks to constructivist education programs. Considering the total self-efficacy score, it was seen that the 4th grade students had higher self-efficacy than the other grade levels. Tunca and Şahin (2014) also found that self-efficacy differed significantly in favor of fourth grade students. The reason for this result can be explained by the fact that the pre-service teachers are now in the last year of their education, they have increased their teaching experience by doing internships and their field knowledge has increased compared to previous years.

When the attitudes of the teacher candidates participating in the study towards the profession were examined, it was determined that the scores of women were higher. Terzi and Tezci (2007) also found that female teacher candidates have higher attitudes towards the profession. This result can be explained by the perception that the teaching profession, which takes place in many societies, is a more suitable profession for women. When the attitudes of the participants towards the teaching profession were examined, it was concluded that the attitudes of the pre-service teachers studying in the preschool teaching department were higher than the students studying in the primary school, Turkish and English language departments. Demirtaş, Cömert, and Özer (2011) stated that in the studies of attitude towards the teaching profession in the literature, consistent results could not be obtained in the examinations made in the direction of different variables regarding the attitude. Çapri and Çelikkaleli (2008) and Oral (2004) agreed in their studies that the department of education has a small effect on attitude and there is no differentiation on this. It was observed that the attitude towards the profession showed a significant difference in favor of the 4th grade students. This situation is in parallel with the research results of Aydın and Tekneci (2013). When the literature is examined, it has been found that in some studies, grade level does not have an effect on attitude and, as Gökçe and Sezer (2012) argue, there is a differentiation against 4th grade students due to the anxiety of not being appointed. This result of our research can be explained by the positive attitudes of the students who are about to graduate due to the opportunities brought by the teaching profession in today's conditions.

There was a moderately significant positive correlation between the students' metacognitive awareness total score and their self-efficacy total score. This means that promoting metacognitive awareness can increase student self-efficacy. In other words, students with a high sense of self-efficacy are likely to have high metacognitive awareness. The result obtained is consistent with the findings of Savia (2008), who determined that the relationship between metacognitive awareness and performance is deeply affected by self-efficacy.

Also Cera et al. (2023) found out students with high metacognitive skills have a high sense of self-efficacy. It was observed that there was a low level of positive correlation between the total score of metacognitive awareness and the total score of attitudes towards the teaching profession. A moderately significant positive correlation was found between the total score of self-efficacy and the total score of attitude towards the teaching profession.

Considering the teaching profession, each of the concepts of metacognitive awareness, self-efficacy and attitude towards the profession in our research is important. Metacognitive awareness has been the main concept and difference of this study, as well as the self-efficacy and attitude towards profession studies that are frequently encountered in the literature. For this reason, special attention was given to determining the predictive power of self-efficacy and attitude towards the profession in metacognitive awareness in the study. The concepts of self-efficacy and attitude together affect 34% of the metacognitive awareness score. From this result, it can be interpreted that 34% of metacognitive awareness consists of self-efficacy and attitude. As can be understood from this situation, more emphasis should be placed on metacognition and awareness in teacher education.

Ethics Committee Approval:

The article was approved by Zonguldak Bülent Ecevit University Ethics Committee with the protocol number 305 in 04.11.2021.

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Opinions of the Students Studying at the Faculty of Education About Social Media's Effect on Individuals

Research Article

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ARTICLE INFO	ABSTRACT
<p><i>Article History:</i></p> <p>Received: 31.12.2022</p> <p>Available online: 03.08.2023</p>	<p>People tend to turn towards virtual environments as technology develops. They have started to use social media accounts more than face-to-face communication. This causes negative attitudes e.g., lack of communication, anxiety, misunderstanding, and academic failure among people. Thus, this study was carried out to determine social media's influence on individuals. The study method is the relational survey model, one of the quantitative research methods. The study group consists of 300 students studying at the Faculty of Education in Firat University. Of the participants, 80 are female and 220 are male. The data was collected through the personal information form which aims to collect information about the gender of the participants, how many hours they spend on social media per day, and the social media account they actively use.</p>
	<p>Keywords: Social media, use of social media, internet</p>

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Introduction

Today, society is developing quite rapidly, and in parallel, the internet is developing too. As a result of the developing and changing technology, tools such as computers and the internet are among the most sought-after to get information quickly and accurately. The use of the media and the internet led to the emergence of the concept of social media (Çelik, 2020, p.5). Social media is a virtual environment that allows people to create their own identities, share things with the group or community they have created, and obtain information about other people (Boyd & Ellison, 2008). Another definition says that social media is a form that enables individuals to convey their ideas and communicate with each other in line with a common goal (Mahajan,

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2013). Social media has developed as a result of the concept of “Web 2.0”. After the World Wide Web was presented to the public as *www*, the preparations for social media began in 1991 (Gönenli & Hürmeriç, 2012, in Akgül, 2017, p.70). Social media has today become so widespread that studies confirm this opinion. Started to be accepted in the 2000s, the concept of social media marked an era when Mark Zuckerberg and his friends established the Facebook social media site and it reached 1.65 billion users (BBC, 2018). In addition to Facebook, Twitter which won an award as the best blog in 2007 is one of the important social media applications bringing society together, which did not attract much attention when it first came out but started to be noticed later (Biography, 2018). A study shows that 55% of US youth between the ages of 12-17 use social sites (Lenhart & Madden, 2007). Also, a report by “We Are Social” and “Meltwater” in 2023 presents that the rate of social media usage in Turkey is 73.1% while it is 59% worldwide. It is evident that Turkey is under the average according to the report 2023. In a study by a company called “We Are Social” in 2020, it was revealed that 3.80 billion people are using social media all over the world (We Are Social, 2020, p.22).

The use of social media has become both widespread and accessible due to the development of technology and, in addition, the internet. Facebook, Twitter, Instagram, LinkedIn, MySpace, and YouTube that people use to share information and express their thoughts are the main social media, and these have become very popular for social interaction (Berryman, Ferguson & Negy; Fleck & Migalski, 2018, 2015).

Owing to the internet and social media, a different form of communication has emerged among people. Social media has provided individuals with many advantages in terms of education and socialization (Fulantelli, Scifo & Taibi, 2021). However, the widespread use of social media is also likely to have negative effects on individuals. Although it is said that via social media, groups of people will communicate with each other more and this will be beneficial for people, in fact, people prefer messaging through social media sites such as Facebook, Instagram, and Twitter, instead of face-to-face talking, which is very ironic (Amadie, 2015). After the emergence and popularity of social media, people use it for purposes such as knowing about their friends’ lives, playing games, spending time, sending pictures and videos, and communicating. When people feel lonely, they take refuge in social media, which increases their addiction to social media and the internet. Also, being excessively addicted to social media negatively affects both the psychological and physical health of individuals (Çam & İşbulan, 2012; Kılıç, 2020; Liu & Ma, 2018).

Social media has a high influence on individuals and society. It affects the more use of environments that enable individuals to realize themselves and be free. The rapid spread of social events both in the world and in our country via social media reveals its power (Jones, 2009). Also, social media has both positive and negative effects on education. For instance, it offers various solutions to search for information and provides learning from different sources. Thanks to it, people see and learn a subject they do not know before, and thus increase their knowledge. Again, thanks to it, people find a middle ground and can access issues that they have difficulty finding answers to, which is a feature that reflects positively on education. In addition to its positive effects, it can have some negative effects, too. While researching a subject, students constantly perform it through the internet and social media, and as a result, they have less face-to-face communication with their peers. Besides all these downsides, social media can be criticized as it can violate people’s private life. In short, social media vastly changes people’s lives (Akram & Kumar, 2017; Levy, 2007; Sezgin, 2019).

Social media use is the most common activity among children and adolescents (Clarke & O’Keeffe, 2011). Social media has become an integral part of the modern world and helped to get to know the new generation’s children. Despite its positive promises e.g., education, socialization, and communication, it has negatively affected many people, especially adolescents, although adults do not realize it (Cookingham & Ryan, 2015).

Increasingly, especially adolescents have become more frequent users of social media. How the frequent use of social media affects individuals led to the necessity to conduct this study. Via this study, it is aimed to

show and interpret how social media, which is rapidly developing and becoming widespread today, influences individuals.

Method

Research Design

Aiming to reveal how social media which has become increasingly popular recently affects individuals, this study used the relational survey model which is one of the quantitative research methods. This model is non-experimental research, which determines the relationship between variables and is based on measuring two or more variables (Christensen, Johnson & Turner, 2020:45).

Accessible Population

Considering young people use social media mostly, the study universe is students studying at the faculty of education. Thus, the study sample consists of 300 students studying at the Faculty of Education in Fırat University. Of the participants, 80 are female and 220 are male. Through the personal information form targeting to collect the data about the participants' gender, how many hours per day they spend on social media, and the social media account they actively use, the details were collected, and there is no data that was not included in the analysis.

Table 1. The participants' details about their gender, how many hours they spend on social media per day, and the number of social networks they actively use

Gender	f	%
Female	80	26.7
Male	220	73.3
Time	f	%
1 hour	39	13
2 hours	43	14.3
3 hours	63	21
4 hours	43	14.3
5 hours and more	112	37.3
Account Number	f	%
1	71	23.7
2	104	34.7
3	83	27.7
4	29	9.7
5 and more	13	4.3

Table 1 presents that 26.7% of the participants are female and 73.3% are male, and 13% spend 1 hour on social media, 14.3% spend 2 hours, 21% spend 3 hours, 14.3% spend 4 hours, and 37.3% spend 5 hours or more;

also, regarding the actively used account numbers, 23.7% have 1 account, 34.7% have 2 accounts, 27.7% have 3 accounts, 9.7% have 4 accounts, and 4.3% have 5 or more accounts.

Data Collection Tools

The data were obtained via the questionnaire form created by the researchers. The questionnaire was prepared by examining the literature on social media's effects on individuals and taking the opinions from two field experts. It consists of 2 parts in total. The first part contains demographic data and the items regarding the opinions were compared based on these data. The second part has 22 items of opinions about the effects of social media on individuals. The data collection tool's Cronbach's alpha value was found to be (.734) and its KMO value was found to be (.787).

Data Analysis

A five-point Likert scale was used in the questionnaire and the data were collected based on this Likert. In the data analysis, SPSS statistical software was utilized, and "arithmetic mean", "percentage", and "frequency" are used. Also, the degree of teachers' opinions being influenced by variables based on demographic data was also assessed through the ANOVA test.

The applied scale in the study has been prepared in a five-point Likert-type format. The five-point rating scale is based on equal intervals;

I Disagree Completely	: 1,00-1,80
I Disagree	: 1,81-2,60
I Am Not Sure	: 2,61-3,40
I Agree	: 3,41-4,20
I Agree Completely	: 4,21-5,00

Findings

The Participants' Opinions on Why They Use Social Media Mostly

Table 2. The participant's opinions on why they use social media mostly

	f	%
Communication	92	30.6
Headlines/News	37	12.3
Entertainment	66	22
Spending Time	66	22
Information	33	11
Education	6	2

Table 2 shows that 30.6% of the participants use social media mostly for communication, 12.3% for reaching headlines/news, 22% for entertainment, 22% for spending time, 11% for information, and 2% for education.

The Participants’ Opinions on the Social Media That They Use the Most

Table 3. The participants’ opinions on the social media that they use the most

	f	%
WhatsApp	100	33.3
Instagram	125	41.6
Twitter	29	9.6
YouTube	38	12.6
Facebook	8	2.6

Table 3 exhibits that 41.6% of the participants use Instagram, 33.3% WhatsApp, 12.6% Youtube, 9.6% Twitter, and 2.6% Facebook.

Frequency, Percentage, Mean, and SS Values of the Answers

Table 4. Frequency, percentage, mean, and SS values of the answers

	n	I agree completely	I agree	I am not sure	I disagree	I disagree completely	\bar{X}	SS
Items regarding the opinions								
I always check my social media accounts when I go online.	300	%45.0	%39.0	%7.0	%6.0	%3.0	4.17	1.00
It is important to me what the people I follow share.	300	%15.0	%30.0	%21.3	%21.7	%12.0	3.14	1.25
I think my social media accounts take up most of my time.	300	%29.3	%26.0	%15.0	%23.7	%6.0	3.49	1.29
I get affected by the news I see on social media.	300	%18.7	%43.0	%18.7	%14.0	%5.7	3.55	1.11
I think social media is a hindrance to my life.	300	%13.7	%19.0	%21.0	%30.7	%15.7	2.84	1.28
Social media negatively affects my communication with my family.	300	%10.0	%14.0	%20.3	%29.0	%26.7	2.51	1.29
I prefer social networks to meet my friends.	300	%20.7	%38.0	%16.0	%13.3	%12.0	3.42	1.28
I communicate with my friends more easily using social networks.	300	%24.3	%45.0	%12.7	%10.0	%8.0	3.67	1.79
I communicate with my family more easily using social networks.	300	%12.3	%26.7	%13.0	%26.3	%21.7	2.81	1.36

Items regarding the opinions	n	I agree completely	I agree	I am not sure	I disagree	I disagree completely	\bar{X}	SS
I think I am addicted to my social media accounts.	300	%15.3	%22.3	%21.3	%21.7	%19.3	2.92	1.35
My family interferes with my social media accounts.	300	%7.0	%11.7	%10.3	%28.3	%42.7	2.12	1.27
My family thinks I spend too much time on social media.	300	%12.0	%21.7	%13.3	%33.0	%20.0	2.72	1.32
My friends think I spend too much time on social media.	300	%9.3	%17.7	%21.7	%33.0	%13.8	2.66	1.22
I think social media has a positive influence on my life.	300	%6.7	%26.3	%39.3	%18.7	%9.0	3.03	1.03
I think social media does not reflect reality.	300	%16.7	%25.7	%37.3	%12.0	%8.0	3.47	2.97
Social media harms our communication with people.	300	%10.3	%26.7	%26.3	%25.3	%11.3	2.99	1.17
I think I use social media consciously.	300	%25.7	%37.0	%25.0	%8.0	%4.3	3.71	1.06
The events I see on social media leave an impact on my mind.	300	%12.3	%37.3	%25.3	%14.7	%10.3	3.26	1.16
I wouldn't want social media and communication tools to exist.	300	%13.3	%16.0	%22.3	%25.3	%23.0	2.74	1.50
Social media has a strong influence on people.	300	%41.7	%36.3	%12.0	%5.7	%4.3	4.05	1.07
Social media negatively affects communication within families.	300	%20.7	%25.0	%25.0	%18.3	%11.0	3.26	1.27
Using social media unconsciously causes deterioration of relations among humans.	300	%52.0	%29.0	%9.0	%6.0	%4.0	4.19	1.08

Regarding the effects of social media on individuals, Table 4 shows that the participants said "I agree" to the items "I always check my social media accounts when I go online." (\bar{X} =4.17), "I think my social media accounts take up most of my time." (\bar{X} =3.49), "I get affected by the news I see on social media." (\bar{X} =3.55), "I prefer social networks to meet my friends." (\bar{X} =3.42), "I communicate with my friends more easily using social networks." (\bar{X} =3.67), "I think social media does not reflect reality." (\bar{X} =3.47), "I think I use social media consciously." (\bar{X} =3.71), "Social media has a strong influence on people." (\bar{X} =4.05), and "Using social media unconsciously causes deterioration of relations among humans." (\bar{X} =4.19).

Regarding the effects of social media on individuals, Table 4 shows that the participants said: “I am not sure” to the items “It is important to me what the people I follow share.” (\bar{X} =3.14), “I think social media is a hindrance to my life.” (\bar{X} =2.84), “I communicate with my family more easily using social networks.” (\bar{X} =2.81), “I think I am addicted to my social media accounts.” (\bar{X} =2.92), “My family thinks I spend too much time on social media.” (\bar{X} =2.72), “My friends think I spend too much time on social media.” (\bar{X} =2.66), “I think social media has a positive influence on my life.” (\bar{X} =3.03), “Social media harms our communication with people.” (\bar{X} =2.99), “The events I see on social media leave an impact on my mind.” (\bar{X} =3.26), “I wouldn’t want social media and communication tools to exist” (\bar{X} =2.74), and “Social media negatively affects communication within families.” (\bar{X} =3.26).

Regarding the effects of social media on individuals, Table 4 shows that the participants said “I disagree” to the items “My family interferes with my social media accounts.” (\bar{X} =2.12) and “Social media negatively affects my communication with my family.” (\bar{X} =2.51).

Comparison of the Participants’ Opinions According to the Number of Social Media That They Actively Use

Table 5. Analysis results according to the number of social media the participants actively use

Item No	WhatsApp		Instagram		Twitter		YouTube		Facebook		Variance		Groups with Difference (Scheffe)
	\bar{X}	S	\bar{X}	S	\bar{X}	S	\bar{X}	S	\bar{X}	S	F	p	
1	3.74	1.22	4.13	0.92	4.40	0.89	4.51	0.73	4.46	0.51	5.896	0.000	1-3, 1-4
3	2.76	1.35	2.65	1.18	2.34	1.19	1.96	1.34	2.23	1.32	2.806	0.026	1-3, 1-4, 2-4
7	3.04	1.33	3.51	1.28	1.18	1.18	3.41	1.29	4.15	1.21	2.919	0.022	1-2, 1-3, 1-5
8	3.19	1.35	3.78	1.06	3.91	1.01	3.68	1.28	3.84	1.14	4.269	0.002	1-2, 1-3,
9	2.47	1.30	2.92	1.33	2.87	1.46	3.31	1.28	2.30	1.03	2.753	0.028	1-2, 1-4, 4-5
16	2.66	1.21	2.97	1.18	3.24	1.08	3.27	1.09	3.07	1.32	2.814	0.026	1-3, 1-4,

Note. *p < 0.05.

To the first item “I always check my social media accounts when I go online.”, those with Twitter (\bar{X} : 4.40) and YouTube (\bar{X} : 4.51) accounts stated to check their accounts more, compared to those with WhatsApp (\bar{X} : 3.74) account.

To the third item “I think my social media accounts take up most of my time.”, those with Twitter (\bar{X} : 2.34) and YouTube (\bar{X} : 1.96) accounts stated it taking up less time, compared to those with WhatsApp (\bar{X} : 2.76) account; and those with YouTube (\bar{X} : 1.96) accounts stated it taking up less time, compared to those with Instagram (\bar{X} : 2.65) accounts.

To the seventh item “I prefer social networks to meet my friends.”, those with Instagram (\bar{X} : 3.51), Twitter (\bar{X} : 1.18), and Facebook (\bar{X} : 4.15) accounts stated to prefer it more, compared to those with WhatsApp (\bar{X} : 3.04) account.

To the eighth item “I communicate with my friends more easily using social networks.”, those with Instagram (\bar{X} : 3.78) and 3 (\bar{X} : 3.91) accounts stated to communicate with their friends more easily using social networks, compared to those with WhatsApp (\bar{X} : 3.19) account.

To the ninth item “I communicate with my family more easily using social networks.”, those with Instagram (\bar{X} : 2.92) and 4 (\bar{X} : 3.31) accounts stated to communicate with their families more easily using social networks, compared to those with WhatsApp (\bar{X} : 2.47) account; and those with Facebook (\bar{X} : 2.30) accounts stated to communicate with their families more difficultly using social networks, compared to those with YouTube (\bar{X} : 3.31) accounts.

To the sixteenth item “Social media harms our communication with people.”, those with Twitter (\bar{X} : 3.24) and YouTube (\bar{X} : 3.27) accounts stated it damaging communication more, compared to those with WhatsApp (\bar{X} : 2.66) account.

Comparison of the Participants’ Opinions According to the Variable of Time That They Spend on Social Media

Table 6. Analysis results according to the variable of time the participants spend on social media

Item No	WhatsApp		Instagram		Twitter		YouTube		Facebook		Variance		Groups with Difference (Scheffe)
	\bar{X}	S	\bar{X}	S	\bar{X}	S	\bar{X}	S	\bar{X}	S	F	p	
1	3.43	1.29	3.83	1.19	4.06	0.91	4.39	.65	4.52	0.75	12.302	0.000	1-3, 1-4, 1-5, 2-5, 3-5
2	2.64	1.32	3.16	1.36	3.00	1.13	3.13	1.10	3.39	1.26	2.940	0.021	1-5
3	3.15	1.46	3.44	1.24	2.55	1.21	2.48	1.18	1.91	1.00	17.008	0.000	1-5, 2-3, 2-5, 3-5
5	3.23	1.40	3.55	1.20	3.31	1.20	3.41	1.17	2.78	1.28	4.290	0.002	2-5
8	3.23	1.20	3.39	1.25	3.61	1.14	3.81	1.18	3.91	1.10	3.492	0.008	1-5
10	3.20	1.36	3.62	1.29	3.25	1.37	3.02	1.18	2.73	1.34	4.149	0.003	2-5
12	3.64	1.26	3.81	1.13	3.44	1.27	3.27	1.22	2.83	1.35	6.205	0.000	1-5, 2-5
13	3.76	1.08	3.65	1.27	3.55	1.08	3.37	1.25	2.91	1.21	6.037	0.000	1-5, 2-5, 3-5
20	3.76	1.26	3.72	1.35	4.06	0.96	4.23	0.89	4.20	0.96	2.628	0.035	1-4, 1-5, 2-4

Note. * $p < 0.05$.

From Table 6, a significant difference is seen after the comparison of the participants’ opinions according to the variable of time they spend on social media. To the first item “I always check my social media accounts when I go online.”, the individuals who spend 3 (\bar{X} : 4.06) and 4 (\bar{X} : 4.39) hours on social media stated to check their accounts more, compared to those spending 1 (\bar{X} : 3.43) hour; and those spending 1 (\bar{X} : 3.43) hour, 2 (\bar{X} : 3.83) and 3 (\bar{X} : 4.06) hours stated to check their accounts less, compared to those who spend 5 (\bar{X} : 4.52) hours.

To the second item “It is important to me what the people I follow share.”, the individuals who spend 5 (\bar{X} : 3.39) hours on social media stated it to be more important, compared to those spending 1 (\bar{X} : 2.64) hour.

To the third item “I think my social media accounts take up most of my time.”, the individuals who spend 1 (\bar{X} : 3.15) hour, 2 (\bar{X} : 3.44) and 3 (\bar{X} : 2.55) hours on social media stated it taking up more time, compared to those spending 5 (\bar{X} : 1.91) hours; and those spending 2 (\bar{X} : 3.44) hours stated it taking up more time, compared to those spending 3 (\bar{X} : 2.55) hours.

To the fifth item, “I think social media is a hindrance to my life.”, the individuals who spend 5 (\bar{X} : 2.78) hours on social media stated it to be a less hindrance, compared to those spending 2 (\bar{X} : 3.55) hours.

To the eighth item “I communicate with my friends more easily using social networks.”, the individuals who spend 5 (\bar{X} : 3.91) hours on social media stated to communicate with their friends more easily using social networks, compared to those spending 1 (\bar{X} : 3.23) hour.

To the tenth item “I think I am addicted to my social media accounts.”, the individuals who spend 2 (\bar{X} : 3.62) hours on social media stated to be addicted to it more, compared to those spending 5 (\bar{X} : 2.73) hours.

To the twelfth item “My family thinks I spend too much time on social media.”, the individuals who spend 1 (\bar{X} : 3.64) hour and 2 (\bar{X} : 3.81) hours on social media stated that their family more thinks they spend too much time on social media, compared to those spending 5 (\bar{X} : 2.83) hours.

To the thirteenth item "My friends think I spend too much time on social media.", the individuals who spend 1 (\bar{X} : 3.76) hour, 2 (\bar{X} : 3.65) and 3 (\bar{X} : 3.55) hours on social media stated that their friends more think they spend too much time on social media, compared to those spending 5 (\bar{X} : 2.91) hours.

To the twentieth item "Social media has a strong influence on people.", the individuals who spend 4 (\bar{X} : 4.23) and 5 (\bar{X} : 4.20) hours on social media stated it having a stronger influence, compared to those spending 1 (\bar{X} : 3.76) hour; and those who spend 4 (\bar{X} : 4.23) hours stated it having a stronger influence, compared to those spending 2 (\bar{X} : 3.72) hours.

Discussion and Conclusion

The results from Table 2 revealed that the participants use social media mostly to communicate. In a study on university students, Koçer (2012) stated that students use social media mostly to contact their friends; thus, these findings are similar to our findings since people usually prefer social media to stay in contact with each other. Likewise, Whiting and Williams (2013) expressed in their study that people use social media mostly for social interaction. However, unlike our study, Başol and Çömlekçi (2019) reported in their study that individuals use social media mostly for entertainment. Today, social media is used for communication, entertainment, and discovering new things. In our study, most of the participants stated that they use social media to communicate. Students use social media to communicate for preparing for exams and etc. It is natural for this result to arise since the participants of this study were students.

The data from Table 3 presented that the social media account the participants use the most is Instagram. Contrary to our results, Greenwood, Duggan and Perrin, (2016) expressed in their study that individuals' most used social media account is Facebook. Also, Anderson and Jiang (2018) stated in their study that the social media account young individuals use the most is Snapchat. In their study, Deniz and Ünal (2020) obtained findings on the use of social media by generations X, Y, and Z, and these findings revealed that generation X uses Facebook the most while generations Y and Z use Instagram the most. It is an expected result that individuals born between 1965-1980, who are called generation X today, use Facebook more often because Facebook was created before Instagram and Twitter. Today, in addition, generations Y and Z know all things about social media more than generation X does. Thus, considering generations Y and Z, it is not surprising that Instagram is the most used social media.

Prabhakararao (2016) reported in a study that social media is increasingly used by young individuals, it affects individuals' school life, their relationships with people, and their thoughts, and excessive use of social media is "a behavioral addiction." This study's findings and our study's results are seen to be similar. Social media is being more and more used, especially by young people. Thus, it is possible for young people to be unable to communicate with people, to exhibit asocial behaviors, and to have various behavioral disorders in daily and school life.

The data from Table 4 presented that the participants to state that they use social media to meet with their friends. Regarding this issue, Bullen, Echenique, and Molias (2016) stated in their study that the internet and social media have changed the way people communicate and that people can be in constant communication with their friends via social media. Today, people can contact their distant friends and family via phone and social media. Also, through social media, people can instantly see what their friends are doing.

The participants expressed that social media has a strong influence on people and they are affected by the news they see on social media although the participants think that social media does not reflect reality. Because children and adolescents use social media more frequently, and so it is only natural that they are quickly influenced by the news they see. In addition to this study, Shoenebeck (2014) presented in a study that social media is used too much and the participants in Shoenebeck's study thought that social media distance

people from real life. These results about whether social media reflects reality and our study's results are similar.

The data from Table 4 presented that the participants stated that they use social media consciously. However, some studies show that people use it unconsciously. For instance, Şahin and Üstüner (2018) stated in their study that unconscious use of social media and the internet causes both addiction and negative behaviors and that students excessively use social media to share things. Fulantelli et al. (2021) remarked in their study that social media influences individuals, so, it affects young people's mental health when it is used unconsciously. There is a difference between the previous studies and our findings. The reason why these findings emerged in our study may be due to the fact that young people, especially generation Z, are very self-confident and eager to discover new information. Generation Z, which is open to learning and discovery, may think that they use the internet and social media consciously for these reasons.

The data from Table 4 presented that the participants stated they shared that their families do not interfere to close their social media accounts and social media do not adversely affect their communication with their family. In addition to our study, Butler and Matook (2015) pointed out in their study that social media affects family and kinship relations, and families can control and see their children via the photos shared on social media, even if their children are far away. Joo and Teng (2017) reported in their study that social networks such as Facebook have a positive effect on family members and help create a better, more harmonious society. Parents can see and control their children through social media. In addition, as social media tools such as Instagram and WhatsApp are shared, interaction within the family increases. Therefore, it is normal for similar results to be found between these studies and our study.

According to Table 4, the participants were not sure about the items such as sharing on social media, addiction, wasting time, its harm to communication, the effects of events they see on social media, and social media's negative effects on family communication. However, some studies have revealed findings that do not coincide with our findings. For instance, Raut and Patil (2016) noted in their study that in order to minimize social media's negative effects on individuals, it is necessary to provide sufficient time for face-to-face communication and to pay attention to communicating with the family in their free time. In a 2019 dated study, it was revealed that the self-esteem of individuals decreases as the addiction to social media increases, which negatively affects both mental health and academic performance (Hou, Jiang, Song, Xiong & Wang, 2019). In a study conducted in 2020, it was uncovered that adolescent girls who spend more than 2 hours a day on social media are more prone to suicide and depression (Abi-Jaoude, Naylor & Pignatiello, 2020). Based on these studies, especially adolescents can admire the people they see on social media, which can negatively affect their self-esteem and mental health. This can make young people and adolescents unconsciously both addicted to social media and negatively affect family interaction.

The data from Table 4 presented that the participants stated they always check their social media accounts when they go online, but also, their social media accounts take up a large part of their time. In addition to this, the participants stated that the frequency of checking their social media accounts increased as the Internet access frequency increased. In addition to this data, according to a 2016 dated study, most of the students expressed that they frequently check their social media accounts while studying and this negatively affects their academic performance and ability to focus on the task (Patil & Raut, 2016). Similarly, according to a 2016 dated study, individuals shared that after checking their social media accounts, fear, anxiety, and anger problems may arise and these negative attitudes may increase temporarily (Abel, Buff & Burr, 2016). Furthermore, in a study conducted in 2017, it was claimed that having more than one social media account and frequently checking these accounts may cause adolescents to feel lonely (Barry, Briggs, Lindsey, Reiter & Sidoti, 2017). Based on these studies, constantly checking social media has a negative impact on the individual. frequently accessing and checking social media can both affect the psychology of individuals negatively and

this situation can turn into addiction and take up the individual's time and the individual cannot do the work he/she needs to do on time. Therefore, it is normal for these situations to occur in the findings.

Suggestions

1. Only students participated in this study and they stated that they use social media mostly to communicate. The sample group can be expanded. The sample group can be expanded to investigate why individuals use social media.
2. The association between social media addiction and behavioral disorders can be investigated in more detail.
3. The effects of parents monitoring social media accounts on adolescents can be examined in more detail.
4. It can be investigated whether people of all age groups use social media consciously and what should be done to make them use it consciously.
5. It can be investigated social media use of generation X, Y, and Z.
6. Social media use and self-esteem can be investigated for adolescents and adults.

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Pedagogical Othering and Suicide: A Preventive Model Proposal with Machine Learning Approaches

Research Article

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ABSTRACT

The purpose of this study is to investigate how educational ecologies, which have become more diverse as a result of recent global social mobility, might lead to pedagogical marginalization and cultural conflicts like suicide. The goal of the study is to put out a preventative approach that will lessen the suicide rate and other unintended consequences of pedagogical marginalization. To do this, machine learning techniques were used to test a model to predict students' suicidal tendencies, which is one of the potential indications of multicultural educational ecologies. The scanning technique was used to conduct the study, which was created within the parameters of the quantitative paradigm. 50 high school and 268 university students, of whom 25% were domestic, made up the research sample. Data collected from the sample via the questionnaire was used to construct a dataset for automated analysis. Each record in the dataset has a total of 26 numerical variables and 25 category variables. The prediction model was created by the analysis of the data using the machine learning techniques Decision Trees (DT), Naive Bayes (NB), Support Vector Machines (SVM), k-Nearest Neighbor (k-NN), and Artificial Neural Networks (ANN). The 10-fold cross-validation approach was utilized to conduct experiments, and several performance assessment measures were applied. Testing the mentioned model produced the following outcomes: In multicultural educational environments, the proposed approach was able to predict students' suicidal tendencies with great accuracy. According to research, social isolation, depression, anxiety, and stress are the main risk factors for student suicide. As a consequence, it has been determined that the research model may significantly advance education's core goal of "preparing the individual for a quality life." On the other hand, this model, which is an actual consequence of the interaction between technology and education, can offer significant benefits for psychological counseling and preventive guidance services to students at risk by foreseeing the triggers of suicidal tendencies, which can be a negative outcome of multicultural educational ecologies. As a result, the school, teachers, and parents have the chance to adopt the required safety measures, which can make the school a more livable ecosystem. The digital pedagogy of the twenty-first century also demands that machine learning and educational issues be combined. Since digital pedagogy implies not just the use of technology in education and training but also the entire technologicalization of pedagogy.

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Multicultural education ecology, Pedagogical marginalization, Cultural conflict, Suicide symptom, Digital pedagogy, Machine learning.

Introduction

Current socioeconomic and sociopolitical developments have made social mobility, which has always been a part of human history, a reality of education. This has also been greatly influenced by the increasing globalization of higher education (Rizvi, 2010). As a result, educational settings are rapidly beginning to resemble multiethnic, mixed-race, and diverse ecologies. In nations like the USA, Japan, Germany, England, and China, students from all over the world often attend higher education together with their own cultures (Zdemir & Lhan, 2021). Despite the benefits it provides in terms of diversity and global citizenship, this circumstance has the potential to cause certain psychological and social issues through educational and cultural marginalization. These issues may be considered a struggle between the global and local levels of government when taking into account the economic and technical implications of the aforementioned nations. Because of this, international students are frequently forced to loosen their local identities (Ohmae, 1990 as referenced in Tubin, D., Lapidot). This is because of the global identity, which is economically and technologically powerful. The language of the dominant culture is employed as an effective instrument in this imposition in addition to technical and economic dominance (Kayntu, 2017). It is crucial that the phenomena of foreign students, which is a reality of today's higher education, be managed correctly in terms of pedagogy to prevent these disputes and impositions from causing psychological and social difficulties. Because it may increase the risk of global homogeneity when international students reset their local identities to avoid marginalization (Durdu, 2020). On the other side, this puts a stop to humanity's aspiration for a world in which everyone lives in harmony. Building a worldwide scientific culture that respects local identities seems crucial at this moment. This entails establishing a scientifically based global framework for knowledge, learning, understanding, and interpretation that respects local cultures. It develops a scientific cultural identity that reflects both local and global harmony, to put it more exactly. One of the best ways to do this is through multicultural higher education. Undoubtedly, higher education resolves the global-local conflict and does not discriminate against international students.

Two approaches may be used to examine the phenomena of global higher education and international students, which has the potential to be a significant academic issue in the modern day. The first viewpoint, which expresses the positive viewpoint, claims that global higher education entails pedagogical richness for the creation of a scientific global identity. Because learning, which is the basis for education (Ataizi & Şimşek, 2000), is connected to human cognition. The human mind receives a wide variety of signals and stimuli as it develops cognition. In this situation, the addition of international students to educational ecologies might be considered a significant potential for successful learning. For this reason, technical approaches that use the internet to connect students from various parts of the world to the learning environment (classroom, lecture hall) should be pursued.

The second point of view focuses on the psychological problems caused by the many educational ecologies that this study is focused on, under the pressure of pedagogical marginalization and the requirement to reframe local identity. This point of view raises concerns in the areas of education, politics, religion, ethics, and society. Because it is usually from these sources that the poison turns education into dogma by pulling it away from its scientific foundation. These poisons can cause local-global dilemmas in foreign students by overcoming scientific and educational barriers. They primarily do this through emotional violence (Yavuzer, 2011), which starts with stress and endangers mental health and academic performance (Deb et al., 2017). These symptoms might worsen with time and cause unfavorable occurrences like suicide if safeguards are not

followed. Educational institutions are held accountable for this in a big way. Educational institutions must use advisory services that include culturally sensitive support services and counselors with multicultural counseling expertise to carry out this duty (Chow et al., 2020). By implementing programs and activities that affirm other cultures, educational institutions can in this regard encourage a temperate culture at school (Hosseini et al., 2019). Important responsibilities lie on the instructors as the class leader and the school administrators as the leader of the leaders in these contexts, which refers to a multicultural and temperate educational ecology attentive to diversity. These activities, such as mentorship and networking, individualized financial aid, etc., will help integrate students from various cultural backgrounds into contemporary society (Adedoyin and Soykan, 2019). The stress of adjusting to a new culture and navigating cultural differences should not be overlooked as one of the primary sources of stress in multicultural situations (Berry, 2006). A range of symptoms of adjustment stress include feelings of isolation, trouble speaking the language, and a sense of not fitting in with the new surroundings. The sense of helplessness and hopelessness brought on by racism and prejudice that is linked to suicide can be added to this (Garcia & Huang, 2019). These unfavorable behaviors in the context of multicultural education can also result in personal academic failure, which is known to be one of the ways that people commit suicide (Zhang, 2019). All of these pressures harm students' mental health and can lead to anxiety, depression, and other issues. Over time, these issues may cause sadness and eventually result in suicide (Leong & Chou, 2015). Even if the aforementioned administrative, guiding, social, and educational measures are crucial, their impact is little. Because the early warning symptoms of suicide are not always detected by these programs, which are mostly reliant on human observations. Because human observations may be constrained by the structure of the senses and the quantity and quality of the data that informs them. However, it is a pedagogical duty and of utmost significance to identify these pupils as soon as possible. Students' suicidality owing to cultural conflict can be diagnosed to some extent using current educational services based on human observations. In this situation, it is imperative to look for additional or novel approaches to support current human observations. One of these methods may be to use technology, which is the fundamental dynamic of the information age that we are currently living in. Because it is well known that intelligent algorithms, such as machine learning, are used today in both law and medicine to supplement and complete the limitations of human observation and decision-making, and that this produces excellent results (Keleş, 2022; Turan, Kemalolu, & Küçükşille, 2020). This was accomplished using a dataset (Nguyen, 2019) that details the mental health and help-seeking behaviors of both local and international students at an international institution in Japan.

In the study, this dataset was evaluated using machine learning, and attempts were made to identify suicidal pupils in advance. In this regard, this research can offer an innovative perspective on educational research, especially in the context of data use and methodology, as it aims to provide a preventive model that can pre-diagnose students' suicidal tendencies, which can be a symptom of multicultural higher education ecologies. Because education and digital technologies are so entwined in today's society, there is an unavoidable need for novel analysis tools, like machine learning, in addition to conventional statistical procedures.

Materials and Methods

The quantitative paradigm served as the foundation for the design of this study, which was conducted using the screening model. The quantitative paradigm is a positivist approach that emphasizes objective data and information above interpretations in the context of digitalization (Yıldırım & Şimşek, 2016). The survey methodology asks, "What is it?" while gathering information to define a present circumstance. These investigations are quantitative and aim to provide a response (Karasar, 2018: 77). Students from outside and inside Japan who are enrolled in higher education and international high schools make up the study's population. In the sample, it is the data set of 50 high school students, 25% of which is local, and a total of 268 university students (Nguyen, 2019). This dataset was analyzed by machine learning to predict suicide training.

The stages followed in the analysis in machine learning are given below: The dataset contains a total of 268 records, including the patient health questionnaire (PHQ-9), adjustment stress scale (ASS), social connection scale (SCS), and general health help-seeking questionnaire (GHSQ). It was collected through a questionnaire designed using elements of 4 standard measures. Various supervised classification algorithms such as NB, DT, SVM, k-NN, and ANN are considered for estimation purposes (Sengur, 2020). NB is a probability algorithm based on Bayes' theorem and assumes that the features are independent of each other. DT is a tree-based algorithm that recursively splits data into subsets based on their properties to create a tree-like model. SVM is a linear algorithm that separates classes by finding the hyperplane that creates the maximum margin between them. K-NN is a non-parametric algorithm that does not make any assumptions about the underlying distribution of the data. ANN is a set of algorithms inspired by the structure and function of the human brain. They consist of multiple layers of nodes that learn to map inputs to outputs. In this study, a binary classification case was used. In binary classification, the task is done to classify the samples into two classes called positive (P) and negative (N). Several performance measures such as accuracy, sensitivity, specificity, and F1-score can be used to evaluate the performance of this classification model.

Supervised data classification methods

Supervised data classification is a widely used technique in machine learning, where the objective is to predict a categorical output variable based on a set of input features (Bishop, 2006). The process involves the use of a labeled dataset, where the inputs and outputs are provided to the model during the training phase. The model learns from these examples and can then make predictions on new, unseen data. Supervised classification has many applications, including image recognition, sentiment analysis, and fraud detection. One of the most widely used supervised classification algorithms is the decision tree, which uses a series of binary decisions to classify input into one of several categories. Decision trees are simple to interpret and can handle both numerical and categorical data. Another popular algorithm is the support vector machine (SVM), which uses a boundary called a hyperplane to separate the data into different classes. SVMs are especially useful for linearly separable data and can be used for both binary and multi-class classification tasks. One of the main advantages of supervised classification is its ability to make accurate predictions on new, unseen data. By training the model on labeled data, the model can learn to generalize to new data that it has not seen before. However, it is essential to have high-quality labeled data to train the model, which can be time-consuming and expensive. Besides, one of the challenges of supervised classification is overfitting, where the model becomes too complex and fits the training data too closely, resulting in poor generalization of new data. To address this issue, various regularization techniques can be used, such as L1 and L2 regularization, which penalize the model for having too many features or large weights.

Naïve Bayes

Naïve Bayes is a probabilistic machine learning algorithm based on Bayes' theorem, which assumes that the probability of a particular outcome given certain inputs can be calculated from the conditional probabilities of those inputs (McCallum, 1998). The Naïve Bayes algorithm is called "naïve" because it makes the simplifying assumption that the input variables are independent of each other, which allows for efficient computation of the conditional probabilities (Rish, 2001). Naïve Bayes is often used for classification tasks, where the goal is to assign input data to one of several predefined classes based on the values of its attributes. There are several variants of Naïve Bayes, including Gaussian Naïve Bayes, which assumes that the input variables are normally distributed, and Multinomial Naïve Bayes, which is used for text classification tasks where the input variables are counts of word occurrences. Despite its simplifying assumptions, Naïve Bayes has been shown to perform well in many real-world applications, especially when the input variables are discrete or categorical. It is also relatively fast and requires minimal training data compared to other machine learning algorithms.

Decision Trees

Decision trees are a popular and effective machine learning algorithm used in a variety of applications, including data mining, pattern recognition, and predictive modeling (Kumar et al., 2018). A decision tree is a flowchart-like structure that maps out possible outcomes and their probabilities, based on input variables and their relationships. One of the key advantages of decision trees is their ability to handle both categorical and numerical data, making them useful in a wide range of fields (Xu & Guo, 2018). Additionally, decision trees are easy to interpret and can provide insight into the most important factors influencing the outcome. One commonly used algorithm for constructing decision trees is the ID3 algorithm, which uses information gain to determine the best splitting criteria at each node (Kim & Han, 2019). Other popular algorithms include C4.5 and CART, which use different splitting criteria and pruning techniques.

Support Vector Machines

Support Vector Machines (SVMs) are a popular machine learning algorithm that can be used for both classification and regression tasks. SVMs aim to find the best possible hyperplane that separates data into distinct classes or predicts a continuous value (Smola, 2004). The basic idea behind SVMs is to find the hyperplane that maximizes the margin between the two classes. The margin is the distance between the hyperplane and the closest data points from each class. The SVM algorithm seeks to find the hyperplane that maximizes this margin, which helps to increase the generalization ability of the model. SVMs can handle both linear and non-linear separable data by using different types of kernels. Kernel functions transform the input data into a higher-dimensional space where linear separation is possible. Common kernel functions include linear, polynomial, and radial basis functions (RBF). SVMs have been widely used in various applications, including image and text classification, bioinformatics, and finance.

k-Nearest Neighborhood

K-nearest neighbor (k-NN) is a popular machine-learning algorithm for both classification and regression tasks (He et al. 2018). It is a non-parametric algorithm that does not make any assumptions about the underlying data distribution (Alpaydin, 2010). The k-NN algorithm works by finding the k closest data points in the training set to a given test point and using their class labels or values to predict the label or value of the test point. The choice of the value of k is an important parameter in the k-NN algorithm. A smaller value of k can lead to overfitting, while a larger value of k can lead to underfitting. The value of k can be chosen using cross-validation techniques to find the value that leads to the best performance on a validation set. k-NN has been used in various applications such as image recognition and recommendation systems. One advantage of k-NN is that it is easy to implement and does not require any training, making it suitable for small datasets. However, its performance can be impacted by the curse of dimensionality, where the number of features increases exponentially with the dimensionality of the data, making it difficult to find the k nearest neighbors in high-dimensional data.

Neural Networks

Neural networks (NN) are a type of machine learning algorithm that is modeled after the structure and function of the human brain (Haykin, 1999). NN is composed of interconnected nodes or "neurons" that process input data and produce output predictions (LeCun et al., 2015). The strength of NN lies in their ability to learn complex and nonlinear relationships between input and output variables, which makes them well-suited for a wide range of applications in image recognition, natural language processing, and control systems. One of the key components of NN is the activation function, which determines the output of each neuron based on its input. Popular activation functions include sigmoid, ReLU, and softmax, each with its advantages and disadvantages depending on the task at hand. Another important aspect of NN is the optimization algorithm used to train the model, such as gradient descent or Adam, which adjusts the weights of the neurons

to minimize the error between the predicted and actual output. Despite their effectiveness, NN also has some drawbacks, such as the risk of overfitting and the need for large amounts of data to avoid underfitting. Additionally, the interpretability of NN can be limited, as the learned features are often difficult to understand or explain.

Data and Analysis

Dataset

The dataset consists of 268 records from local and international students at a Japanese international institution (Nguyen et al., 2019). In a multicultural setting, this dataset is utilized to investigate the mental health statuses and help-seeking behaviors of both local and overseas students. The questionnaire has multiple-choice questions for every response. There were three primary groupings of questions namely demographic information, mental health status information, and help-seeking behaviors, respectively. There are a total of 25 categorical variables and 26 numerical variables for each record. The demographic information contains various items namely the students' home country, gender, academic level, duration of stay, language skills, and religion. In the collected dataset, 75% of participants were from outside the country, compared to 25% from within it. For mental health status measurement, the patient health questionnaire was considered and nine questions have been asked to the participants based on a 4-point Likert scale. The patient health questionnaire is generally used to measure the depression level and other medical settings. The acculturative stress scale was used to assess the degree of acculturation among overseas students. The seven categories on the measure are perceived prejudice, homesickness, perceived hostility, fear, culture shock, guilt, and others. A 5-point Likert scale was used by participants to provide feedback. The items on the acculturative stress scale also include eight number variables. The Lee and Robins Social Connectedness measure was the instrument used to gauge an individual's emotional closeness or distance from others. Eight items made up the questionnaire, and each one was graded on a 6-point Likert scale. The General Health Help-Seeking Questionnaire, whose contents are simple to adjust for the appropriate purpose, was used to assess the help-seeking behaviors of students. Ten numerical variables and ten category variables were made using the General Health Help-Seeking Questionnaire. Other students choose not to respond when asked if they would be open to using the Internet for assistance.

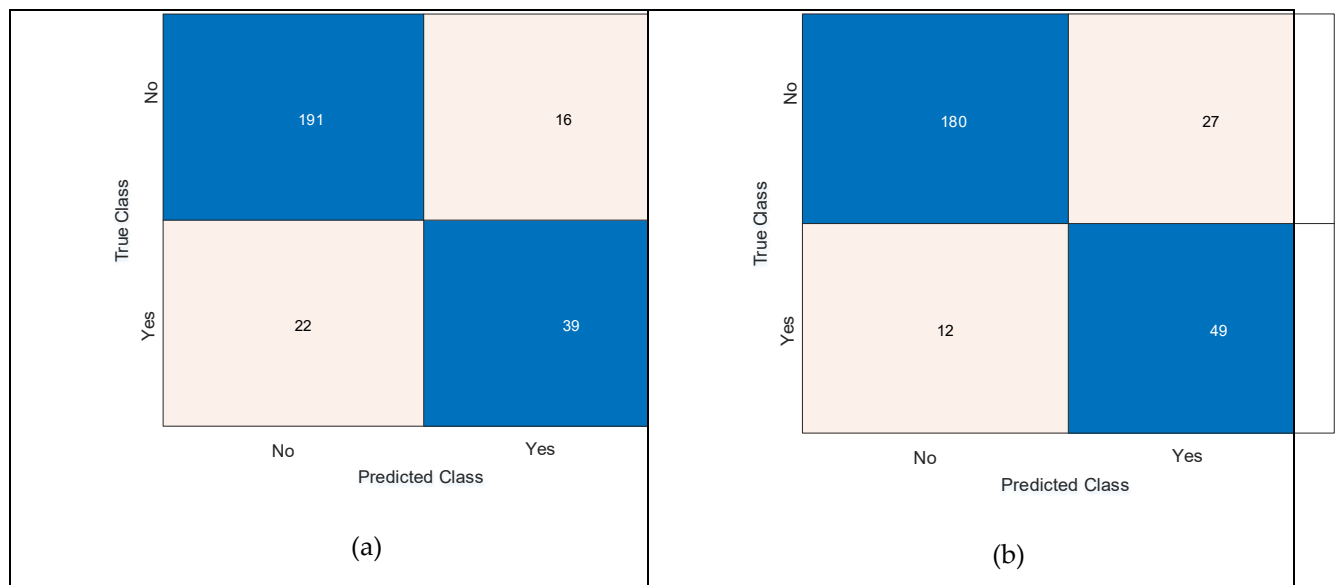
Performance evaluation

As mentioned in the dataset description, there are a total of 268 records and each record has 51 items. As the suicide item was considered as the output, there were a total of 50 items as input to the proposed approach. Besides, 3 items have incomplete records, and those items were also removed. Finally, 47 items were considered as input to the proposed approach. A 10-fold cross-validation method was used in performance evaluation and hyperparameter optimization was used for determining the parameters of each mentioned classifier. As mentioned earlier, average accuracy, sensitivity, specificity, and F1-score metrics were used in the quantitative analysis of the experimental results. Table 1 shows the obtained performance evaluation metrics for the examined classifiers based on the 10-fold cross-validation test.

Table 1. The performance evaluation metrics for the examined classifiers

	Accuracy (%)	Sensitivity (%)	Specificity (%)	F1-score (%)
Optimized DT	85.82	92.27	63.93	90.95
Optimized NB	85.44	86.95	80.32	90.22
Optimized SVM	86.19	96.61	50.82	91.53
Optimized kNN	85.44	87.44	78.68	90.27
Optimized NN	86.94	92.27	68.85	91.60

As seen in Table 1, while the rows show the achievements of each classifier, the columns show the performance evaluation metrics, respectively. According to the accuracy scores, the optimized NN classifier produced the highest accuracy score which was 86.94%, and the second-best accuracy score 86.19% was obtained by the optimized SVM classifier. While the optimized DT classifier produced an 85.82% accuracy score, the optimized NB and kNN methods produced an identical 85.44% accuracy score. When the achievements of the classifiers were evaluated according to the sensitivity metric, it was seen that the highest sensitivity score 96.61% was produced by the optimized SVM, and the second best sensitivity score 92.27% was produced by the optimized NN and DT approaches, respectively. Optimized kNN and NB approaches produced 87.44% and 86.95%, respectively. The produced specificity scores were also given in the 4th column of Table 1. As seen, the specificity scores were generally low when other achievement evaluation metrics were considered. While the highest specificity score 80.32% was produced by the optimized NB classifier, the lowest specificity score 50.82% was produced by the optimized SVM method. 78.68%, 68.85%, and 63.93% specificity scores were produced by the optimized NN, DT, and kNN methods respectively. Lastly, the produced F1-scores were generally high where all F1-scores were over 90%. 91.60%, 91.53%, 90.95%, 90.27%, and 90.22% F1-score values were produced by the optimized NN, SVM, DT, kNN, and NB classifiers, respectively. Besides, the obtained cumulative confusion matrixes over 10-fold cross-validation for each classifier were given in Fig. 1. The cumulative confusion matrixes that were located in cells a, b, c, d, and e of Fig. 1, were for optimized DT, NB, SVM, kNN and NN classifiers, respectively. The performance evaluation metrics, which were given in Table 1, were calculated according to the cumulative confusion matrixes that were given in Fig. 1. As seen in Fig. 1, 38 samples were incorrectly identified using the optimized DT classifier, whereas 230 samples were correctly classified. 39 of the samples were incorrectly recognized by the optimized NB classifier, which properly identified 229 of the samples. Similar to the optimized DT classifier, optimized SVM yielded 230 properly classified samples. 38 of the samples were incorrectly classified as well. Optimized kNN also classified 229 of the samples correctly and 39 samples were wrongly classified. Lastly, the optimized NN produced 233 correctly classified samples, and 35 of the samples were detected wrongly.



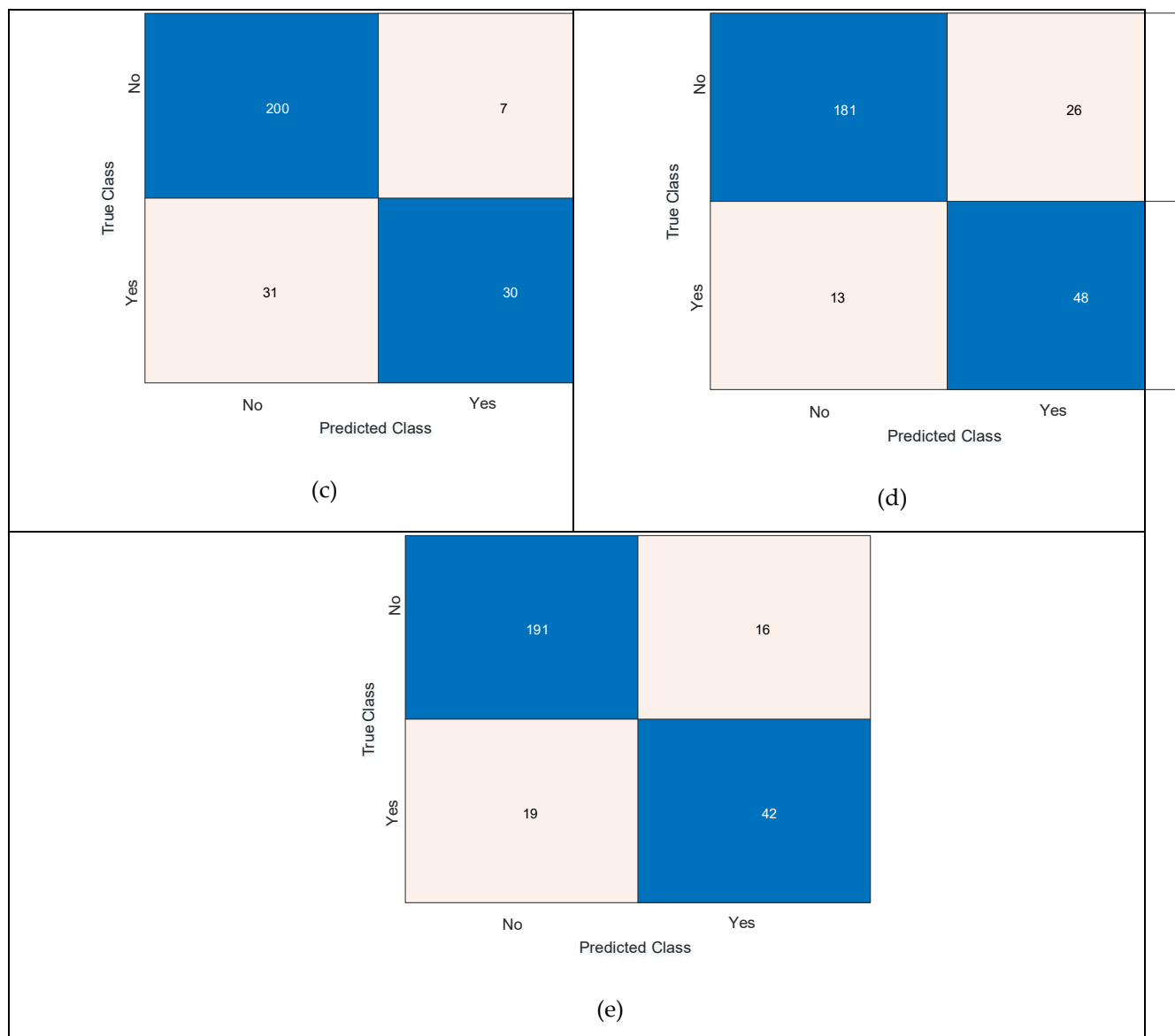


Fig. 1. The obtained cumulative confusion matrixes for each classifier a) Optimized DT, b) Optimized NB, c) Optimized SVM, d) Optimized kNN, and e) Optimized NN

The experimental works were also carried out to predict the students' suicidal tendencies based on the data of mental health status information, and help-seeking behaviors, respectively. For the data on mental health status, 13 items were used as input, and obtained results were given in both Table 2 and Fig. 2, respectively.

Table 2. The classification performance metrics for the data of mental health status information

	Accuracy (%)	Sensitivity (%)	Specificity (%)	F1-score (%)
Optimized DT	85.07	98.55	39.34	91.07
Optimized NB	80.97	83.09	73.77	87.09
Optimized SVM	84.70	94.20	52.46	90.49
Optimized kNN	83.96	92.75	54.10	89.93
Optimized NN	85.07	91.30	63.93	90.43

As seen in Table 2, the best accuracy scores of 85.07% were obtained for the optimized DT and NN classifiers with the data of mental health status information. The worst accuracy score 80.97% was produced

by the optimized NB classifier. The best sensitivity score of 98.55% was produced by the optimized DT classifier and the best specificity score of 73.77% was produced by the optimized NB classifier. The optimized DT classifier also produced the best 91.07% average F1-score value.

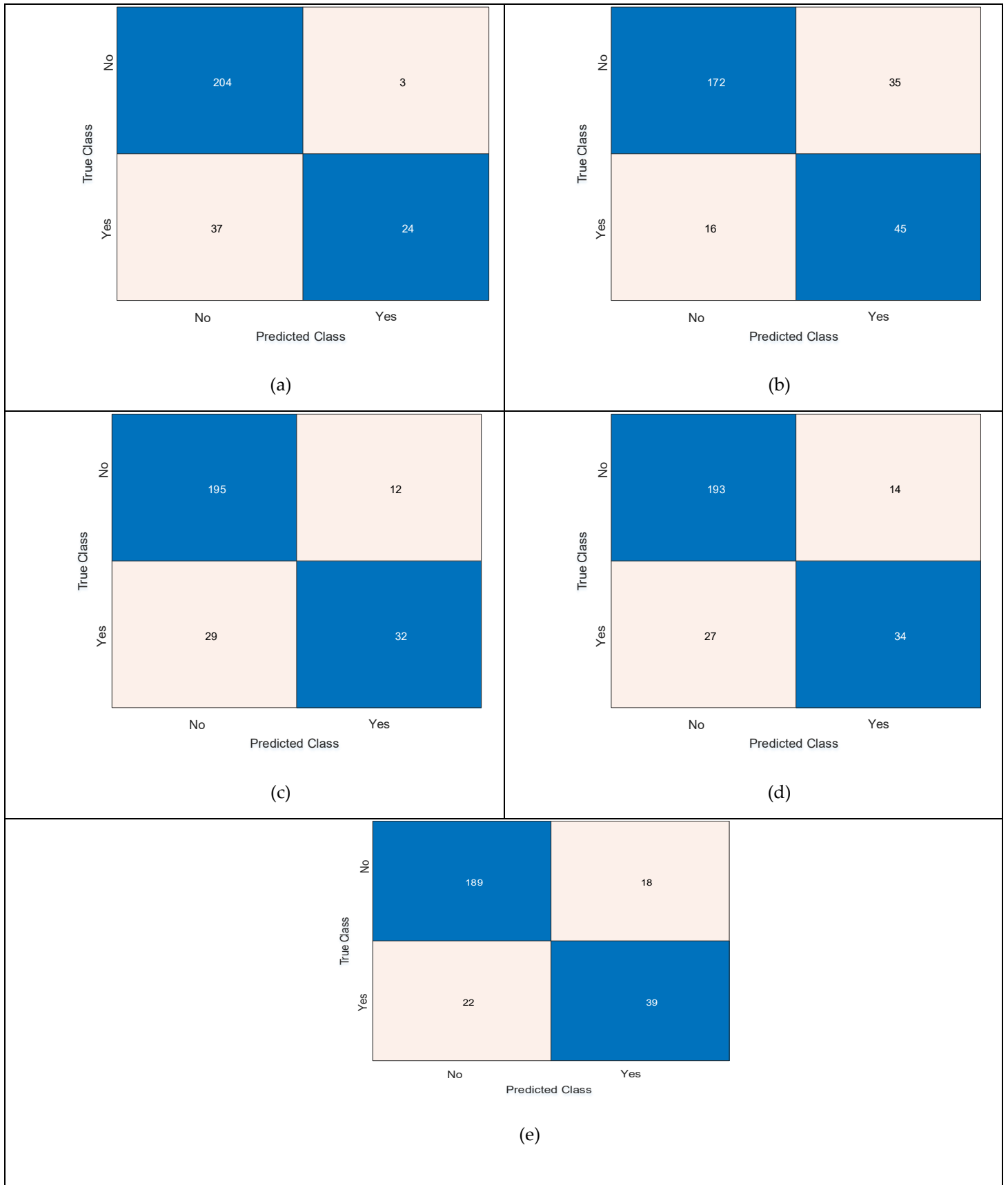


Fig. 2. The obtained cumulative confusion matrices for the data of mental health status information a) Optimized DT, b) Optimized NB, c) Optimized SVM, d) Optimized kNN, and e) Optimized NN

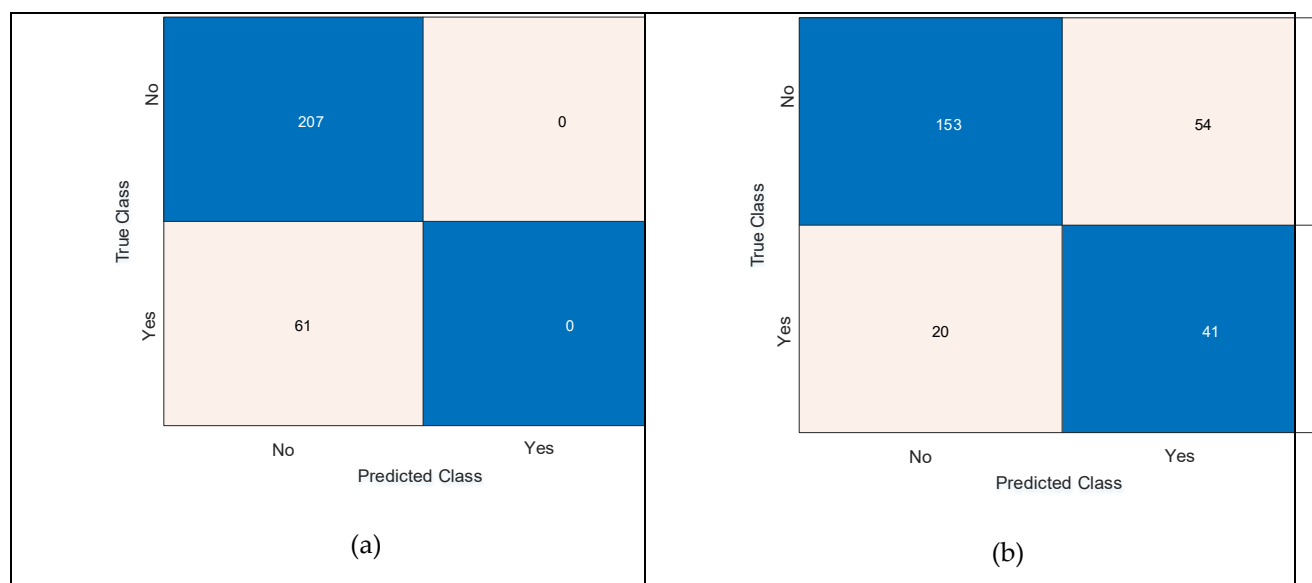
Fig.2 shows the obtained cumulative confusion matrixes for the data of mental health status information. Table 2 was also constructed based on the cumulative confusion matrixes that were depicted in Fig. 2. Similar to Table 2, as seen in Fig. 2 (a) and (e), the optimized DT and NN classifiers wrongly classified 40 of the input samples. Similarly, optimized NB, SVM, and kNN classifiers missed 51, 41, and 41 of the samples, respectively.

Lastly, an experiment was conducted for validating the relationship between the students' help-seeking behaviors and their suicidal tendencies. To this end, the help-seeking behaviors data was used as input which has 22 items. The obtained results were given in Table 3 and Fig. 3, respectively. As seen in Table 3, the accuracy scores for help-seeking behaviors data were in the range of 72.38% and 78.35%. While the highest accuracy score 78.35% was produced by the optimized kNN classifier. In addition, for optimized DT and SVM classifiers, the sensitivity scores were 100% and the specificity scores were 0%. These situations can be seen in Fig. 3 (a) and (c). A similar situation can be seen for the optimized NN classifier where the sensitivity score was 98.55% and the specificity score was 0.08% respectively. The calculated F1-scores for the last experiment were in the last column of Fig. 3. As seen, the calculated F1-scores were between 80.52% and 87.36%, respectively.

Table 3. The classification performance metrics for the data of help-seeking behaviors

	Accuracy (%)	Sensitivity (%)	Specificity (%)	F1-score (%)
Optimized DT	77.23	100	0	80.52
Optimized NB	72.38	73.91	67.21	87.09
Optimized SVM	77.23	100	0	87.15
Optimized kNN	78.35	95.65	19.67	87.22
Optimized NN	77.98	98.55	0.08	87.36

Fig.3 shows the obtained cumulative confusion matrixes for the data of help-seeking behaviors. Table 3 was also constructed based on the cumulative confusion matrixes that were depicted in Fig. 3. As mentioned earlier, the optimized DT and SVM classifiers wrongly classified 61 of the input samples. In other words, all samples in the 'YES' class (suicidal tendency positive) were wrongly classified as the 'NO' class (suicidal tendency negative). The optimized NB classifier produced 194 true classifications and 74 false predictions. Optimized kNN and NN classifiers missed 58 and 59 of the samples, and 210 and 209 of the samples were correctly classified, respectively.



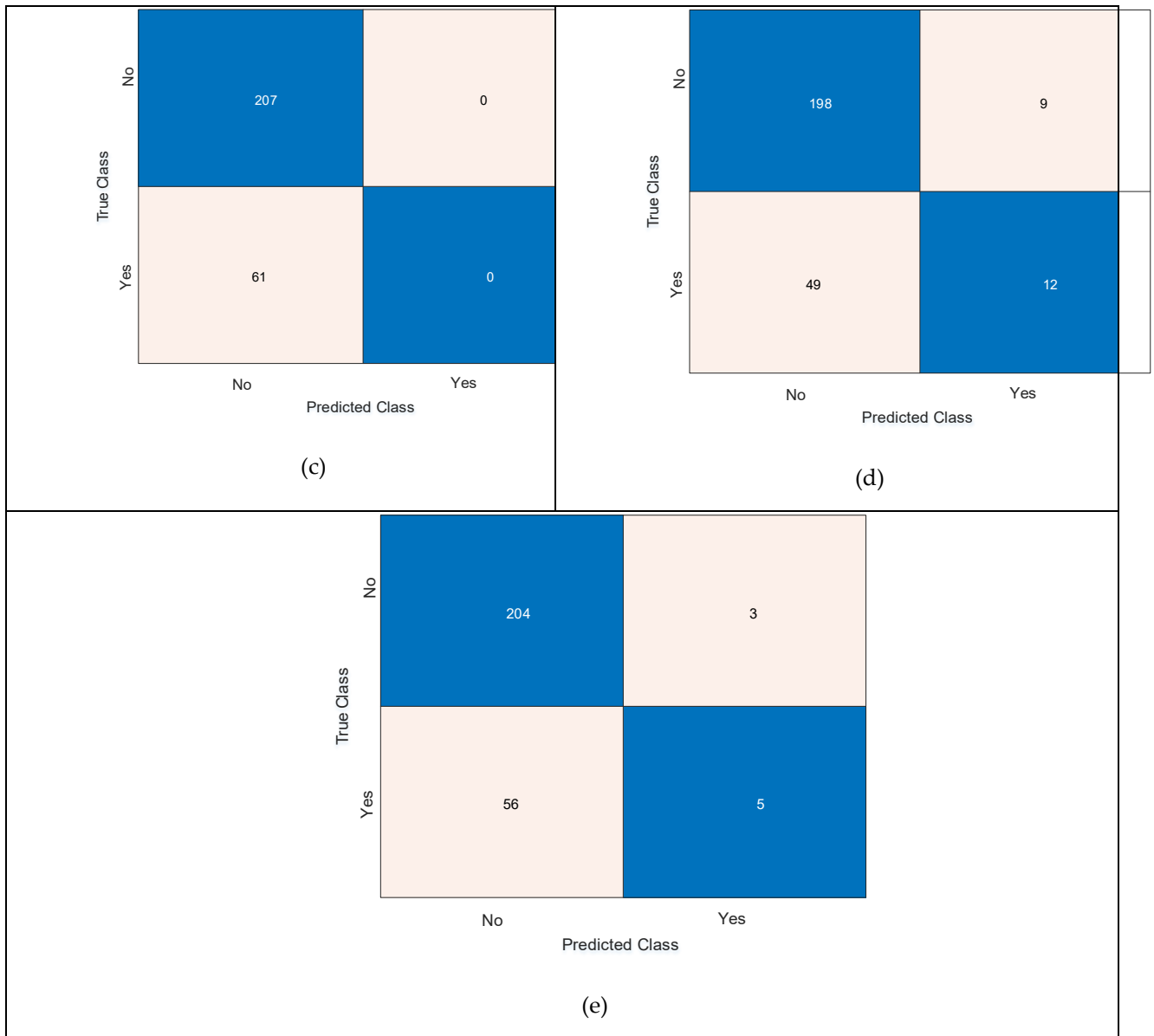


Fig. 3. The obtained cumulative confusion matrixes for the data of help-seeking behaviors a) Optimized DT, b) Optimized NB, c) Optimized SVM, d) Optimized kNN, and e) Optimized NN

Discussions

In this paper, machine learning approaches were used to predict the students’ suicidal tendencies in a multicultural academic environment. The main aim of this study was to produce an artificial intelligence-based warning system, which checks the students’ mental health status, for school administrators in universities or high schools where student diversity is high. Developing a machine learning-based warning system for checking the mental health status of students in high schools and universities with diverse student populations is a complex task. Here are the steps you can follow to develop such a system:

- 1- Data collection: To build a machine learning-based warning system, data is needed on student mental health. This data can be gathered through surveys, interviews, and other assessment tools. It is important to ensure that the data collected is representative of the student population and includes a range of mental health issues.
- 2- Identify relevant features: Once the data is gathered, the relevant features are needed to identify that can be used to predict mental health issues. These features can include demographic information, academic performance, social media activity, and other relevant factors.

- 3- Choose a machine learning algorithm: Many different machine learning algorithms can be used to predict mental health issues. The choice of algorithm will depend on the specific problem you are trying to solve, the size and complexity of your dataset, and other factors.
- 4- Train the model: After selecting an algorithm, a training phase based on the selected model is needed by using the dataset. This involves dividing the data into training and validation sets and using the training set to teach the model how to predict mental health issues.
- 5- Test the model: Once the model has been trained, you need to test it to ensure that it can accurately predict mental health issues. This involves using a separate test dataset to evaluate the performance of the model.
- 6- Deploy the model: After testing the model, you can deploy it in a production environment where it can be used to monitor student mental health. This can be done by integrating the model into an existing student information system or by creating a standalone application.
- 7- Monitor and update the model: Once the model has been deployed, it is important to monitor its performance and update it as needed. This can involve retraining the model with new data or fine-tuning its parameters to improve its accuracy.

Conclusion

In this study, machine learning techniques are used to predict students' tendency for suicide in a multicultural academic setting. It is a difficult and delicate endeavor to predict a student's propensity for suicide, one that calls for careful evaluation of many different elements. This endeavor is made more difficult by a multicultural learning environment because cultural variances and backgrounds might affect one's mental health and well-being. To achieve this, a dataset that details the mental health and help-seeking behaviors of both domestic and international students at an international institution in Japan is utilized to predict students' tendency for suicide. Three experiments were conducted to the evaluation of the effect of the questionnaires' items on prediction of the suicidal tendency prediction. From these experiments, the following conclusions were inferred;

1-) The dataset that was constructed based on the various questionnaires for the students in a multicultural environment was quite efficient for the evaluation of their mental health status. In other words, by using the whole dataset, the prediction of the students' suicidal tendencies was more accurate than the achievements of the other scenarios.

2-) The mental health status-based prediction also produced considerable fine results.

3-) The help-seeking behaviors-based prediction produced considerably worse results than the first and second experiments' achievements.

Overall, developing a machine learning-based warning system for checking the mental health status of students in high schools and universities with diverse student populations is a complex task that requires careful planning, data gathering, and model development. However, if done correctly, such a system can be a valuable tool for school administrators in identifying and addressing mental health issues among their students. School stakeholders and policy makers contribute to addressing mental health issues in higher education by establishing comprehensive and effective mental health policies that ensure the availability of resources, counseling services, and support systems for students. These policies can also focus on reducing stigma around mental health and promoting awareness.

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Development of a Scale on Teachers' Perspectives on Distance Education during the Covid-19 Period: Validity and Reliability Study

Research Article

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ABSTRACT

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This study aims to develop the "The Scale of Evaluation of Distance Education from Teacher's Perspective in the Covid 19 Era" to examine the effects of the pandemic on education from the perspectives of teachers. The research design employed in this study is the survey design of descriptive research, which is one of the quantitative research methods. The scale items, which were developed through a literature review conducted by the researcher, were administered to teachers working in state schools in Istanbul at different levels (from preschool to secondary education) and in different subject areas. Participant responses were collected voluntarily through an electronic platform. Initially, 1200 individuals were selected for exploratory factor analysis. After removing incomplete or inappropriate responses from the collected data, data analysis was conducted with 8973 participants. Obtaining data from a wide range of participants in the study is important for presenting a general overview of teachers' perspectives nationwide and generating solutions to educational needs. In the study, the structural equation modeling was employed to determine the direction of the effects of the statements constituting the factors and the factors associated with these statements. As a result, a 46-item scale consisting of 9 factors was obtained. The reliability coefficient for the entire scale was .95, while the reliability indices for each factor were as follows: .87 for the digital course content factor, .80 for the teacher competency factor, .89 for the screen dependency factor, .92 for the parent support factor, .93 for the communication processes factor, .92 for the efficient use of the Electronic Education Information System (EBA) factor, .81 for the computer and internet access factor, .87 for the EBA support points factor, and .90 for the compensation of learning losses factor. In future research on distance education, it is recommended to apply this scale, which has established validity and reliability, to teachers working in different cities and regions of the country to examine whether their perspectives vary according to their duty areas. Furthermore, administering the scale to teachers in different subject areas would help reveal differences in perspectives based on subject specialization in future studies.

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Introduction

In the wake of the coronavirus pandemic, we seem to have heard the footsteps of a real revolution in the digital sense. The digital transformation, which was predicted to take place in the evolutionary process, took on a revolutionary character with an unexpected pandemic. A great revolution that took the whole world under its influence in a short time. A new era in which humanity was confined to homes with the slogan of Life Fits Home! A digital transformation, which replaced face-to-face operation with the chaos that nothing would be the same as before, from corporate services to shopping, from education to health and where all areas of life were moved to a virtual space. A sign of a new era in education emerged as students and teachers of all education levels from primary school to graduate education came together in the virtual environment and managed education and training processes. While all education stakeholders experience the chaotic reflections of such rapid change from different perspectives, this digital transformation in education has led to the emergence and multi-faceted analysis of some views that are likely to create a vision for the future. Lectures that are frequently posted in the virtual environment, online learning and teaching processes, digital education materials and applications, and digital literacy skills are the themes that meet the educational needs in the distance education process, create a vision for the future and are analyzed in many ways (Kocayığıt & Uşun, 2020). In addition, the fact that educational institutions in the world were caught unprepared for the pandemic period, as well as pandemic conditions and the differences in opportunities between socio-economically different regions, access status, and digital literacy levels have also brought up discussions on distance education (Mulenga and Marban, 2020; Patricia, 2020). UNESCO (2020) discussed the divergences in digital learning in its report, which was prepared in order to reveal the problems of education conditions both within every country and between countries, regarding access to education and suggestions for solutions during the Covid-19 period (MEB, 2020a). The report highlighted that around 830 million students in the world do not have a computer that they can access outside the school environment and that more than 40% of the students do not have access to the internet.

The transition to distance education has brought along a range of issues that were not as prevalent before, with computer and internet-related access problems being a priority. These problems have manifested themselves in various aspects for all stakeholders involved in distance education, rather than targeting a single group. These issues include online social life, feelings of anxiety and depression, student roles, the online teaching energy and effectiveness of teachers, the ability to use digital platforms, curriculum, work environment, instructional materials, course content, screen dependency, parental support, learning losses, equity of opportunities, social media addiction, and screen and digital game addiction. These issues necessitate interdisciplinary evaluations of this process, as they have become the subject of various studies, considering the dimensions involved.

In the context of the results of the studies on the social lives of students during the pandemic period, users ran short of social activities (Kara, 2020), and experienced problems such as stress, anxiety, and boredom (Korkut Gençalp, 2020; Gömleksiz, Pullu, Baylas, 2022, p. 1336; Türker & Bahceci, 2022, p. 1370-1371)), depression (Lee, Ward, Chang, & Downing, 2020), disorders in sleep patterns, family relational problems, intense loneliness, distraction (Imran, Zeshan, & Pervaiz, 2020; Karataş, 2020), lack of physical activity (Munasinghe et al., 2020), less happiness (Kurtüncü & Kurt, 2020, p. 71), and digital game addiction (Aktaş and Bostancı Daştan, 2021).

In research analyzing students' academic processes during the Covid-19 period, it has been found that distance education, in terms of internet and computer access, has led to disparities in disadvantaged areas,

causing inequality of opportunities (Sözen, 2020; Bennett, Uink, & Cross, 2020; Yirci & Özdemir, 2021). It has been observed that students without computer and internet access have experienced setbacks in their studies (Morgan, 2020; Carrillo & Flores, 2020), while students residing in dormitories have faced difficulties in accessing education (Holcombe, 2020). Insufficiencies in the ability to use digital tools have hindered access to education (Saran, 2020), and motivation issues and learning losses have been identified (Saavedra, 2020). Challenges such as absenteeism, school dropout, and difficulties in assessing remote education have been encountered in online classes and evaluation processes (Koh, Lee, Wong, & Yap, 2020). Moreover, it has been suggested that virtual exams conducted during the assessment process are not reliable and instead, continuous assignments would be more beneficial (Kürtüncü & Kurt, 2020, p. 66). When examining research on the problems faced by teachers during the Covid-19 process, it has been determined that teachers experience the need for development in digital skills (Onyema et al., 2020; Bozkurt, 2021, s. 984), lack of experience in online teaching, difficulties in preparing materials for digital classes (Zhang, Wang, Yang, & Wang, 2020), challenges related to computer and internet access, lack of motivation in delivering online lessons, and reluctance in the teaching process (Purwanto et al., 2020). While it is known that distance education cannot replace face-to-face education in the classroom climate, studies have revealed that distance education is the most viable solution during the pandemic when face-to-face educational activities are not possible (Sindiani et al., 2020). During this process, it has been demonstrated in research that all education stakeholders, especially students and teachers, recognize the effectiveness and importance of face-to-face education, struggle with using technology for lesson comprehension and delivery (Foulger et al., 2017, p. 418), and emphasize the need for the improvement of virtual platforms used for distance education (Sözen & Özil, 2020, p. 418) (Azevedo et al., 2020; Trinidad, 2020; Linden & Gonzalez, 2020).

In research examining the implications of mandatory digital delivery of classes during the pandemic, different perspectives have been presented. The studies have revealed that students are satisfied with the process of distance education (Qazi et al., 2020) and that remote education, regardless of the type of course or level of instruction, is adequate (Koçoğlu, Ulu Kalın, Tekdal, & Yiğen, 2020, p. 2961). Additionally, there are findings indicating that online digital education enhances students' motivation and learning levels (Kang & Zhang, 2020). Other studies on the positive aspects of the Covid-19 period have shown that the use of technology helps individuals in terms of saving time, and space and rapid accessibility, and removes the barriers to accessing information (Mulenga & Marban, 2020; Purwanto et al., 2020). Technology usage skills positively affect students' self-efficacy perceptions, motivation levels, and academic performance (Patricia, 2020). Technology awareness is enhanced in technology and digital education processes (De Paepe, Zhu, & DePryck, 2018). Students also can revisit courses repeatedly (Yolcu, 2020) and meet educational needs through advanced technology (Kocayiğit and Uşun, 2020).

In order to keep up with the relevant digital transformation in education, the Ministry of National Education in Turkey has used EBA (Educational Information Network), which is available for use of students and teachers. The EBA Platform has been designed both as a TV channel and as an Education Information Network where online live lessons are conducted and educational content and assignments are uploaded. It is thought that distance education will contribute to all users through the active use and sharing of many digital data in the content pool and their development in terms of quality and quantity. Studies on the use of EBA platforms and digital education applications during the Covid-19 process have revealed that in-service training activities are needed to improve teachers' ability to use digital education platforms (Kırmızıgül, 2020, p. 288). In addition, it is suggested that teachers should be gradually provided with in-service training activities regarding using information technologies (Can, 2020, p. 30) and digital platforms for support purposes (Yılmaz, Güner, Mutlu, Doğanay, and Yılmaz, 2020, p. 39). Gürer, Tekinarslan, and Yavuzalp (2016) claimed that teachers teaching online courses have positive (course materials, course preparations, course contents, etc.) and negative opinions (internet access and technical infrastructure problems, the learning characteristics

of students, and online course process, etc.). In their study, Kaleli-Yılmaz and Güven (2015) found that in distance education, there is a lack of opportunities for teachers to ask questions outside of class, technical issues arise during lessons, and the block scheduling of classes leads to negative situations in terms of time. Keskin and Özer-Kaya (2020) concluded that students had less and ineffective communication with faculty members, tended to quickly forget what they just learned, and had technical problems. Thus, as is seen in previous studies in Turkey (Yılmaz, Güner, Mutlu, Doğanay and Yılmaz, 2020, p. 25), a considerable number of students fail to fully benefit from distance education activities, causing learning losses, and some teachers fail to actively practice their profession (Can, 2020, p. 43).

The implementation of country-wide vaccination and the change in the course of the pandemic has brought up the need for compensatory education in the summer months (Kara, 2020; Lee, Ward, Chang and Downing, 2020; Imran, Zeshan, and Pervaiz, 2020). The Ministry of National Education (2020) has developed activity contents for the structuring of compensatory education with an interdisciplinary approach. Events have been prepared for the development of student's academic, social-cultural, and physical-sportive skills. Alternative options for conducting such activities are planned in form of face-to-face and online education. While planning student activities according to school levels, parent education has been designed in a manner to include information, guidance, and domestic activities that can be done with children. In this context, as part of the activities planned for the compensation of learning losses with the participation of education stakeholders, options were presented under the themes of Academic Activities, Social-Cultural Activities, and Physical and Sportive Activities (MEB, 2020).

Given that teachers are actively involved in the system and interact with all stakeholders associated with the system, it is believed that teachers can understand their educational processes during the pandemic from the perspectives of their students, parents, colleagues, educational administrators, and other stakeholders. Therefore, in this study, it is deemed important to examine the pandemic from a comprehensive perspective through the eyes of teachers. In this context, it is thought that creating a valid and reliable scale to reveal teachers' perspectives would make a significant contribution to the literature in the field. In this context, scale items were created to describe the process in terms of computer and internet access to EBA points of support, digital education, teacher competence, screen addiction, communication, course materials, effective use of EBA, parent support, and recovery of learning losses. The scale developed through the responses of teachers teaching in pre-schools and primary and secondary schools in Istanbul was aimed at identifying the distance education process from a holistic perspective and in all its aspects. The scale is a valuable source as it possesses a wide scope in terms of content and participant audience, describes the entire process experienced by teachers not only in Istanbul but also in other provinces, and steers teachers, academics, and field experts on topics such as learning losses, digital education processes, parent relations, digital addictions, social anxiety situations, and multi-dimensional education needs.

Method

This research was designed for scale development. The processes experienced in the development of the "The Scale of Evaluation of Distance Education from Teacher's Perspective in the Covid 19 Era" and the characteristics of the study group are presented below. This section provides information about the research design, data collection tool, data analysis method, and data analysis.

Research Design

In this study, a survey design belonging to the descriptive research type, which is a quantitative research method, was used. Descriptive research is used to depict a subject, such as a desired condition, individual, or object, considering the existing conditions related to the topic (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz, & Demirel, 2012). This study aims to develop a scale to describe teachers' perspectives on distance education.

Therefore, it was designed as a survey study. In this survey study, a 5-point Likert-type Scale Development study was conducted for the development of the scale.

Population and Sample of the Research

An appropriate sampling method was used in determining the study group. Convenient sampling is a method of selecting units that are accessible and easy to implement due to limitations in terms of time, money, and labor (Büyüköztürk, Ş. et al., 2021). The fact that the research was carried out with teachers working throughout the province of Istanbul can be expressed as the limitation of the study.

The universe of the study consists of teachers from all districts of Istanbul province. In the scale development study on a comprehensive perspective of distance education during the COVID-19 period, Kline (2016) suggests that a minimum of 200 participants, Cattell (1978) recommends 300-500 participants, and Comrey and Lee (2013) state that there should be more than 300 participants for the application of exploratory factor analysis (EFA), which is a test of adequacy. In this study, preliminary analysis was conducted using data obtained from 1200 individuals for the EFA. After data collection, a total of 8973 participants were included in the study after removing missing data and inappropriate scorings from the dataset. The data analysis for the study was conducted with 8973 participants, which provided acceptable data for the final analysis.

Table 1. Descriptive statistics of demographic information were obtained in the preliminary sample of the study.

Demographic	Groups	N	%
Age	21-30	170	14,17
	31-40	431	35,92
	41-50	427	35,58
	51-60	159	13,25
	61-65	13	1,08
Education	Undergraduate	1019	84,92
	Master	167	13,92
	Doctorate	14	1,17
Branches	Pre-School	23	1,92
	Classroom	695	57,92
	Guidance	37	3,08
	Foreign Language	135	11,25
	Others	310	25,83
Place of Duty	Primary	397	33,08
	Secondary	504	42,00
	Highschool	291	24,25
	Others	8	0,67
Mission time	1-5 years service	153	12,75
	6-10 years service	279	23,25
	11-15 years service	192	16,00
	16-20 years service	185	15,42
	21-25 years service	250	20,83
	26 + years service	141	11,75

As shown in Table 1, the majority of participants fall within the age range of 31-40 and 41-50 years old (35.92% and 35.58%, respectively). When looking at the participants' educational levels, the majority are graduates of undergraduate programs (84.92%). In terms of subject area, it was determined that the highest participation came from primary school teachers (57.92%). The number of participants working in middle

schools was higher than those working in other types of schools (42%). Regarding years of experience, it can be observed that the majority of participants have 6-10 years of teaching experience.

Data Collection Tool

This scale development study was conducted with the aim of determining teachers' perspectives on the educational processes during the Covid-19 pandemic worldwide and developing recommendations from a comprehensive viewpoint. In this study, each item included in the scale was scored using the options "None, Low, Moderate, High, Full." The initial scale consisted of 10 factors and 68 items. Initially, adjustments were made to the scope and appearance validity of the draft scale based on expert opinions. The researcher conducted a literature review and prepared a scale consisting of 10 factors and a total of 68 items. The items were created in a 5-point Likert-type scale format, with response options ranging from (1) None to (5) Full. The scale used to create the data set of the study consisted of 10 components (factors/dimensions) and 68 statements (sub-dimensions) belonging to them. A literature review was made while preparing the scale statements. Information about the scale factors and the number of statements as a result of the preliminary study is shown in Table 2.

Table 2. Factors of the survey scale and items

Factor	Number of statements
Digital course content	7
Teacher competence	9
Screen addiction	8
Course materials	5
Parent support studies	6
Communication processes	5
Effective use of EBA	11
Computer and internet access	4
EBA points of support	7
Recovery of learning losses	6

As seen in Table 2, in the process of developing the scale for the validity and reliability study, the initial version of the scale included 7 items for the "Digital course content" factor, 9 items for the "Teacher competence" factor, 8 items for the "Screen dependency" factor, 5 items for the "Teaching materials" factor, 6 items for the "Parent support activities" factor, 5 items for the "Communication processes" factor, 11 items for the "Effective use of Electronic Education Information System (EBA)" factor, 4 items for the "Computer and internet access" factor, 7 items for the "EBA support points" factor, and 6 items for the "Compensation of learning losses" factor.

Data Analysis Method

Structural equation modeling was used in this study to determine how the scale affects efficacy, validity, and reliability and to what extent the statements affect the factor. In this context, the reliability analysis, exploratory factor analysis, confirmatory factor analysis, and the studies carried out within the structural equation modeling were explained.

Reliability Analysis

Reliability indicates the repeated measurement values of the scale (Malhotra, 2010). Reliability analysis is used to measure the consistency of the survey responses by preparing the survey based on a scale created and used before. Reliability analysis is not applied to variables with nominal or ordinal characteristics such as demographic data included with the scale in the survey. The coefficient used for reliability is Cronbach's alpha

value of the scale. The increase in the reliability of the scale depends on the increase in this value. According to the results obtained within the scope of the reliability study, a prediction was obtained about which statements would be removed from the scale.

Exploratory Factor Analysis

In the scale development process, exploratory factor analysis makes it possible to determine whether the data collected by pre-sampling after the statement and factor configuration provide valid results or not. Thus, exploratory factor analysis was carried out to decide which of the 10 factors determined for the research and 68 statements of these factors would be used. Principal components were chosen as the extraction method to determine how the components would be grouped in the analysis. The rotation method, which provides the formation of matrix tables, was used in a relatively small number of samples (1200), which gave better results (George & Mallery, 2010).

Confirmatory Factor Analysis and Structural Equation Modeling

Confirmatory factor analysis was performed in order to test whether the scale statements and factors worked properly in the sample determined via exploratory factor analysis. The scale consisting of 60 statements determined via exploratory factor analysis and 12 variables to which they were related was tested according to the relevant sample during the scale development stage. As the scale components were found by the principal components method in previous stages, the maximum similarity method was used only to determine the suitability of the scale to the study sample and the component distribution. The rotation method, which provides the formation of matrix tables, differed since the number of samples used in the preliminary study was quite large. In confirmatory factor analysis, Promax was used as the rotation method, as it gives clearer results for the data set of a large number of participants (8973) (George & Mallery, 2010). In the study, structural equation modeling was also used to determine the effect of the factors that made up the scale and the related statements. The maximum similarity method was also used in the factor analysis performed within the scope of modeling.

Findings

Exploratory Factor Analysis

Exploratory factor analysis was performed to determine the construct validity of the prepared draft scale. The KMO value for sampling adequacy was found to be 0.953 (for 68 statements). It can be suggested that as the relevant value gets closer to 1, sampling adequacy gets closer to perfect. The lower limit for this value is 0.6. It is not possible to talk about the sampling adequacy of the scale for values below this value (Hair et al., 2019). In addition, sphericity test results for all scale statements were examined to determine that the data set contained more than one factor. Since the confidence interval of the study is 95%, the significance level of the Bartlett test for sphericity should be less than 0.05 (Bentler, 1990). In this study, the value for all factors was found to be $p=0.000$. In other words, the H_0 hypothesis was not confirmed for the sphericity test and the statements in the scale were divided into separate components (Tabachnick, Fidell, & Ullman, 2007). For this reason, as shown in Table 4, statements were selected according to the matrix distributions obtained after the factor analysis created with all statements for each factor along with exploratory factor analysis performed, and corrections were made regarding the factors and statements that were below acceptable values.

Table 3. KMO test results of factors for all statements (exploratory factor analysis)

Factors	Number of Statements	Sampling Adequacy (KMO)
Digital course content	7	0,873
Teacher competence	9	0,790
Screen addiction	8	0,874
Course materials	5	0,566

Parent support studies	6	0,903
Communication processes	5	0,868
Effective use of EBA	11	0,910
Computer and internet access	4	0,637
EBA points of support	7	0,762
Recovery of learning losses	6	0,865
Total	68	0,953

Among the factors in Table 3, the KMO value showing the sampling adequacy measurement of the course materials component was found to be low ($0.566 < 0.6$). Then, the component that was within acceptable limits but had a low value compared to other factor results was computer and internet access with a score of 0.637. In this case, the statements of these factors were examined first and the statements with the lowest factor loading were excluded from the scale.

According to the data in Table 4, 12 factors that met the Eigen value > 1 condition were formed following the exploratory factor analysis and these factors could explain 70.006% of the variance of the obtained result. It was understood that since this value was over 50%, scale factors were adequate for explaining the change in the result obtained (George & Mallery, 2010).

Table 4. Explained variance values for all statements that changed depending on the factors (68 statements)

C	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	18,262	30,437	30,437	18,262	30,437	30,437	12,739
2	4,093	6,822	37,258	4,093	6,822	37,258	11,237
3	3,790	6,317	43,575	3,790	6,317	43,575	8,969
4	2,684	4,473	48,049	2,684	4,473	48,049	7,799
5	2,314	3,856	51,905	2,314	3,856	51,905	8,058
6	2,123	3,539	55,444	2,123	3,539	55,444	11,942
7	1,891	3,152	58,595	1,891	3,152	58,595	8,767
8	1,726	2,877	61,473	1,726	2,877	61,473	4,892
9	1,525	2,542	64,014	1,525	2,542	64,014	11,046
10	1,402	2,337	66,351	1,402	2,337	66,351	5,059
11	1,164	1,940	68,291	1,164	1,940	68,291	3,900
12	1,029	1,715	70,006	1,029	1,715	70,006	2,779
13	,877	1,461	71,468				
14	,838	1,397	72,865				
15	,805	1,342	74,207				

The statement "I want to receive training on producing digital course contents" belonging to the digital course contents factor, which is one of the scale components, was removed from the scale since it was under a different factor. The statement "I benefited from the online training courses of the provincial/district national education directorates and the ministry in the distance education process" was removed from the scale since it could not be found under the component of teacher competence. Similarly, the items "I informed my students about the screen addiction problem that might occur in the distance education process" and "I informed my parents to keep my students away from screen addiction in the distance education process" belonging to the screen addiction factor were deleted from the scale since they were distributed under different components. In addition, the statements "the textbooks distributed by the Ministry of National Education at

the beginning of the year in the distance education process were sufficient to properly carry out the education and training process" and "I shared the course materials I prepared during the pandemic period with my students through EBA" under the factor of course materials were removed from the scale to avoid confusion since they were under different factors. Finally, the statements "I regularly communicated with my parents in order to better manage the distance education process" belonging to the component of communication processes and "I find the free internet quota provided by the operators sufficient to connect to EBA" under the component of computer and internet access were also removed from the scale as they were under other factors.

Table 5. Distributions of statements and factor loads after exploratory factor analysis

Factors	Statements	Factor Loads
Digital course materials	I want EBA TV, EBA live lessons, and similar distance education and digital content to continue even after the pandemic is over.	,790
	I think that digital course contents are necessary for equal opportunity in education.	,838
	I think that digital course materials should be improved.	,736
	I think that digital course contents will contribute to the students' better understanding of the subjects.	,870
	EBA TV has positively affected the distance education process of students.	,717
	I want EBA TV to be improved in quality.	,678
Teacher competence	I know how to give my students the academic support they need during the distance education process.	,705
	As a teacher, I find myself sufficient to produce digital course contents.	,907
	In order to be more successful in online courses, I examined different country-wide applications.	,781
	Since I had sufficient digital equipment, I benefited from applications such as Zoom, EBA live lesson, Brainquire (Gri Ceviz).	,587
	During the pandemic process, I regularly lectured my students through online digital applications, apart from EBA.	,560
	I needed technological guidance to be more successful in EBA live lessons.	,865
	I want to attend in-service training courses to develop digital course contents.	,721
	In order to be more successful in EBA live lessons, I needed presentation-themed training in digital environments.	,853
Screen addiction	During the pandemic period, I received complaints from my parents about my students playing computer games for hours.	,824
	I learned that my students used social media more than before during the pandemic period.	,905
	I heard that my students played computer games more than before during the pandemic period.	,950
	During the distance education process, I warned my students about the harms of some computer games.	,521
	I heard from my parents that my students used social media more during the pandemic period.	,926
	During the distance education process, I warned my students about the harms of social media addiction.	,516
Course materials	During the pandemic period, I received complaints from my parents about the lack of course materials.	,537
	During the pandemic period, I wanted my students to print out and do the assignments.	,679
	During the pandemic period, I needed supportive resources other than free textbooks.	,633

Parent support studies	During the distance education process, I asked my parents to support their children in their courses.	,796
	During the distance education process, I asked my parents to help their children in the use of computers.	,894
	I had information from my parents about whether my students followed the EBA TV lessons.	,761
	During the pandemic period, I asked my parents to read books with their children.	,873
	I tried to ensure that my students do not break away from courses with the support of my parents during the pandemic period.	,749
	I shared fun activities that could be done at home with children with my parents during the distance education process.	,867
Communication processes	I communicated regularly with my students in order to better manage the distance education process.	,809
	I communicated regularly with my school administrators in order to better manage the distance education process.	,978
	I followed the statements made by the Ministry of National Education in order to better manage the distance education process.	,957
	I communicated with my colleagues in order to better manage the distance education process.	,980
Effective use of EBA	During the pandemic period, my students carried out individual studies assigned to them through EBA.	,797
	My students were able to adjust their study times during the distance education process.	,647
	In EBA live lessons, I informed my students about how to study.	,615
	During the distance education process, I sent examples of activities to my students via EBA.	,852
	During the distance education process, I sent tests to my students via EBA.	,803
	I think that I support the emotional development of my students in EBA live lessons.	,749
	During the distance education process, I recommended some books to my students through EBA.	,775
	EBA live lesson applications ensured that my students did not break away from education during the pandemic process.	,712
	I suggested that my students follow the EBA live lessons in a quiet environment.	,568
	I suggested that my students follow the EBA live lessons using tables and chairs.	,537
	I think that I contribute to the academic development of my students because I use EBA effectively.	,748
Computer and internet access	My students have hardware such as a computer or tablet that can access the live lesson at home.	,960
	My students have internet access at home.	,967
	During the distance education process, I connected to EBA mostly without any problems.	,508
EBA points of support	I find EBA points of support useful in the distance education process.	,852
	I think EBA points of support are functional.	,879
	My students have access to EBA points of support.	,795
	I informed my socio-economically disadvantaged students to benefit from EBA points of support.	,774
	I informed my parents who do not have internet access to head their children to EBA points of support.	,762
	EBA points of support should be improved in quality for disadvantaged students.	,907
	EBA points of support should be increased in number.	,816

Recovery of learning losses	In the 2021-2022 academic year, the Ministry of National Education should prepare and apply readiness tests throughout the country.	,853
	In the 2021-2022 academic year, branch teachers should prepare and apply school-level readiness tests.	,894
	Subjects that need to be repeated and acquisitions should be identified based on the readiness tests.	,911
	Weekend courses should be arranged for students with learning losses.	,868
	Incomplete learning should be compensated by reflecting on the subjects that need to be repeated and achievements in weekend courses.	,881
	EBA points of support should be continued for students with learning loss during extracurricular hours.	,700

12 components made up the scale after factor analysis though there were 10 before. The reason for this was that the factors of teacher competence and EBA points of support were divided into other components within themselves. This situation is also observed in Table 4, which includes the cumulative calculation of the total variance explained. It is also observed that teacher competence and EBA points of support, which are the only factors in the raw form of the scale, were divided into two separate factors. The reason for this was not only the characteristics of the population for which the scale was applied and the related sample but also the fact that it was theoretically significant.

According to the data available in Table 5, the most consistent factors of the scale were parent support studies, effective use of EBA, and recovery of learning losses, since factor loads of all statements were above 0.5 and the signs of factor loadings were the same as other statements and in the same group in factor analysis. And, strongest factor loadings belonged to the statement "I asked my parents to help their children in the use of computers during the distance education process" (0,894) for the parent support studies, the statement "I sent the activity examples to my students through EBA during the distance education process" (0,852) for effective use of EBA, and the statement "Subjects that need to be repeated and acquisitions should be identified based on the readiness exams"(0,911) for recovery of learning losses.

Concurrent changes of components in the scale are not desired as a scale feature, as the relevant feature potentially causes each of them to fail to act independently. The control of this parameter is provided by the correlation matrix. A value less than 0.8 for the coefficients at the intersections of the different factors listed in the matrix indicates that there is no acceptable relationship between the components. The results in Table 6 also reveal that there is no coefficient higher than 0.8. This indicates that the scale factors act independently (Tabachnick, Fidell, & Ullman, 2007).

Table 6. Correlation matrix

C	1	2	3	4	5	6	7	8	9	10	11	12
1	1,00	,556	,347	,278	,357	,543	,465	,370	,519	,322	,153	,113
2	,556	1,00	,311	,463	,252	,493	,449	,209	,446	,236	,192	,136
3	,347	,311	1,00	,311	,371	,432	,277	,193	,474	,181	,283	,185
4	,278	,463	,311	1,00	,178	,393	,293	,029	,424	,069	,195	,264
5	,357	,252	,371	,178	1,00	,374	,414	,280	,371	,291	,348	,141
6	,543	,493	,432	,393	,374	1,00	,504	,159	,638	,382	,123	,198
7	,465	,449	,277	,293	,414	,504	1,00	,215	,373	,355	,143	,186
8	,370	,209	,193	,029	,280	,159	,215	1,00	,232	,254	,104	-,137
9	,519	,446	,474	,424	,371	,638	,373	,232	1,00	,191	,185	,241
10	,322	,236	,181	,069	,291	,382	,355	,254	,191	1,00	,077	-,018
11	,153	,192	,283	,195	,348	,123	,143	,104	,185	,077	1,00	,196

Confirmatory factor analysis and goodness of fit values of the model

Confirmatory factor analysis was performed in order to ensure the scale's adequacy for the sample that was determined. According to the confirmatory factor analysis, the course materials factor (5 statements) was subtracted from the scale (12 components/factors and 60 statements) obtained after the exploratory factor analysis. In addition, the statements "I know how to give my students the academic support they need during the distance education process" (teacher competence factor), "As a teacher, I find myself sufficient to produce digital course content" (teacher competence factor), "To be more successful in online courses, I examined country-wide different applications" (teacher competence factor), "I regularly lectured my students through online digital applications apart from EBA during the pandemic" (teacher competence factor), "As I have sufficient digital equipment, I benefited from applications such as Zoom, EBA live lesson, Brainquire" (teacher competence factor) were removed. The items "I informed my students about the screen addiction problem that might occur during the distance education process" (screen addiction factor), "I informed my parents to keep my students away from screen addiction during the distance education process" (screen addiction factor), "I warned my students about the harms of some computer games during the distance education process" (screen addiction factor) were not included in the scale because they created loads on different factors. The items 'I find EBA support points functional', 'My students have access to EBA support points' and 'I have informed my socio-economically disadvantaged students to benefit from EBA support points' were removed from the scale. The statements "Weekend courses should be arranged for students with learning loss" (recovery of learning losses factor) and "Incomplete learning should be compensated by reflecting on the subjects that need to be repeated and acquisitions in weekend courses" (recovery of learning losses factor) were also removed from the scale. As a result, finally, 46 statements of the scale and 9 factors formed by them were obtained. These factors are described in Table 7 together with their statements.

Table 7. KMO test results for scale factors (confirmative factor analysis)

Factors	Number of statements	Sampling adequacy (KMO)
Digital course content	6	0,847
Teacher competence	3	0,691
Screen addiction	5	0,861
Parent support studies	6	0,902
Communication processes	4	0,857
Effective use of EBA	11	0,911
Computer and internet access	3	0,605
Computer and internet access	7	0,763
EBA points of support	4	0,763
Recovery of learning losses	4	0,828
Total	49	0,944

According to the data in Table 7, although the factor with the lowest KMO value is 0.605 for computer and internet access since the lower limit for this value is 0.6, it is at an acceptable level (Hair, Risher, Sarstedt, & Ringle, 2019).

Reliability analysis results

According to the results of the reliability analysis, Cronbach's alpha value of 46 statements (for non-standardized statements) was found to be 0.952 (Table 8). It can be said that the scale reliability is adequate for values where this value is 0.6 and higher (Hair et al., 2019).

Table 8. Reliability results for scale factors

Factors	n	Cronbach's alpha
Effective use of EBA	11	0,924
Parent support studies	6	0,920
Digital course content	6	0,871
Screen addiction	5	0,894
Communication processes	4	0,934
Recovery of learning losses	4	0,904
Teacher competence	3	0,808
Computer and internet access	3	0,810
EBA points of support	4	0,875
Toplam	46	0,952

The output of the model, which includes the structural equation modeling, is shown in Figure 1. Accordingly, the model image highlights that there are 9 factors and 46 related statements in the model in which the scale adequacy for the sample of 8973 people is tested.

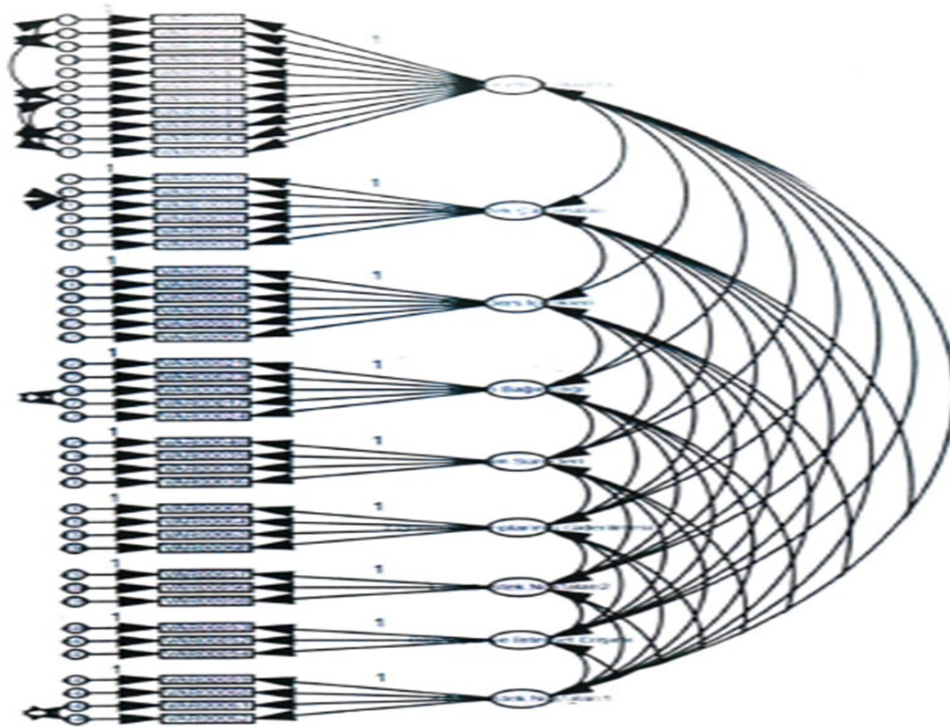


Figure 1. Structural equation model of the scale

Goodness of fit values of the model are shown in Figure 1. Accordingly, the CMIN was determined as 26132,616. With this result, the difference between the covariance matrix taken as a sample in the study and the covariance matrix adapted by the model is evaluated (Hu & Bentler, 1999). The CMIN/DF (chi-square/degrees of freedom) value in the model was found to be 24,332. Although this value is expected to meet the CMIN/DF<5 condition for small datasets, this criterion is not valid for large datasets (Tabachnick et al., 2007). Goodness of fit values of the model are shown in Table 9.

Table 9. The goodness of fit values of the model

Model fit	CMIN	CMIN/DF	GFI	NFI	TLI	CFI	RMSEA
Model values	26132,616	24,332	0,879	0,922	0,918	0,925	0,051

The goodness of fit values of the model is shown in Table 9. Accordingly, the CMIN was calculated as 26132,616. With this result, the difference between the covariance matrix taken as a sample in the study and the covariance matrix adapted by the model is evaluated (Hu & Bentler, 1999). The CMIN/DF (chi-square/degrees of freedom) value in the model was found to be 24,332. Although this value is expected to meet the CMIN/DF<5 conditions for small datasets, this criterion is not valid for large datasets (Tabachnick et al., 2007).

The GFI value, which is defined as the comparison of the measured variance and covariance with the model variance and covariance, ranges between 0 and 1, but the threshold value is accepted as 0.90 (Maiti & Mukherjee, 1991). The threshold value can be as high as 0.95 for small samples (Shevlin & Miles, 1998). The GFI value was found to be 0.879 in the study.

The NFI value, which expresses the comparison of the current model and the zero models, was found to be 0.922. If the measured variables are not related to each other, the minimum acceptable value for NFI is 0.90, which indicates that the current model is accepted as the zero models (Hu & Bentler, 1999). TLI can also be used to compare alternative models or to measure the zero models and the alternative model. In the samples whose volume is not very large, the NFI value does not get closer to 1 even though the current model is correct. Therefore, TLI has developed a solution to this problem by adding degrees of freedom to the model (Schumacher and Lomax, 2004). In the model of this study, TLI was found to be 0.918.

The enhanced version of the NFI statistic is CFI. CFI is more valid than NFI. This value, which is affected by the sample size, gives better results in small samples. CFI compares the sample covariance matrix with the zero matrixes and arrives at a corresponding conclusion. Acceptability values for CFI also start from 0.90 (Bentler & Bonett, 1980). The CFI value in the model was calculated as 0.925.

RMSEA refers to the root mean square error of approximation and is a measure of the approximate fit in the population (Çapık, 2014). It informs about the compatibility of the variables, which were not known during the study but planned appropriately, with the covariance matrix of the population (Byrne, 2016). The goodness of fit value for this parameter is less than 0.06 (McQuitty, 2004). RMSEA tends to increase as the number of statements and variables in the model increase. Therefore, it is possible to say that it supports a few statements. Despite this, the RMSEA value in the model was calculated as 0.051.

Discussion and Conclusion

Today, we know that digital technologies are developing at a rapid pace, and their place and importance in our lives is expanding day by day. Within the scope of distance education, which started with the Covid 19 epidemic, schools of different types and levels entered the digitalization process. Undoubtedly, teachers are the most affected by this period. At this point, the readiness of teachers for the skills of using digital technologies came to the fore. In addition, themes such as teacher competence, communication and screen addiction in distance education processes have been the subject of many researches, as in this research. For example, problems in internet and computer access (Özdoğan & Berkan, 2020), learning losses of disadvantaged students in rural areas (Ramos Morcillo, Leal-Costa, Moral-García & Ruzafa-Martínez, 2020); Communication problems, lack of schooling as a place of socialization in online courses and increasing emotion of loneliness (Gewin, 2020; Attri, 2012); digital game addiction (Aktaş and Bostancı Dashtan, 2021); themes such as distance education assessment and evaluation processes (Koh, Lee, Wong, & Yap, 2020) have been analyzed in many studies as well as in this study. Therefore, the study is compatible with some theoretical statements in the literature.

In the success of the distance education process; the research show parallelism in terms of the effect of teachers' teaching energy, motivating skills, feedback and process management (Clark, 2020; Ferdousi, 2010).

On the other hand, in the period of COVID 19, it is stated that technology provides convenience in terms of accessibility and access to education (Mulenga and Marban, 2020; Purwanto et al., 2020), technology use skills are effective in the academic learning process (Patricia, 2020) and awareness of digital education has increased (De Paepe, Zhu & DePryck, 2018) do not coincide with the results of this research.

In this study, a scale was developed to measure the Evaluation of Distance Education from the Perspective of Teachers in the Covid 19 Period and validity and reliability studies were carried out. According to the structural equation model of the model, it was concluded that there were 9 factors and 46 related expressions. While the reliability coefficient for the whole scale was .95, the reliability indices for each factor were; .87 for digital course contents factor, .80 for teacher efficacy factor, .89 for screen addiction factor, .92 for parent support activities factor, .93 for communication processes factor, .92 for efficient use of Education Information Network (EBA) factor, .81 for the computer and internet access factor, .87 for the Education Information Network (EBA) support points factor, and .90 for the learning loss removal factor. The fact that the reliability coefficient of the developed scale is 0.70 and above for both the whole and its sub-dimensions proves that this study is a reliable measurement tool (Büyüköztürk, 2007).

In the context of the analysis, the CMIN was determined as 26132.616, while the CMIN/DF (chi-square/degrees of freedom) value was found to be 24,332. Although this value is expected to meet the CMIN/DF<5 condition for small datasets, this criterion is not valid for large datasets (Tabachnick et al., 2007). Although the GFI value is between 0 and 1, the threshold value is accepted as 0.90 (Maiti & Mukherjee, 1991). The threshold value can be as high as 0.95 for small samples (Shevlin & Miles, 1998). The GFI value was found to be 0.879 in the study. A GFI value of 0.70 and above proves the existence of a viable factor model (Durkan, 2017). The NFI value, which expresses the comparison of the current model and the zero model, was found to be 0.922. The minimum acceptable value for NFI is 0.90 (Hu & Bentler, 1999). CFI and IFI values of 0.80 and above can be expressed as an acceptable ratio (Özdamar, 2013). The CFI value in the model was reached as 0.925.

According to the results of the factor analysis, each factor must have at least 2 items proven to be acceptable within its own body. The increase in the number of items included in each factor in the scale increases the reliability of the scale and at the same time increases the explainability of the factors (Seçer, 2015). As a result, it is possible to state that a valid, reliable and usable distance education process evaluation tool, the Evaluation of Distance Education from the Perspective of Teachers in the Covid 19 Period, was developed in the research.

Suggestion

In this study, opinions on distance education were obtained from teachers working in Istanbul. Further research can be conducted with teachers working in different cities or regions, or by considering the perspectives of teachers working in the same city but in different branches. In addition, studies can be conducted on whether digital addictions continue, compensation for learning losses and the effectiveness of digital course contents.

Ethics Committee Approval

Ethics Committee Approval for the current study was obtained with Istanbul University's rule dated 06.10.2020 and numbered 74555795 050.01.04.

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The Investigation of the Socratic Method from the Perspective of Social Studies Teachers

Research Article

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ABSTRACT

In the Socratic Method, which is an approach based on inquiry, it is aimed that students have critical, questioning and creative thinking skills and ability to express themselves. Indeed, the Socratic Method offers students many advantages in terms of acquiring basic skills that will contribute to meeting the needs of this age. The main purpose of the current study is to examine the Socratic Method from the perspective of social studies teachers. The study group of the study consists of 22 social studies teachers working in the Ministry of Education in the province of Muş. The opinions of the social studies teachers who constitute the study group were obtained by using a semi-structured interview form. Qualitative research method was used in this study, in which the Socratic Method was examined from the perspective of social studies teachers. Within the context of the study, the phenomenological design was used in accordance with the nature of the qualitative research method. The data obtained were grouped and analyzed by using the descriptive analysis technique. As a result of the study, it was concluded that the social studies teachers expressed different opinions. In this context, the teachers defined the Socratic method according to their own perspectives, listed numerous advantages of it, expressed their opinions on the effect of this method on students' interest in the lesson and made various suggestions to make this method more effective and functional.

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Keywords:

Social Studies, Socratic Method, Teachers' Opinions

Introduction

Mankind has been in an effort to make sense of what is happening around them from an early age. They have made observations and as a result, they have experienced a sense of curiosity and naturally began to ask questions to satisfy their curiosity. It can be said that asking questions and striving to find the answer is an action that people continue throughout their lives. According to Köken (2002), asking questions is an

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important activity that promotes thinking. On the basis of thinking, there are question marks that give rise to curiosity in people. Therefore, questions are of great importance for people to keep their minds active. In fact, learning is possible when individuals try to find answers to the questions in their minds because thinking occurs as soon as questions are started to be asked about an issue.

Socrates was one of the first thinkers to emphasize that questions are an important element in revealing prior knowledge in the minds of individuals. Actually, the Socratic Method is rooted in Socrates, the ancient Greek philosopher, using questions to uncover knowledge. In this respect, the Socratic Method is based on the principle of revealing existing information by asking questions rather than teaching or memorizing new information (Aydın, 2008). Thus, asking questions gained importance and became a valuable concept (Şimşek, 2008). According to Socrates, knowledge is thought. Asking questions is essential for the elicitation of thought. By asking questions, contradictions in individuals' minds are brought to light and thus they become debatable. Thought-driven discussions lead individuals towards the pursuit of truth. The current state of questioning cases and objects is, in fact, a manifestation of the ongoing pursuit and endeavour to seek and find the truth, which dates back to Ancient Greece (Ensar, 2003). In this regard, as the person who originated, developed and conceptualized this notion, Socrates' endeavour to find the truth can be expressed as the Socratic Method, Socratic inquiry or inquiry-based learning.

In the Socratic Method, the questions to be asked are first used to discuss the wrong or incomplete propositions put forward by the individual. The questions to be asked later consist of questions containing examples that contradict the propositions put forward by the individual. Finally, the previous proposition is refuted or revised within the framework of the new information that has emerged (Türkçapar and Sargın, 2012). The Socratic Method is considered as preparing and asking various types of questions in advance to be used in a discussion. In other words, the Socratic questioning or the Socratic Method is a kind of inquiry in which questions about ideas are asked and contradictions are aimed to be revealed (Knezic et al., 2010).

According to Işık (2011), Socrates defined his own method as the process of revealing hidden truths in the minds of interlocutors through the questions meticulously prepared and thus of helping them further their understanding. Through the Socratic Method of questioning, the perspective of the individual being addressed is altered, leading him/her to re-examine what is known.

In the context of teacher-student communication in education, certain stimuli should be employed to establish and maintain effective communication. Asking question is one of the most important of these stimuli (Bilen, 2006). In the learning and teaching process, appropriate questions should be asked to move the student from a passive position to an active position. Therefore, meaningful and appropriate questions should be asked in order to create a student-centred structure in education (Moore, 2007). In the process of making knowledge meaningful in the mind and enabling students to reconstruct knowledge, the questions asked to students encourage them to do so. Meaningful questions can make it easier for students to gather their attention, concentrate on the subject and think quickly. In addition, with meaningful questions to be asked to students, it can be ensured that they think correctly and make effective inferences (Taşpınar, 2010). In this context, it can be said that the Socratic Method, which is based on questioning or inquiry-based approach in education, is highly important. The Socratic Method, one of the classical teaching techniques, enables students to become aware of the contradictions between their adopted value judgements, such as what is good or bad, right or wrong and the choices they make in real-life situations (Elkind and Sweet, 1997).

There are three basic parts in the Socratic Method, which tries to reach the truth by asking questions. These can be summarized as follows (Gotz, 1999; Güçlü et al., 2002; Aydın, 2008; Komşu, 2011; Türkçapar and Sargın, 2012):

- **Reductio ad absurdum (Disproving a proposition):** It is the first part of the Socratic Method. It takes the form of asking questions and receiving answers. The part of disproving a proposition is divided into two stages. The first stage involves creating and presenting a pool of examples related to the inquired situation and refuting the propositions put forward one by one in the pool of examples (elenchos). The second stage involves engaging in logical discussions to conduct cross-examination or explore the fundamental nature and moral correctness of the created pool of questions within a logical framework. In other words, the main focus of this stage is to refute erroneous and incomplete propositions concerning the inquired issue by presenting examples within a general dialogue framework. The first part of the Socratic Method, which involves disproving propositions, is primarily regarded as a negative evaluation because the main purpose here is to demonstrate the falsehood of the presented claims or propositions.
- **Giving Birth (Maieutic) or Midwifery:** In this part of the method, the view that knowledge pre-exists in the human mind is accepted. Indeed, a significant portion of ancient Greek philosophers defended this view. In this part, the aim is to reveal or elicit the pre-existing or latent knowledge in the human mind through questioning. It refers to the concept of “maieutic” which is one of the most important factors in Socratic dialectic method. The English equivalent of the concept “maieutic” is “midwife” and it is used to mean uncovering what already exists. In order to be able to give birth, it is necessary for the thing to be born to already exist. The motif of midwifery symbolizes the act of bringing forth what already exists beyond merely teaching knowledge.
- **Guidance or Inspiration of the Daimonion:** In ancient Greek philosophy, Daimonion symbolizes a spiritual or psychic entity believed to influence human destiny and unfathomable divine entities having a divine force or extraordinary and immense qualities and positioned between God and humans. Daimonion, which constitutes the third part of the Socratic Method and serves as a highly functional element, provides guidance or inspiration to Socrates on what he should not do, but does not provide any direction on what he should do. Similar to the part of giving birth and midwifery, images also play an important role in this part. Daimonion, symbolizing the divine supervision and guidance, is believed to assist Socrates in distinguishing between real and unreal images that occur during the process of birth, particularly by indicating falsehood.

The Socratic Method, frequently used in educational settings, is based on a student-centred approach. By asking questions, it is aimed that students find solutions, socialize and produce deeper thoughts. In this method, it is accepted that the most natural method for students to reach information is to ask questions. In the Socratic Method, students ask questions, make observations, express themselves, take responsibilities and use different sources of communication. Thus, the student feels more active and his/her motivation increases (Davis, 2005). While preparing questions in the Socratic Method, one should be meticulous and questions should be formed by considering the following criteria (Ensar, 2003, p. 275):

- ✓ Readiness of students should be taken into consideration
- ✓ Questions should be clear and comprehensible
- ✓ Questions should be suitable for interpretation
- ✓ Considering the student level, excessive difficulty or simplicity should be avoided
- ✓ Questions should be of such a nature as to allow students to express their own thoughts in a systematic manner
- ✓ Basic and desired points should be emphasized without going into too much detail or giving unnecessary information

- ✓ Questions should encourage students to seek new information and engage in various research
- ✓ Questions should assess higher-order cognitive skills and measure learning at different levels.

In the Socratic Method, which is based on an inquiry-based approach, the factor which is as important as asking questions is the high level interaction between the learner, the teacher, the content and the learning environment (Babadoğan and Gürkan, 2002). In this context, the main thing in questioning is not to make students memorize or fill their mind with piles of information, but to make meaningful learning possible by improving their mental skills. The Socratic Method increases students' sense of curiosity and facilitates their reasoning. In this method, constantly asking questions enables students to find different solutions by improving their understanding of deep thinking (İlter, 2013).

The understanding of education in the 21st century is based on the principle that students should be able to access information effectively, interpret, evaluate, reproduce and make sense of it, use technological tools effectively and beneficially and produce alternatives and solutions by developing their creative and critical thinking skills in the face of problems. Based on these expectations, it is anticipated that the methods, strategies, educational content and integrated technological elements used in schools will enhance students' abilities to inquire, criticize and think creatively (Branch, 2002). In this context, it can be said that teachers have important duties and responsibilities. According to Budak (2011), teachers need to guide students in order for learning experiences to be internalized by students. In this respect, asking questions is one of the most important stimuli. Therefore, it can be said that the Socratic Method, which is based on effective questioning, is very important in terms of meeting the requirements of the information age. When the literature on the Socratic Method is reviewed, it is seen that many studies have been conducted on it (Abrams, 2015; Aydin, 2001; Birnbache, 1999; Clark and Egan, 2015; Delić and Bećirović, 2016; Durhan, 2021; Güvenç, 2021; Kanat and Temel, 2019; Mocan, 2021; Oyler and Romanelli, 2014; Su, 2022; Türkçapar and Sargın, 2012; Yıldız and Dadı, 2019; Zeybek, 2019). However, no study in which the Socratic Method was evaluated in the context of the views of social studies teachers has been encountered. Thus, the current study is believed to help fill the void in the literature. Moreover, the current study is of great importance to provide some insights to the researchers who want to investigate the subject further.

The Aim of the Research

The main purpose of the current study is to determine the opinions of social studies teachers about the Socratic Method. To this end, answers to the following sub-problems were sought:

- ✓ How do the social studies teachers define the Socratic Method?
- ✓ What are the advantages of the Socratic Method over classical methods according to the social studies teachers?
- ✓ How do the social studies teachers evaluate the interest of students in the lesson delivered with the Socratic Method?
- ✓ What are the ways the social studies teachers follow when implementing the Socratic Method?

Method

This study has been conducted under the approval of Harran University, Human Research in Social Sciences, Ethical Committee (Protocol Number: 2023/24; date: 13.01.2023).

Qualitative research method was used in this study, in which the Socratic Method was examined from the perspective of social studies teachers. Qualitative research allows the subjects to be discussed in detail and to make general interpretations and evaluations. The stages of the research method are presented below.

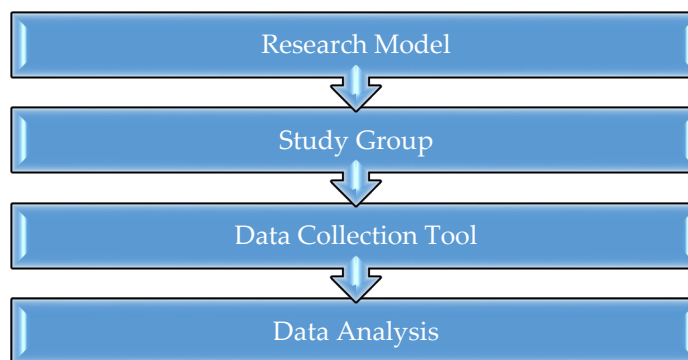


Figure 1. Stages of the research method

In this study, which aims to examine the Socratic Method from the perspective of social studies teachers, the phenomenological design was used. The phenomenological design emphasizes the phenomena which we are aware of but about which we do not have a detailed and deep understanding. The main goal of phenomenological studies is to bring personal experiences to a more general and encompassing level (Creswell, 2007). The phenomenological design aims to investigate the phenomena that we are not completely unfamiliar with, but that we cannot fully comprehend (Göçer, 2013). In this study, the opinions of social studies teachers about the Socratic Method were tried to be examined in detail.

Study Group

The study group consists of 22 social studies teachers working in school affiliated to the Ministry of National Education in the province of Muş in the 2022-2023 school year. While constructing the study group, the convenience sampling method was used because it was desired to accelerate and facilitate the study, reach the members of the study group more easily and increase the reliability of the study (Yıldırım and Şimşek, 2011). The demographic information about the participants is given in Table 1.

Table 1. Demographic information about the participants

Variables	Categories	f	%
Gender	Female	10	45,5
	Male	12	55,5
Age	24-35	15	68,2
	36-45	5	22,7
	46-55	1	4,5
	56 and older	1	4,5
Professional Experience	1-10 years	18	81,8
	11-20 years	3	13,6
	21 and more	1	4,5
Total		22	100

As seen in Table 1, 45.5% (f=10) of the participants are female and 55.5% (f=12) are male. Of the participants, 68.2% (f=15) are in the age group of 24-35 and 81.8% (f=18) have 1-10 years of professional experience.

Data Collection Tool

In the current study aiming to examine the Socratic Method from the social studies teachers' perspectives, a semi-structured interview form was prepared by the researcher to collect the data. While creating the questions in the interview form, attention was paid to principles such as writing easily understandable questions, asking open-ended questions, preparing focused questions, avoiding directing, avoiding asking multidimensional questions and arranging the questions in a logical way (Yıldırım and

Şimşek, 2011). In addition, in order to check the purpose of the semi-structured interview form, its clarity and to ensure that the research is more valid and reliable, a literature review was conducted and the opinions of education and field experts working at Muş Alparslan University and Firat University Education Faculties were consulted. In line with the opinions and suggestions of the experts, the interview form was finalized and the number of questions was reduced from 6 to 4;

- ✓ The opinions of some participants are given as direct quotations.
- ✓ A subjective approach is tried to be avoided while interpreting the data.
- ✓ Each stage in the process of obtaining and analyzing the data is explained in detail.
- ✓ Opinions and suggestions of field experts are taken into consideration.

Analysis of Data

In the study, after taking the written opinions of the participants through a semi-structured interview form on the subject of the Socratic Method, the answers were grouped by the researcher and analyzed by using the descriptive analysis technique. In the findings section, computer-assisted analysis results were grouped into main themes and then into sub-themes derived from the main themes. In addition, in the findings section, similar opinions together with the number (f) and percentage (%) of the participants are grouped and presented in tables. Furthermore, sample opinions obtained from the participants are presented by using the codes "O1., O2..." as direct quotations.

Findings

In the study, the opinions of the social studies teachers on the research topic were analyzed by using descriptive analysis. The findings obtained in the study are examined under four headings.

Teacher Opinions about the Socratic Method

The answers given by the participants to the question "How do you define the Socratic Method? Please explain." in the semi-structured interview form prepared to determine the opinions of the social studies teachers who constituted the study group are presented in Table 2.

Table 2. Teacher opinions about the Socratic Method

2 st Theme: Socratic Method		
Sub-Themes	f	%
O.1. It is the art of asking questions	11	50
O.2. A way for creating effective learning	5	23
O.3. It is the key to knowledge	4	18
O.4. It's a means of expressing yourself	2	9
Total	22	100

When the opinions of teachers on the Socratic Method are examined, it is seen that 11 (50%) teachers defined it as "The art of asking questions", 5 (23%) as "A way for creating effective learning", 4 (18%) as "Key to knowledge" and 2 (9%) as "A means of expressing yourself" (Table 2).

Some of the teachers' statements uttered in response to the question "How do you define the Socratic Method? Please explain." are given below within the determined sub-themes shown in Table 2.

"Asking questions is everything in the Socratic Method. When we effectively ask questions to students, the feedback from the students is very positive. That's why I see the Socratic Method as the art of asking questions." (**Social Studies Teacher 7; O.1**)

“The most important feature of the Socratic Method is the question and answer. I ask questions about the subject during the lesson in order to save the lesson from monotony and make the students active. The lesson becomes livelier and students learn more efficiently with this method. For this reason, I can define the Socratic Method as students being engaged in productive and permanent learning.” (Social Studies Teacher 3; O.2)

“If knowledge is a sea, then a question is the tankard needed to draw water from that sea. If we present knowledge through imposition in classrooms, the student merely memorizes it but fails to internalize it. We need to use different techniques and methods in our lessons. I think one of the best techniques is the Socratic Method. The Socratic Method is actually similar to discovery learning. By asking questions, we enable students to make inferences about the subject. In this respect, the two methods are very similar.” (Social Studies Teacher 2; O.3)

“I often use the question-answer technique in lessons and in the Socratic Method, it is very important to ask questions. For me, the Socratic Method is about students mustering up a feeling of courage and expressing themselves effectively.” (Social Studies Teacher 18; O.4)

Advantages of the Socratic Method

Another question in the semi-structured interview form is *“What do you think are the advantages of the Socratic Method compared to classical methods?”* The answers given by the members of the study group to this question are grouped as sub-themes and presented in Table 3.

Table 3. Teacher opinions on the advantages of the Socratic Method over classical methods

3rd Theme: Advantages of Socratic Method

Sub-Themes	<i>f</i>	%
O.1. It increases interest in the lesson	5	23
O.2. It makes the lesson fun	4	18
O.3. It increases students' participation in the lesson	4	18
O.4. It creates productive discussion environments	2	9
O.5. It teaches effective questioning methods	2	9
O.6. It triggers curiosity	3	14
O.7. It ensures the permanent learning of subjects	2	9
Total	22	100

When the opinions of the teachers about the advantages of the Socratic Method over classical methods are examined, it is seen that 5 (23%) teachers stated that *“it increases interest in the lesson”*, 4 (18%) teachers stated that *“it makes the lesson fun”*, 4 (18%) teachers stated that *“it increases students' participation in the lesson”*, 2 (9%) teachers stated that *“it creates productive discussion environments”*, 2 (9%) teachers stated that *“it teaches effective questioning methods”*, 3 (14%) teachers stated that *“it triggers curiosity”* and 2 (9%) teachers stated that *“it ensures the permanent learning of the subjects”* (Table 3).

Some of the teachers' statements regarding the theme of *“Teachers' opinions on the advantages of the Socratic Method compared to classical methods”* in Table 3 are given below:

“When we constantly teach a lesson at the same level, with the same tone of voice and the same logic, we witness that students lose interest in the lesson after a certain point. The lesson becomes monotonous and students begin to talk among themselves. Of course, this reduces efficiency to zero. For this reason, I think that when we prepare questions and direct them to the students in compliance with the Socratic Method, we see that the students re-engage in the lesson and focus their attention on the lesson again.” (Social Studies Teacher 9; O.1)

“Compared to other methods, the Socratic Method has many advantages. There is no point in listing them at length, but in my opinion, the biggest advantage is that it makes the lesson more enjoyable. When we prepare and ask questions to a student in this context, other students listen carefully to the questions and watch their friend. Some

questions also lead to bursts of laughter in the classroom. It's not just about entertainment, of course. The main point here is that students learn while having fun." (Social Studies Teacher 21; O.2)

"Sometimes getting students engaged in the lesson is a really serious matter. It is not efficient to just cover the topic and move on. It is not efficient for both students and teachers. Thus, it is necessary to somehow attract students to the lesson and ensure their participation in the lesson. I think this can be achieved to a large extent when the Socratic Method is applied. Thus, both the teacher is more active and the student is more willing. I think this is one of the advantages of this method." (Social Studies Teacher 14; O.3)

"We can show discussion environments as an important advantage in this method. Wherever there are questions, the brain pushes itself harder to find the answer. The student-student and student-teacher dialogues yield productive discussion environments. As a result, the lesson becomes more enjoyable." (Social Studies Teacher 17; O.3)

Students' Interest in the Lesson as a Result of the Application of the Socratic Method

Another question in the semi-structured interview form is "What do you think about the students' interest in the lesson as a result of the application of the Socratic Method?" The answers given by the participants to this question are grouped as sub-themes and given in Table 4.

Table 4. Teacher opinions about students' interest in the lesson as a result of using the Socratic Method

4 rd Theme: Students' Interest in the Lesson as a result of Using the Socratic Method		
Sub-Themes	f	%
O.1. Students' interest in the lesson always remains alive	9	41
O.2. The participation of students who are passive in the lesson increases	7	32
O.3. Students' attention towards the subject increases	4	18
O.4. Students' motivation increases	2	9
Total	22	100

Table 4 presents the opinions of the teachers on students' interest in the lesson as a result of using the Socratic Method. When the opinions of the teachers are examined, it is seen that 9 (41%) teachers stated that "Students' interest in the lesson always remains alive", 7 (32%) teachers stated that "The participation of students who are passive in the lesson increases", 4 (18%) stated that "Students' attention towards the subject increases" and 2 (9%) teachers stated that "Students' motivation increases".

Some of the responses given by the teachers to the question "What do you think about the students' interest in the lesson as a result of the application of the Socratic Method?" are given below:

"Implementing this method really helps students stay engaged in the lesson. As questions come up all the time, students prepare themselves to answer them. This captures students' attention and ensures that their interest remains alive throughout the lesson." (Social Studies Teacher 22; O.1)

"Not every student attends the class with the same enthusiasm. Some students feel shy, some feel embarrassed and others are eager to show themselves. It is essential for both the actively participating students and quietly sitting students to be involved in the lesson. It is easy to make active students to participate in the lesson. No extra effort is required for this. However, it is a little difficult to involve students who are quiet and shy. For this reason, because I know the characters of these students well and I want to involve them in the lesson, I prepare questions for them in advance and attract them to the lesson. This is the beautiful side of this method. I believe that if we know the students and are familiar with this method, students' level of enthusiastic participation in the lesson will be high." (Social Studies Teacher 3; O.2)

"When I apply this method, that is, when I ask questions regularly and systematically, students prepare themselves and keep their perceptions alive. In this way, they pay full attention to the lesson and focus on the topic so that they can provide good answers when it's their turn to be asked a question." (Social Studies Teacher 13; O.3)

The Approach that Should Be Followed When Applying the Socratic Method

The responses given by the participants to the last question in the semi-structured interview form *"In your opinion, what approach should be followed when applying the Socratic Method?"* are categorized into sub-themes and presented together with frequencies and percentages in Table 5.

Table 5. Teacher opinions about the approach that should be followed when applying the Socratic Method

5 th Theme: Approach That Should be Followed When Applying the Socratic Method		
Sub-Themes	f	%
O.1. The questions to be asked should be prepared with high quality	5	23
O.2. Question pools should be created before the lesson	3	14
G.3. An environment should be created where students feel comfortable expressing themselves.	3	14
O.4. Students should not be pressured during the question-answer process	3	14
O.5. Students should be constantly encouraged	3	14
O.6. The lesson should break free from monotony and boredom	2	9
O.7. When a student gets stuck during the question-answer session, he/she should be assisted	2	9
O.8. The teacher should not be a mere transmitter of knowledge but a guiding facilitator who helps students discover knowledge	1	5
Total	22	100

Table 5 presents the opinions of teachers regarding the approach that should be followed when applying the Socratic Method. When these opinions are examined, it is seen that 5 (23%) teachers stated that *"The questions to be asked should be prepared with high quality"*, 3 (14%) teachers stated that *"Question pools should be created before the lesson"*, 3 (14%) teachers stated that *"An environment should be created where students feel comfortable expressing themselves"*, 3 (14%) stated that *"Students should not be pressured during the question-answer process"*, 3 (14%) teachers stated that *"Students should be constantly encouraged"*, 2 (9%) teachers stated that *"The lesson should break free from monotony and boredom"*, 2 (9%) teachers stated that *"When a student gets stuck during the question-answer session, he/she should be assisted"* and 1 (5%) teacher stated that *"The teacher should not be a mere transmitter of knowledge but a guiding facilitator who helps students discover knowledge"*.

Below are sample opinions from the social studies teachers regarding the final question in the semi-structured interview form, *"In your opinion, what approach should be followed when applying the Socratic Method?"*

"The Socratic Method is basically based on asking questions. We cannot ask the same questions to every student. There are cognitive differences among students. First, we should get to know the students well. Then we should prepare questions specific to each student. Careful preparation of questions is of great importance. I think you should pay attention to this." (Social Studies Teacher 8; O.1)

"There aren't few questions in this method. A large number of questions should be prepared for students to consolidate their knowledge and make inferences about what they do not know. I think this requires serious preparation before the lesson because many questions will be asked and inappropriate or illogical questions should be eliminated from among them and question pools should be created." (Social Studies Teacher 16; O.2)

"One important aspect to consider in implementing this question-and-answer method, in my opinion, is creating an environment where students feel comfortable. If students do not feel comfortable, they cannot give comfortable and correct answers to the questions, and they experience uneasiness. Thus, I think that if the teacher is going to apply this method, he/she should also prepare this environment." (Social Studies Teacher 9; O.3)

During the implementation of this method, students may become excited, encounter unfamiliar questions or struggle to express themselves effectively. In such a situation, the teacher should help the student overcome the obstacle they are facing and help and encourage him/her. If this is taken into consideration, more efficiency can be obtained.”
(Social Studies Teacher 1; O.5 and 7)

Discussion, Conclusion and Recommendations

In this study examining the Socratic Method from the perspective of social studies teachers, diverse opinions and notable findings are presented in Tables 2, 3, 4 and 5 in the findings section. In the current study, the participating social studies teachers expressed important opinions regarding the Socratic Method and these opinions were gathered under sub-themes. The social studies teachers were found to define the Socratic Method as “the art of asking questioning, a way for creating effective learning, key to knowledge and a means of expressing yourself.”

This result obtained in the current study is similar to the study conducted by Aydın (2008), where the following definition was obtained; “*Asking questions and getting answers constitute the first element of the Socratic method*”. Most of the social studies teachers defined the Socratic Method as the art of asking questions. Zeybek (2019, p. 55) used the following definition; “*This method encourages students to think about their own learning and it has been demonstrated that the method significantly contributes to students’ learning.*” This definition is parallel to the following definition given by the social studies teachers for the Socratic Method; “*a way for creating effective learning*”.

Another notable finding of the study is that the social studies teachers listed the advantages of the Socratic Method over classical methods as follows: It increases interest in the lesson, enables the lesson to be taught in an enjoyable manner, promotes student engagement in the lesson, creates productive discussion environments, teaches effective questioning techniques, triggers curiosity and ensures more permanent learning to occur. In the study conducted by Kaya and Yılmaz (2016), it was found that inquiry-based methods increased students’ interest in the lesson, made the lesson more productive and positively influenced students’ academic achievements. İltir (2013) determined that the inquiry learning model increased the academic achievement of the students and contributed to more permanent learning. In the study conducted by Kanat and Temel (2019), it was determined that the Socratic Method had significant effects on short-term memory, verbal working memory, visual working memory and academic achievement. Türkçapar and Sargın (2012) emphasized that the Socratic Method enables the person to reach new results and understandings that are meaningful and beneficial for himself/herself and that it triggers the sense of curiosity and causes new ideas to be formed. Su (2022) stated that the Socratic Method enhances curiosity, facilitates the transition between pieces of knowledge and fosters the acquisition of new information through effective questioning. Mocan (2021) emphasized that the Socratic Method facilitates students’ active participation in the lesson and helps them stay focused by keeping their attention alive. All of these findings are similar to and support the results obtained in the current study.

The social studies teachers who comprised the study group expressed their views on the impact of implementing the Socratic Method on students’ interest in the lesson as follows: Students’ interest in the lesson remains lively, the participation of passive students increases, students’ attention towards the subject increases and students’ motivation is enhanced. In the studies conducted by Davis (1993) and Saban (2013), it was emphasized that the Socratic Method engages students actively in the classroom, strengthens a student-centred approach, enhances students’ problem-solving skills, and increases their motivation towards the lesson. Furthermore, in the study conducted by Zeybek (2019), it was found that the Socratic Method positively affects the classroom environment, increases students’ interest and improves student-teacher communication. These findings in the literature concur with the results obtained in the current study.

Finally, the social studies teachers made the following suggestions regarding the points to be considered while applying the Socratic Method: *“The questions to be asked should be prepared with high quality, question pools should be created before the lesson, an environment should be created where students feel comfortable expressing themselves, students should not be pressured during the question-answer process, students should be constantly encouraged, the lesson should break free from monotony and boredom, when a student gets stuck during the question-answer session, he/she should be assisted, the teacher should not be a mere transmitter of knowledge but a guiding facilitator who helps students discover knowledge”*.

These results obtained from the participants of the current study are similar to the suggestions made for the points to be considered in the implementation of the Socratic inquiry in the study conducted by Paul and Elder (1998); *“Original questions should be asked, connection points should be established between questions and each question should be related to another question preceding it”*. In the book titled *“The Art of Questioning for Teachers: Levels, Techniques, Application Examples”* by Filiz (2004), the author summarizes the things to consider when asking questions as follows: *“Teachers should ask a question at a time, avoid asking overly simple questions, refrain from answering the question themselves, avoid interrupting students’ answers and ensure equal participation by giving opportunities to different students.”* These are consistent with the opinions expressed by the social studies teachers who participated in the current study.

In light of the findings obtained in the current study, in which the Socratic Method was examined in line with the opinions of social studies teachers, the following suggestions can be made:

- ✓ Teachers who will apply the Socratic Method in their own lessons should be well prepared and should take care to create logical and interrelated questions while forming the questions,
- ✓ As emphasized by the participants of the current study, question pools for the Socratic Method should be created and a suitable classroom environment should be designed for this,
- ✓ Students’ ideas should be valued and their voices should not be suppressed,
- ✓ A constructive environment should be created by avoiding a harsh attitude,
- ✓ Students should be encouraged and their motivation should be increased.

Ethics Committee Approval:

This study has been conducted under the approval of Harran University, Human Research in Social Sciences, Ethical Committee (Protocol Number: 2023/24; date: 13.01.2023).

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Picture Book Design Practices in Museum Education Course

Research Article

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ABSTRACT

This research is a case study that aims to reveal the experiences of students studying in the visual arts teacher training programme obtained in the process of designing a museum-themed picture book. In the research conducted with the participation of 27 students attending the museum education course, the experiences of the students regarding the process constituted the unit of analysis. Book designs were created through group work. Group diaries, process evaluation form and field notes reflecting the researcher's observations were used as data sources. The results of the research showed that the students tried to fulfil the requirements of picture book designs, that they observed the principle of suitability for children in the stories they wrote, and that they preferred to highlight the artefacts selected from the museum in the book. The design process was shaped by personal learning such as meeting a new design field, developing awareness of the museum, and realizing the benefits of picture books, and professional learning such as having children design picture books in visual arts class and using picture books in class. Although they had difficulty in writing the stories, they did the illustrations with ease. Although the design process created negative emotions such as stress and overwhelm in the students, they felt happiness the most, believing that they had created a useful work. The experiences of the students indicated that picture book design practices, which are an important tool in contributing to awareness of cultural heritage, can be included in museum education courses.

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Keywords:

picture book, cultural heritage, art education, museum awareness, museum education course

Introduction

Cultural heritage, which is an indicator of the common memory of societies, is a set of values that ensure the continuity of the experiences accumulated from the past to the present and transfer them to the future. Countries that see the value of cultural heritage put forward various practices to convey this treasure from the

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past to new generations. The most important pillar of this is the idea of utilising museums in education. One-to-one interaction with real objects in museums makes it easier for individuals to connect with the past and thus has the potential to strengthen awareness of the value of cultural assets. This situation brings the renewal of the areas of responsibility of museums to the agenda, the development of strategies that enable museums to reach wide audiences, and the realisation of projects for museum education through museum-school collaborations.

Cultural heritage is places, objects or practices that a society considers important and worth preserving (Baker, 2013). Museums make an important contribution to the maintenance of traditional and modern cultural heritage (Eyvazova, 2018). Museums enable people to understand the political, cultural, social, economic and ecological relationships between past and present life through the objects they exhibit (İlhan & et al., 2019). Their function in establishing strong links between the past, present and future brings with it the task of museums to spread culture and ensure that the cultural chain is not broken (Seidel & Hudson, 1999). With its active role in the transfer of cultural heritage to future generations (Mercin, 2003), it helps to create and protect identity and common culture (Yılmaz & Şeker, 2011). Museums provide an entertaining educational process by providing a learning environment with tangible objects (Shabbar, 2001), trigger creative thinking (Gartenhaus, 2000), and provide creative experiences (Sofaer & Vicze, 2020), and thus have a functional role for individuals' contact and interaction with cultural heritage. (Shabbar, 2001), trigger creative thinking (Gartenhaus, 2000), and provide creative experiences (Sofaer & Vicze, 2020).

Discussions and efforts on how to protect the cultural heritage accumulated by humanity, which is an indicator of all the values of the common past, and how to create social awareness about it are increasing day by day (Asatekin, 2004, Schindler & Bonebright, 2011). As a consequence of this, contemporary museology, which understands the necessity of reaching out to the society, is moving towards an understanding that puts learning at the centre by making use of the power of museum education (Karadeniz & et al., 2015), prioritises the needs and interests of visitors and offers them the opportunity to experience the lives of people living in the past (Onur, 2013). Benefiting from visual communication design products that increase interest in the museum and its artefacts (Mercin, 2017), aiming to reach large masses by moving their collections to virtual environments (Mitchell, 2019; Okan, 2018) can be seen as the efforts of museums to strengthen interaction with society. Another priority for museums is educational projects carried out through real or virtual museums in collaboration with different social groups, especially schools (Güneröz, 2023; Kan, 2022; Seligmann, 2014; Sully, 2011; Thompson Wylder, Baumfeld Lerner & Ford, 2014). The main motivation in all these endeavours is the goal of creating a society that understands the value of cultural heritage, protects it and is conscious of transferring it to new generations.

One of the conditions for raising generations that are conscious of preserving values created in the past, such as traditions, languages, objects, works of art or structures, is cultural heritage education (Lee, Hao, & Zhou, 2020). It is a cross-curricular approach to teaching various subjects such as history, geography, languages and geometry, which can benefit from cultural heritage in course content due to its multidimensional characteristic (Copeland, 2006 as cited in Mutlu Öztürk, Güngör & Gülay Ögelman, 2021). However, art has a much more functional effect on the transfer of cultural heritage to future generations (Sherman 2006 as cited in Türkcan, 2019) because it appeals to the senses and has a structure that integrates with experiences. These dynamics of art make art education a means of understanding and developing culture (Eisner, 2002; Kırışoğlu, 2009). This is because cultural heritage education through the arts holds great potential to foster greater engagement in learning, innovation and creativity (Gruber 2009). Engaging students in art projects inspired by the historical, cultural and natural heritage around them contributes to their identity development and increases their interest in art (Ivon & Kuscevic, 2013).

Picture books (Çetinkaya & Durmaz, 2020) constitute a remarkable area in cultural heritage education due to their feature of being the carrier of culture and being an effective tool in the transfer of culture. Since it is also an aesthetic object in terms of its cover, page layout and text-visual relationship (Sipe, 2001a), it brings students together with art. As children's gateway to the world outside the family (Körükçü & et.al, 2016), picture books, thanks to the themes conveyed through linguistic and visual constructions, make children intuit social and universal values (Sever, 2013) and develop their imagination and research skills (Samur, 2018). Picture books have the capacity to construct and use words and visuals by combining them. Both complement each other and produce a meaning together (Leppälähti, 2015). This meaning is integrated with the active role of the reader, encouraging critical enquiry and expanding aesthetic, cognitive and emotional experience (Arizpe, 2021). In other words, the meaning created by the combination of text and visuals enables the child to go beyond the experiences gained during reading and creates a basis for new discoveries.

Many children are first introduced to art through observing stories and drawings that an adult reads to them from a picture book. Such reading experiences provide opportunities to introduce children to the world of visual art (Sipe, 2001b), especially teaching about past artists, specific artistic styles or art schools, enriching children's ability to appreciate art (Hsiao, 2010). Of course, experiencing a work of art in a museum gallery is certainly different from experiencing it in the illustration of a picture book (Serafini, 2015). However, picture books make art accessible to children as they open a symbolic space to think critically about works of art and physically interact with them (Dinç & Veryeri Alaca, 2021). To put it another way, the contact with artworks through picture books encourages children to visit museums. In this way, picture books about art and museums create dynamics that feed each other.

Picture books that include fictional visits to museums or in which a museum serves as a setting for a fantastic adventure (Serafini, 2015) can enhance the museum experience as well as create reflective and creative experiences related to art (Yohlin, 2012). Such picture books, which are mostly about museum visits, the idea of creating their own museum, or activities and practices in the museum, provide information about discovering and protecting cultural artefacts and aim to increase children's interest in museums (Başoğlu, 2022). The use of these books by visual arts teachers can help children deepen their understanding of cultural objects/works of art inside or outside museums (Kiefer, 1991 as cited in Hellman, 2003) and strengthen their awareness of cultural heritage. In the literature (Alpagut, 2022; Dinç and Veryeri Alaca, 2021; Hsiao, 2010; Serafini, 2015; Sipe, 2001b; Yohlin, 2012), there are studies showing that picture books about museums are effective in increasing students' awareness of cultural heritage and encourage them to visit museums. No study has been found, however, on students' designing their own museum-themed picture books. In order to take the idea of using picture books with museum content in art lessons one step further, this study focused on the design of their own picture books by students studying in the visual arts teacher training programme. In this framework, the question "What are the experiences of students (visual arts teacher candidates) from the process of designing museum-themed picture books?" was attempted to be answered.

Method

Research Pattern

The research is a case study in which the experiences related to the process of creating a picture book about the museum are analysed. In case studies, a special situation such as an individual, a programme, a school is determined (Yıldırım & Şimşek, 2011). The unit of analysis is the determinant in the case study design (Merriam, 2018). In this study, the students who participated in the application were considered as a case, and the students' experiences related to the picture book application were determined as the unit of analysis. Due to the focus on a single unit of analysis, "holistic single case design" was used in the study.

Study Group

The study group of the research is 27 students attending the "Museum Education" course in the visual arts teacher training programme of a faculty of education. The research was conducted with a homogenous group. In homogenous sampling, small and homogenous groups are studied in depth (Patton, 2014). The students in the study group were admitted to the school with an ability exam and were studying in the same class. Therefore, it was assumed that they have similar characteristics in terms of knowledge and skills.

Implementation process and collection of data

The research data consist of data collected during and at the end of the implementation process. The implementation process included four weeks of museum-themed picture book design activities. Due to the duration of the implementation and the multidimensional nature of the process steps, group work method was used to progress with the designs. This decision was also influenced by the fact that collaborative work in artistic practices provides skills such as cooperation, sharing and taking responsibility (Bobick, 2009; Mamur Yılmaz, 2015; Yılmaz, 2007). The groups were determined by the students' preferences and 13 groups were formed in pairs, and one student did not want to participate in any group and wanted to work alone. In the next stage, each group chose a museum for the design and examined the museum in terms of its history, spaces and exhibited artefacts. The students were also allowed to examine examples of picture books before the design. The groups themselves planned all stages of the implementation process such as writing the story, illustrating, designing the cover, creating the page layout and assembling the pages. The researcher provided guidance when the students asked for opinions or when they had difficulties.

The process data were collected through student diaries reflecting the experiences in the picture book design implementation steps and field notes in which the researcher observed what happened in the environment. Individual documents reflecting the views of the participant are a data collection tool used in qualitative research according to Merriam (2018). Student diaries (Arslan & Ilgin, 2011), which enable students to present their experiences about the process in writing, were considered as documents. The diaries were written jointly with the group students, and it was stated that they could include the experiences, learnings, trials, newly encountered situations and emotions in the lesson that day from the moment the application started. Field notes, which are an effective tool in structuring case studies and thematic cross-case analyses (Patton, 2014), were evaluated as another process data of the research. The researcher noted his observations about the critical situations experienced in the environment during the whole implementation process. For the post-implementation data, the Process Evaluation Form (PEF) consisting of the following questions was used to reveal the students' experiences about the whole process.

1. *Which steps did you follow while preparing the museum themed book? Which processes did you go through?*
2. *What did you learn during the process of creating the book?*
3. *What were the conveniences and difficulties you experienced in the process of creating the book?*
4. *What were the things you enjoyed and disliked in the process of creating the book?*
5. *What kind of feelings did you have while preparing the book?*
6. *What kind of effect do you think this book you prepared will have on you in your teaching life?*

"Process Evaluation Form" was developed by the researcher and presented to two field experts for validity study. After the opinions received, the form was finalised by rearranging it. Three students who participated in the application were allowed to read the questions in the form, it was determined that they were understandable and made ready for use.

Analysing the data

The data were analysed by content analysis. The data set consisting of group diaries, field notes kept by the researcher and process evaluation form were analysed as research data.

Content analysis is a deep analysis process in which similar data are collected under certain concepts and themes (Yıldırım & Şimşek, 2011). In order to ensure reliability in the analysis process, the researcher worked with a field expert. The researcher and the field expert coded the data set independently of each other in the same time period, and a draft code list was determined. In the next stage, both experts came together and determined common codes. The code list was finalised by reaching a consensus on the different codes identified. The finalised similar codes were grouped under sub-themes and themes associated with the content of the application. The determination of direct quotations in the data accepted as research findings was also carried out with the joint decision of the researcher and the field expert.

Abbreviations were made to define the data source of the codes reached after the analysis. The student diaries written by the group members were expressed as GD, the field notes containing the researcher's observation notes were expressed as RON, and the process evaluation form was expressed as PEF. The students and groups in the study group were given with separate abbreviations, and direct quotations were presented in a way to show the data source of the relevant code and the code names of the students and groups.

For example, the direct quotation given as "We've been tweaking the story this week." (G11, GD3) reflects the statement of the student coded G11 in the diary written by the group students in the third week of the application, and the direct quotation given as "...I learnt the steps of the story." (S22, PEF) reflects the statement of the student coded S22 in the process evaluation form.

For the study, ethical permission was obtained from Giresun University Social and Human Sciences Research Ethics Committee (23.04.2020 dated and 44079388-050.01.04-E.20981numbered).

Findings

The research findings were explained under three themes: *design process studies*, *learnings in the design process*, and *experiences in the design process*. *Design process* includes preliminary research, pre-design preparations and design realisation. *Learning in the design process* consists of individual learning and professional learning. *Experiences in the design process* include the ease/challenges experienced and the emotions arising in the process. The theme and sub-themes including the experiences in the design process of the museum themed picture book are given in Figure 1.

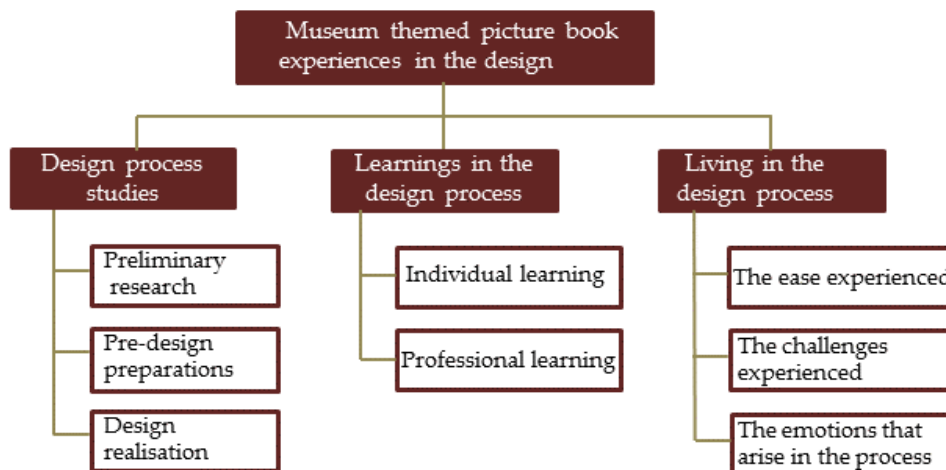


Figure 1. The theme and sub-themes of the experiences in the design process

The design process studies

Picture book design process studies consisted of the sub-themes of preliminary research, pre-design preparations and design realisation. Sub-themes and related codes are given in Figure 2.

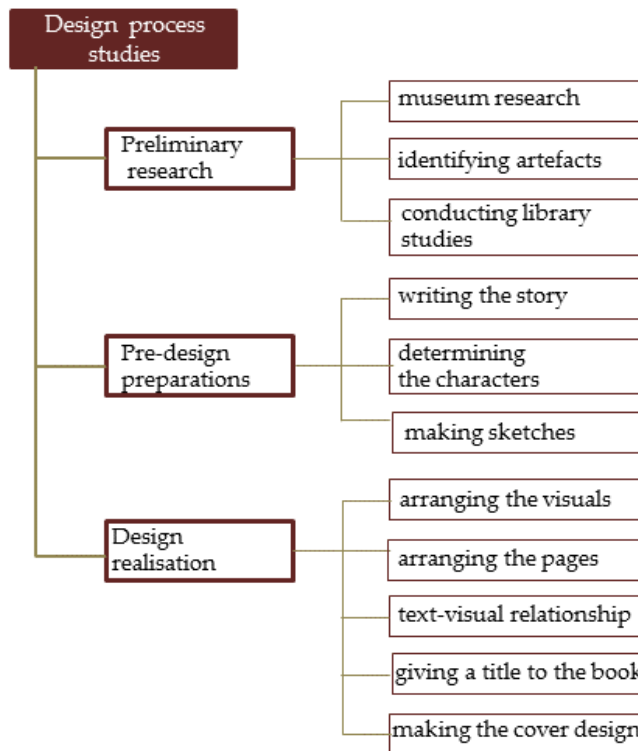


Figure 2. Sub-themes and codes under the design process studies

The preliminary research in the picture book design process studies consisted of *museum research*, *identifying artefacts* and *conducting library studies*. The students carried out the pre-design museum research by visiting real and virtual museums. In the process, three groups made investigations in real museums and the other groups in virtual museums. For example, student coded S2 stated that they made investigations in the real museum with the statement "We went to visit the museum that will be the subject of our book." (PEF). Student coded S7 said, "I examined the museum in detail over the internet." (PEF) and student coded S22 said, "We got detailed information about the museum. We investigated which sections and which period artefacts exist in the museum." (PEF), and reported that they examined the museum, which is the subject of the book design, in detail with the virtual museum trip.

Picture books about the museum have a role in preparing especially preschool and primary school students for museum visits (Başoğlu, 2022). Therefore, books should reflect the museum effectively. The above-mentioned statements indicate that students consider it a necessity to make detailed analyses about the museum for the design of picture books that will attract children's attention.

Another preliminary preparation in the design process was the determination of the artefacts to be used in the picture book. For example, the students of the coded group stated that they would include the most remarkable and symbolic artefacts in the museum in the book with expressions such as "The favourite artefacts in the Samsun Museum we examined were determined" (G9, GD1) and "...we decided on the Çingene Kızı Mausoleum, which is one of the most important pieces of the museum we chose." (G10, GD1), "We wanted to include some works that attracted our attention from the installation works within the scope of the current exhibitions of the museum in our booklet." (S25, PEF).

The inclusion of works of art in children's picture books evokes enthusiasm and appreciation that enhances the museum experience (Yohlin, 2012). The students stated that they took care to ensure that the artworks chosen for the book design would encourage children to visit the museum.

Before the book design, some students also made preliminary preparations with library work. In particular, they made use of the library to create a background on how the characters in the story could be visualised. For example, the students in the group coded G12 stated this process with expressions such as "We went to the library to see more examples." (GD2), and the student coded S6 said, "We examined the characters of children's books in the library and made sketches." (PEF).

Pre-design preparations included *writing the story, determining the characters and making sketches*. In the process of writing the story, the students benefited from picture book examples, for example, "We researched sample stories for the story we were going to create. We reviewed the museum's collections." (G2, GD2). The student coded S18 stated that the stories were constructed based on the interaction with the artefacts in the museum with explanations such as "We talked about how we could attract the attention of the students with a story in our museum book" (PEF), student coded S24 said, "The visuals we chose were remarkable for children and a story was created based on the artefacts." (PEF) and student coded S25 said, "...we narrated a day a child spent at Istanbul Modern by combining it with his/her imagination and installation works...".

The subject of picture books should be exciting and intriguing (Sever, 2013). As can be seen from the above statements, the students paid attention to the content that would attract children's attention and enable them to connect with the museum while writing the stories.

Determining the characters and making sketches within the scope of pre-design preparations progressed in coordination. For example, the group students coded G6 stated that the sketches were made in harmony with the story and said, "We worked to make our story and characters compatible." (GD2). Group students coded G9 said, "Since the character draws attention to himself, he should be made calmer. We decided that the artefact should be brought to the forefront." (IG2), and explained how to draw attention to the artifacts in the museum in the book, on the other hand, the students in the group coded G2 reported that the places to be used in the pages were also visualised with the statements such as "We determined our characters. We determined the places we would use in the story and made sketches." (GD3).

Characters in picture books are tools for children to emulate and identify with (Sever, 2013). Therefore, the students' analysing examples for the books they designed can be interpreted as an effort to create a character that will strengthen interaction with the museum. On the other hand, considering the effect of sketching in facilitating the establishment of new connections (Yılmaz Satılmışoğlu, 2022), making sketches of the characters, artefacts selected from the museum and places to be included in the book can create foresight in students, especially in terms of page layout.

Realisation of the design includes *arranging the visuals, arranging the pages, creating a text-visual relationship, giving a title to the book and making the cover design*. At this stage, the students organised the illustrations to be included in the book by combining the sketches of the figures, artefacts and places selected from the museum. They explained the process of organising the illustrations as follows: "As the drawings are made, the missing areas will be filled with more artefacts. The writing area will occupy a small space, that general area will be reserved for the artefacts." (G9, GD4), "We illustrated all of them one by one according to the places in the story. Finally, we coloured our book and ..." (S7, PEF) and "In the next process, we started to gradually pass the original by looking at our draft." (S21, PEF).

The pictures in children's books play an important role in the formation of characters in child's mind (Fang 1996 as cited in Gönen & et.all., 2012). In the books created, the students stated that they preferred to illustrate the artefacts selected from the museum in a way to highlight them, and that they preferred to include

visuals rather than text on the pages. In this way, strengthening the memorability of the artefacts in the museum was tried to be accomplished.

At the stage of organising the pages, the students observed harmony between the visuals, writings and spaces on each page. The students made explanations about the process such as *"We determined the order of the story and decided what happens on which page."* (G4, GD4), *"After the drawing and colouring were done, we pasted the texts we wrote on the storybook according to the number of pages."* (S1, PEF). For example, the student with the code S11 said that attention was drawn to the artefacts selected from the museum on the pages: *"Figures and artefact sketches were placed by arranging the pages. The artefact was brought to the foreground to draw more attention to the book."* (PEF).

In picture books, the gaps on the page edges and the proportional harmony created by them together with other elements on the page provide the page layout (Sever, 2013). As can be seen in the explanations, the students paid attention to the harmony in the areas where the visuals and texts are located for the page layout in the books they created, and therefore approached the study with aesthetic concerns.

The students explained that the text and visuals on each page of the book were associated in a way to ensure integrity as follows: *"After our pictures were ready, we wrote our story on clean papers and placed them in the parts with appropriate pictures on the page."* (S2, PEF), *"We created the museum book by paying attention to the visual and where the story were written."* (S24, PEF). It is possible to see that the harmony of each page consecutively with each other is observed in the following explanation of the student coded S5. *"We started to write our sentences appropriately by selecting parts from the story we wrote and matching them with the numbered pages. When the pages were turned, we made sure that there were no disconnections in the story and pictures."* (S5, PEF)

The visuals in picture books should be in a way that facilitates understanding the text (Yurt, 2011). The students' statements reflect that the content of the text on each page of the book is intended to be given in integrity with the visuals on that page, and therefore, efforts are made to ensure harmony between text and visuals.

The students gave titles to the book that reflected the main protagonist of the story, the child, or a symbolic artefact in the museum, and took care to make the title attractive. The cover design was made after the whole book was illustrated. This was also guided by the researcher. This was written in the researcher's diary: *"There were many questions about the cover design. I said that the design reflecting the whole content would be possible only after illustrating the whole book."* (RON4). The students stated that they paid attention to the cover design to be attractive and to consist of visual elements compatible with the content: *"We prepared the cover of the book with eye-catching colours ..."* (S3, PEF), *"Finally, we prepared the cover of the book using the picture of the main character."* (S4, PEF), *"The cover design was made suitable for the subject."* (S16, PEF).

The visuals on the covers of illustrated storybooks should be designed and coloured in an interesting and remarkable way to direct the child's attention to the book (Oğuzkan, 2013). The students' explanations show that the designs of the book covers refer to the museum with text or visuals and use eye-catching colors.

Learning in the picture book design process

Learning in the picture book design process was explained with two sub-themes as individual and professional learning. The codes associated with these sub-themes are given in Figure 3.

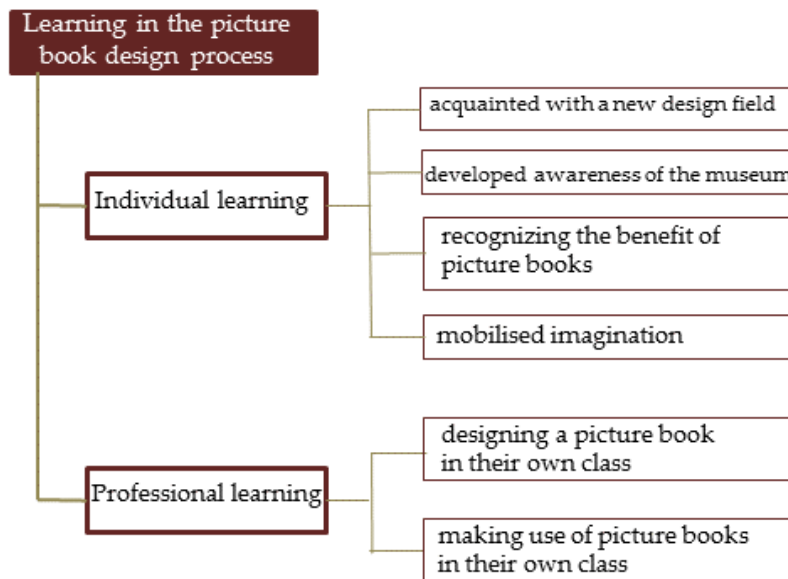


Figure 3. Sub-themes and codes under the learning in the picture book design process

The museum-themed book design enabled students to get acquainted with a new design field. Yohlin (2012) states that picture books create an aesthetic experience in the reader because they have an artistic value in themselves. As a matter of fact, in this process, students went beyond being readers and the picture book turned into an artistic production experience. For example, *“I had no idea because I had never designed a storybook before. I learnt by doing. How the research dimensions would be, examining the artefacts, creating a story through them.”* (S5, PEF), *“In the process of creating the book, I learnt how to create characters and book cover, how to create the design of the book.”* (S7, PEF) and, *“I learnt what to pay attention to in sketch design, placing on paper, planning and painting.”* (S11, PEF).

The fact that the books were about museums primarily forced the students to conduct research on the museum of their choice, thus creating an effect that developed awareness of the museum. The students stated that they examined museums more consciously and in depth thanks to the book design as follows:

“I learnt the history of the museum, by whom it was built, the sections of the museum, which artefacts are in which section and to whom the artefacts belong and in which period the artefacts were made.” (S15, PEF)

“I learnt that visiting museums and examining the artefacts is a very subtle job or consciousness, what we should pay attention to in the artefacts exhibited in museums, and how museums develop us.” (S24, PEF)

Involving students in art projects that can interact with cultural heritage elements enables the construction of cultural identity in them (Ivon & Kuscevic, 2013). The above statements show that the fact that picture book designs, which are also an artistic practice, take their subject from the museum strengthens the students' ties with the museum. Thus, a positive effect on awareness of cultural heritage can also be said.

The experience they gained from the book design process also raised students' awareness about the benefits of picture books. For example, the student coded S3 said, *“I learnt how we can convey a museum to children through a book and provide them with information.”* (PEF), and the student coded S14 said, *“I learnt that every museum should have such a book to instil museum awareness in children and how museums should be visited and what kind of place they are.”* (PEF). The student coded S8 said, *“It was a museum that I had not been to before, I had no idea about its atmosphere, structure and style. With this book, I tasted the atmosphere of the place in a way.”* (PEF) explained this situation through his own experience.

Picture books based on works of art provide opportunities to introduce children to the world of visual art (Sipe, 2001b). The above statements show that the students realised the benefits of museum-themed picture books for children.

The design process also created an effect that mobilised students' imagination. For example, the student coded S6 said, *"Creating fiction, creating different characters, briefly using my imagination and creating a book."* (PEF) and student coded S21 said, *"I created visuals at the level of children by adding my imagination to my feelings and thoughts. This enabled me to learn how much I pushed my imagination and my limits."* (PEF) and stated that they learnt how to use their imagination in the process. Picture books have an effect that develops children's imagination (Yağlı, 2022). As a matter of fact, students had this experience by designing the book.

The students stated that they would transfer the experiences they gained from the picture book design process to their professional lives by designing picture books in the visual arts course and making use of picture books in the course. They explained their reasons for having such an application in their professional life with the belief that they found picture books useful for teaching art, museum and cultural heritage to children. Some examples of the students' explanations on this subject are as follows:

"In my teaching life, I will have my students prepare booklets like this while teaching about a museum. In this way, students can realise permanent learning by interacting both about the museum and the artefacts." (S15, PEF)

"I would like to have my students do this kind of work in the future. By preparing the acquisitions related to this subject, it will contribute to providing students with information about cultural heritage." (S19, PEF)

"They will learn about the connection of art with the museum and its connection with our cultural heritage, just like we have learnt." (S24, PEF)

They explained that they could benefit from the picture books on museums, with or without their own designs, in the visual arts course with the effect of preparing children for museum visits and teaching cultural heritage and art. Some of the students' statements are given below:

"It would be important in terms of collecting information for students before going to a museum..." (S20, PEF)

"I think it will contribute to teaching cultural heritage to students. Thanks to this booklet, I think it will be an important factor for students to learn their history and culture." (S18, PEF)

"When I become a teacher, this book will contribute a lot to my students' learning outcomes such as cultural heritage, local culture and museum presentation." (S22, PEF)

"In particular, we have included Antony Gray's works in our book, both contemporary and non-current works that have attracted a lot of attention. I think it is a good study that will integrate modern arts and children." (S25, PEF)

Museum-themed books enable children to discover cultural artefacts (Başoğlu, 2022). For this reason, they are useful resources for art teachers to use in their lessons (Kiefer, 1991 as cited in Hellman, 2003). The above statements show that the benefits of museum-themed picture books for children are important enough for students to transfer them to their professional lives. This situation indicates that students are aware of raising generations that are sensitive to art and cultural heritage.

Living in the design process

The experiences in the picture book design process are as follows: the ease/challenges experienced and the emotions that arise in the process. The codes associated with these sub-themes are given in Figure 4.

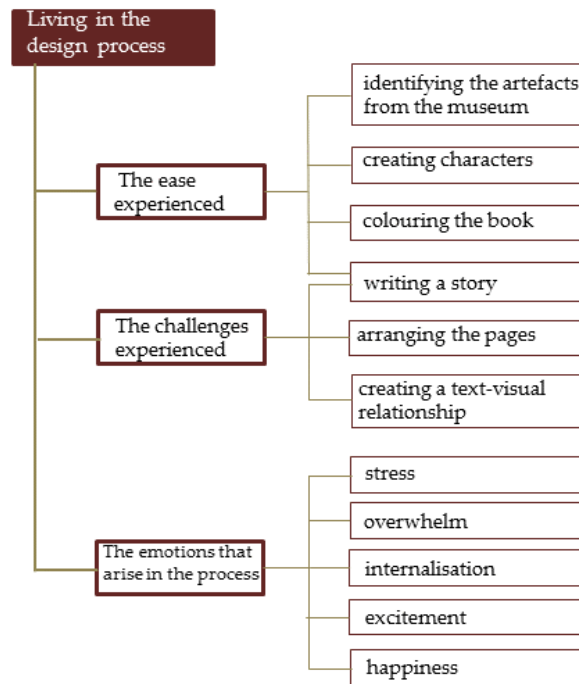


Figure 4. Sub-themes and codes under the living in the design process

The ease and difficulties experienced differed according to each student. For example, while writing a story was easy for some students, it was difficult for others. Some students evaluated identifying the artefacts from the museum, writing a story, creating characters and colouring the book as the conveniences experienced in the process. For example, the student coded S22 said, “...seeing all the artefacts alive made it very easy for us.” (PEF) drew attention to the convenience provided by the real museum visit while identifying the artefacts. Similarly, the student coded S2 emphasised the ease provided by the real museum visit in writing the story with the statement: “We did not have any problems in writing our story, this part was easy for us because we personally examined and saw the place where the event took place.” (PEF). As for creating the characters and colouring the book, for example, the student coded S5 said, “I think the ease we experienced was creating and colouring the character.” (PEF), and the student coded S15 said, “It was easy for us to make the illustrations of the book, colour it and transfer the story to the book.” (PEF).

The story writing phase was the most prominent challenge in the process. Some students evaluated page layout and creating a text-visual relationship as the difficulties experienced in the process. The students described the difficulty experienced in the story writing stage as follows: “...in the second hour, we reflected on our story and made certain changes. We realised that we were deficient in this regard.” (G5, GD2), “The most difficult part was creating the story.” (S4, PEF). The researcher also reflected this situation in the observation notes as “They determined the artefacts they would use, but I think writing the story will be a little difficult.” (RON2). The difficulties encountered at the stage of creating page layout were also expressed with explanations such as “While creating the booklet, we had difficulties during planning about how to make page arrangements and designs and where to put them” (S16, PEF), and the difficulties experienced at the stage of creating text-visual relationship were expressed with explanations such as “The difficult part was to organise the pictures suitable for the story.” (S2, PEF).

The difficulties and conveniences experienced in the design process were also reflected in the affective reactions of the students, for example, the difficulty encountered during the page layout process caused the student to dislike that stage, while the convenience experienced during the illustration stage of the book gave pleasure to the student.

The design process created emotions such as stress, overwhelm, internalisation, excitement and happiness in the students. For example, the stress experienced in the process was expressed as *"We had a lot of stress while creating our book, but we managed to finish it by being patient."* (S1, PEF), and the feeling of being overwhelmed was expressed as *"Although the confusion of thoughts and ideas in the first stages overwhelmed me a little, it did not prevent me from completing it."* (S17, PEF). The internalisation of the designed book was reflected in expressions such as *"I constantly thought that this work was read by a student, a child, the facial expression while reading, I considered these things."* (S8, PEF), *"While creating the book, I felt as if I was the child in the main character, as if I was walking around that museum and talking to the artefacts."* (S22, PEF). The excitement of the process was explained as follows: *"Creating a story book for the first time excited me."* (S15, PEF). Students experienced the feeling of happiness the most in the process. For example, *"While preparing this book, I felt happy because it is a work that introduces museums for children and those who do not have the opportunity to visit museums and gives children a kind of tour of the museum."* (S4, PEF), *"I experienced the feeling of happiness while creating the book. Because the work we did became remarkable and useful."* (S10, PEF) emphasised that they experienced a sense of happiness arising from doing a useful work.

Discussion, Results and Recommendations

This study examines the experiences of pre-service visual arts teacher students in the museum education course through the process of designing a museum-themed picture book. It is aimed to show the effect of picture books on understanding the importance of museums, thus how they play a role in raising awareness of cultural heritage and how they can transfer their experiences in this process to their professional lives. For this purpose, students were first asked to explore the artefacts in a museum and create a picture book about the value of cultural heritage through a story integrated with these artifacts.

Narratives consisting of text and visuals in picture books have an important role in cultural heritage transmission because they facilitate children to establish meaning relations (Veryeri Alaca and Karaoğlu, 2022). Therefore, they are an effective resource that teachers can use in their classrooms (Hsiao, 2010). In this study, pre-service teacher students took the use of picture books prepared by professionals one step further and grasped the necessity of museums for the continuity of cultural heritage through the picture book they created themselves. During the book design process, the students made real or virtual examinations in the museum they determined as a priority and collected written and visual information. They took care to make the artefacts to be included in the book eye-catching. They wrote a story integrated with the artefacts they selected from the museum and visualised the characters and places in the story by making sketches.

According to Amelia Wong, stories expand people's perspectives and give people an idea of what it might be like to experience the events in the narrative (Whitney, 2023). Therefore, stories facilitate the internalisation of the artefacts in the museum. Mamur (2015) states that mythological stories are effective in the connection that students establish between the artefacts in the museum and their own lives. This study concluded that the students realized the power of stories, and accordingly, they took care to write stories that would make children love the museum and provide contact with cultural artefacts. The story writing stage of the design process had an effect on developing students' imagination, which is similar to Tuna's (2018) research result that creative writing activities for artefacts in the museum developed the imagination of visual arts teacher candidates.

Picture books have an aesthetic value beyond the benefits they provide (Sipe, 2001a). The attractiveness of the book cover, the quality of the colours used in the book, picture-text harmony and page layout are the elements that determine the aesthetics of the book (Yıldız, Yazıcı, & Durmuşoğlu, 2016). Picture books should have an artistic value as they create an aesthetic experience in the reader (Yohlin, 2012). The design of the museum-themed picture book brought students together with a new design field and led them to produce an aesthetic product that they had not experienced before. They constantly experimented, used their creativity,

and made efforts to increase the aesthetic value of the book at various stages such as illustration, page layout, and cover design.

One of the individual learnings that students obtained from the picture book design process is the development of awareness towards the museum. According to Başıoğlu (2022), picture books about museums have the effect of strengthening children's museum experience. The students experienced this effect by designing a book, and they discovered the necessity and usefulness of museums through the museum examination before the design. Realising the benefits of picture books for children is another individual learning of the students. This awareness led them to write stories and create visuals by considering the suitability for children.

The book design process provided students with professional learning such as having children design picture books in the visual arts course and making use of picture books in the course. According to Buyurgan & Mercin (2005), the stories written by primary and secondary school students about the artefacts in the museum bring them closer to the artefacts. Museums also offer new opportunities for artistic practices (Erim, 2005) and artistic activities strengthen children's awareness of cultural heritage (Ivon & Kuscevic, 2013; Türkcan, 2019). The picture books created within the scope of this study allowed students to use the story and the artefacts in the museum together and turned into an artistic production for students. Therefore, their desire to have such an application done by their own students can be explained by the fact that they found picture book design useful and meaningful. Zalar (2021) mentions the benefits of introducing children to museum picture books and developing book illustration projects involving them in order for children to connect with the richness of cultural heritage. In this study, pre-service teacher students showed a similar approach and stated that they wanted to benefit from museum-themed picture books to teach cultural heritage and art to their own students.

Illustrating and colouring the book were conveniences experienced in the process. Although the students encountered difficulties in the stages of writing a story, creating a page layout and associating text and visuals, they made an effort to overcome them. In addition, while the process caused negative emotions such as stress and overwhelm in some students, it also created emotions such as internalisation of the work and excitement. Depending on the belief of creating a useful work, the feeling of happiness came to the fore the most.

Museum education has a rich history. However, in order for this field to continue expanding, new research and content inclusive of all stakeholders are needed (DiCindio, 2019). For this purpose, cultural heritage trainings have become widespread, including museums (VEKAM, 2022). For example, with the "Anatolia Before You Project Education Set Books" project led by the Museum of Anatolian Civilisations, an education set was prepared to teach children at primary school level about the civilisations that lived in Anatolia from the Chipped Stone Age to the present day (Alpagut, 2022). Considering the experiences gained by the students from the implementation process of this research, it is possible that such projects can be expanded by including pre-service teachers in order to raise generations with cultural heritage awareness.

Based on the results obtained from the research, including museum-themed picture book design practices in the museum education course of the visual arts teacher training programme is recommended. In addition, comic books, which are an effective tool in developing artistic knowledge and skills (Graham, 2008), can also be used for a design application in this course. Considering the increase in the tendency towards intangible cultural heritage museums in the world (Ferrer-Yulfo, 2022), students can be made aware of intangible cultural heritage by making comic books (Adıgüzel, 2017) and picture book designs within the scope of museum education course. Thanks to digital technologies, illustrated storybooks can be transferred to augmented reality applications (İğit, 2023), which can be considered as an option for illustrated books on museum themes.

This study was conducted in the museum education course of the visual arts teacher training programme. Museum-themed picture book design practice through appropriate content arrangement can also be used in museum education integrated with art courses at secondary and high school levels and experiences of the students can be revealed.

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Bibliometric Analysis of Educational Research in Central Asian Turkic Republics


Research Article

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ABSTRACT

The purpose of this research is to perform a bibliometric analysis of articles in the field of education in the Central Asian Turkic Republic in the database Web of Science Core Collection. As a result of the analyses carried out, "Bulletin of the National Academy of Sciences of the Republic of Kazakhstan", which has published the most articles on education in the Central Asian Turkic Republic in the Web of Science database, is the most published author Kuzhabekova. A., Arpentieva and M. R., and Hernandez-Torrano determined that D. was the author with the highest h-index and Kuzhabekova was A. The most published and most cited institution was the Nazarbayev University in Kazakhstan, the first three countries producing the most articles were Kazakhstan, Azerbaijan, and Uzbekistan, and the most open country to cooperate with researchers in foreign countries was Kazakhstan. Education research in these countries has shown that themes such as systems, governance, reform, and educational policies are at the forefront. The Web of Science database did not find any article data for Turkmenistan. This research is expected to provide a comprehensive and detailed projection of education research in the Central Asian Turkic Republics.

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Keywords:

Central Asian Turkic Republics, Education, Educational Research, Bibliometry, Bibliometric Analysis

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Introduction

When the Russian Empire collapsed after the First World War, the Soviet Union, which was established in its place, became the ruler of all of Central and North Asia up to the Chinese border. After the occupation of the whole of Russia, the Red Army, which was formed following the Soviet Revolution in Moscow, headed towards Central Asia through the Caucasus and took the whole area called Turkestan under its control (Çeçen, 2021, p. 442). In the 1920s, the Turkic countries of Azerbaijan, Kazakhstan, Uzbekistan, Turkmenistan, Turkmenistan, and Kyrgyzstan, which were part of the USSR, developed within this state and under its general policies and direction. During this period, Turkic peoples were not given real freedom. During the transformation of Tsarist Russia into the USSR thanks to the Bolshevik Revolution, these nations succeeded in laying the foundation for the processes that would lead them to independence in the future. During the 70-year period of the USSR, the Turkic Republics accumulated state experience for their future independent life, created the foundations of national education, economy, industry, and agriculture, and prepared the ground that would allow them to develop their language and culture (Feyziyev, 2019, pp. 103-104). Within the administrative system of the Soviet Union and as a result of the collapse of the USSR, the Turkic Republics declared their independence one by one. With the collapse of the USSR, many opportunities emerged for the Turkic world in the field of education as well as in political, economic, and social fields (Topbaş & Baran, 2009).

Central Asian Turkic people and geography were culturally transformed first in Tsarist Russia and then in the Soviet Union. Russian culture was popularized with the policies implemented in the field of education. Russian became the lingua franca and even became a language spoken by the people in Central Asia more than their own languages (Gür, 2020).

With their independence in the early 1990s, the Republics of Kazakhstan, Kyrgyzstan, Uzbekistan, Azerbaijan, and Turkmenistan entered a rapid process of nationalization and the construction of national identity, and enacted new laws in the name of nationalization. Among the most important of these laws are the national education laws. These laws have provided the Turkic Republics with the infrastructure of an education system suitable for their own cultural structures (Gül, 2019). With the laws, changes were made in the structure and content of education in line with the requirements of the market economy. The goal of education is to meet the need for adequate specialists in all fields, to meet the demands of society, and to meet the demands of individuals to study (Alimbekov and Dumanaeva, 2017). The expectation of all countries from the education system is to raise citizens with universal human values who protect their own historical and cultural heritage.

Before the Soviet period, literacy rates were 0.6% in Kyrgyzstan, 2% in Uzbekistan, 1% in Kazakhstan, and 0.7% in Turkmenistan (Ari and Alimbekov, 2007, p.8). In terms of realizing compulsory primary education for all, the fact that the USSR made 44 nations literate will remain an important fact in world civilization. The most important shortcoming of Soviet schools was the limited connection with world education and pedagogy due to the colonialism, dictatorship, and censorship policy implemented by the government, and the inadequacy of foreign schools and pedagogy (Bolatova, 2019).

The first decade of the Turkic Republics was spent with the establishment, compilation, recovery, and structuring efforts in the field of education as well as in social, cultural, religious, political, military, and economic fields; the second decade was spent with change, development, modernization, and integration with the world countries (Alyılmaz, 2011, p. 9).

Continuous changes have been made in order to ensure that education programs, teaching materials, school equipment, and teaching aids reach the level of contemporary civilizations (Shiraz, Azizov, & Döş, 2017). In particular, inadequate and outdated material and technical infrastructure, educational plans and

programs, lack of new textbooks suitable for some branches, lack and insufficiency of educators, and financial problems are among the most common problems (Mammadov, 2008).

The Organization of Turkic States, established for cooperation between Türkiye and the Central Asian Turkic Republics, started its first contact in 2011 (<https://www.turkicstates.org/tr/organizasyon-tarihcesi>). Within the scope of this organization, initiatives were taken in 2012 for the Union of Turkic Universities. The aim of this union is to create a Turkic Council Higher Education Area and to ensure cooperation and development among university students in education, sports, and cultural fields. (<http://turkunib.org/tr/site/index/#member>)

The founding members of the Union are Azerbaijan Architecture and Construction University, Azerbaijan Medical University, Baku State University from Azerbaijan; Ahmet Yesevi International Kazakh Turkish University, Al-Farabi Kazakh National University, L. N. Gumilyev Eurasian National University, Nazarbayev University from Kazakhstan; Hüseyin Karasayev Bishkek University of Sciences, Kyrgyzstan Türkiye Manas University, International Kyrgyzstan University, Yusuf Balasagun Kyrgyz National University from Kyrgyzstan; Atatürk University, Ege University, Eskişehir Osmangazi University, and Istanbul University from Türkiye (Directive on Cooperation of Turkic Universities and Creation of Higher Education Area, 2013).

Today, 5 universities from Azerbaijan, 18 universities from Türkiye, 7 universities from Kazakhstan, 6 universities from Kyrgyzstan, 5 universities from Uzbekistan, and 1 university from Hungary are members (Organization of Turkic States Union of Turkic Universities, 2023).

Examining scientific studies in a certain field at certain intervals and in a comprehensive manner is very important in terms of revealing the general view of the field (Cüçük, 2017). With bibliometric studies, it is possible to obtain various findings on scientific communication by examining certain characteristics of publications. The effectiveness of scientific publications is generally revealed through bibliometric studies (Al, Soydal & Yalçın, 2010). Since the selected studies and their contents form the basis of the analysis of the research, bibliographic search is an important part of the process. In this study, the year of publication, language, type, institutions of the authors, sources of publication, citation analysis, and keywords in the articles in the field of education in Central Asian Turkic Republics in the Web of Science Core Collection database were determined as bibliometric indicators. For this purpose, research articles related to education in journals indexed in Social Sciences Citation Index (SSCI), Emerging Sources Citation Index (ESCI), and Science Citation Index Expanded (SCI- Expanded) indexes in WoS database were analyzed. In line with this purpose, answers to the following questions were sought.

When the literature is examined, it is seen that there are many bibliometric analysis studies conducted in the field of education. Some of those; Hebebcı (2021) research on distance education, Kuzhabekova et al, (2015) global research in international higher education, Karakuş et.al (2021) research on emotional learning and leadership in Asian countries, Yıldız et al, (2022) outdoor education, Demiryürek (2023) values education, Rodriguez Fuentes and Gallego Ortega (2019) special education research, Grosseck et al, education for sustainable development research, Aypat and Ertem (2022) research on student outcomes in higher education, Marti-Parreno et al, (2015) game-based learning. Hernandez-Torrano et al, (2021) conducted a bibliometric analysis of educational research in post-soviet countries. In our article, only the bibliometric analysis of educational research conducted in Central Asian Turkic Republics has been made.

1. What is the distribution of published research on education in Central Asian Turkic Republics according to years?

2. Which are the journals with the highest number of publications in the field of education in Central Asian Turkic Republics?

3. What are the h-indexes of the journals with the highest number of publications in the field of education in Central Asian Turkic Republics?
4. What is the number of articles and h-indexes of the most published authors in the field of education in Central Asian Turkic Republics?
5. Which are the most globally cited articles in educational research in Central Asian Turkic Republics?
6. Which institutions in Central Asian Turkic Republics publish the most and are the most cited?
7. What is the distribution of the countries of the responsible authors and the number of articles in educational research in Central Asian Turkic Republics?
8. How is the cooperation of researchers in Central Asian Turkic Republics with researchers in other countries in the field of education?
9. What are the most used words in educational research in Central Asian Turkic Republics?
10. What are the most used keywords in educational research in Central Asian Turkic Republics?
11. What are the author co-citation networks and clusters in educational research in Central Asian Turkic Republics?
12. What is the thematic map of the titles of the studies on education in Central Asian Turkic Republics?

Methodology

This research was designed in the survey model. The survey model is a research model that aims to describe a past or existing situation as it is and defines the event, individual, or object that is the subject of the research as it is within its own conditions (Karasar, 2011, p.77). The aim of the scanning model is to describe the existing situation related to the research subject. In line with this purpose, data are collected with data collection tools determined by the researcher and presented to the reader in the form of percentages and frequencies and the research is finalized (Büyüköztürk et al., 2012). This research was conducted as a bibliometric analysis of the articles in the category of educational research conducted in the Central Asian Turkic Republics as a result of the search in the WoS database. The WoS database was chosen for this study because it presents the category of educational research as a separate category from the general category of social science research. Bibliometric analysis includes different qualitative and quantitative literature review approaches to understand and organize previous findings. This analysis is based on a systematic, transparent, and reproducible review process based on the statistical measurement of science, scientists, or scientific activities. Bibliometric analyses are carried out to identify conceptual developments in a subject area, trends in researchers over time, themes researched, changes in the boundaries of disciplines, identify the most productive academics, institutions or countries, and present the "big picture" (Aria & Cuccurullo, 2017). Bibliometric research provides researchers with an in-depth understanding of research areas and enables them to make more rigorous and quantitative assessments in any field (Zupic & Cater, 2015).

Research Object

The research object of the study comprises articles in educational journals accessed by searching the Web of Science Core Collection (WoS) database using the keyword "education". Researchers sort their searches in databases according to different parameters. The Web of Science database allows users to limit results by author, source, year, subject area, document type, institutions, countries, funding agencies, and languages, and to include or exclude these criteria (Aghaei Chadegani, et al. 2013). In line with the focus of the research, the countries in the Wos database were first limited to Azerbaijan, Kazakhstan, Kyrgyzstan, Uzbekistan, and Turkmenistan. Afterward, only documents in the field of educational research and article type were included in the research object. The articles analyzed in the study are the publications of researchers working in Central

Asian Turkic Republics in the field of education in journals indexed in SSCI, A&HCI, SCI-EXPANDED, and ESCI indexes. As a result of the limitations made, a total of 814 publications were reached in the Wos database. With the exclusion of "article; book", "article; book chapter", "article early access" and "article; proceedings paper" type documents, 765 articles constitute the research object of the study. These studies were conducted between 1992 and 2022. Since we are still at the beginning of 2023 on 25.02.2023, the date of the data extraction, and in order to clearly reveal the status of educational research by years in the study, the study data was limited to the data at the end of 2022. As a result of the data obtained for the subject area scanned within the scope of the research, this date was chosen as the starting date since the first article in the database was published in 1992. In addition, there is no article data from Turkmenistan in the Web of Science Core Collection database. It can be said that this situation stems from the fact that Turkmenistan is a more closed country compared to other Turkic Republics in Central Asia.

Data Collection and Analysis

In bibliometric studies, Science Citation Index (SCI), Social Science Citation Index (SSCI), Emerging Sources Citation Index (ESCI), and Art & Humanities Citation Index (A&HCI) constitute the most important data set sources as they are international citation indexes. In this context, the research was conducted through the Web of Science Core Collection database since it is the database that provides access to these indexes (Güzeller & Çeliker, 2017) and the bibliometric analysis system run through R-Studio and VOSviewer programs is compatible with this database. As the research object, 765 articles were taken from the WoS database in the form of "plain text" files, and the analyses were carried out on this material through the VOSviewer program and the "bibliometrix" package of the R program through the <https://cran.r-project.org/> open source site of the R program by uploading it to the RStudio program. In this study, it was preferred to use both VOSviewer and R programs for better visualization of the data, the complementarity of the data, and mutual control. In this database, the distribution of 765 articles related to the research topic by years, the average number of citations, journals with the most publications, authors with the most publications, h-indexes, scientific productivity of countries, collaboration networks, word cloud and thematic maps of research titles were included.

Findings

As a result of the bibliometric analysis of the studies on educational sciences conducted in the Central Asian Turkic States in the Web of Science database, a total of 765 articles were reached. The distribution of the studies according to years is given in Figure 1.

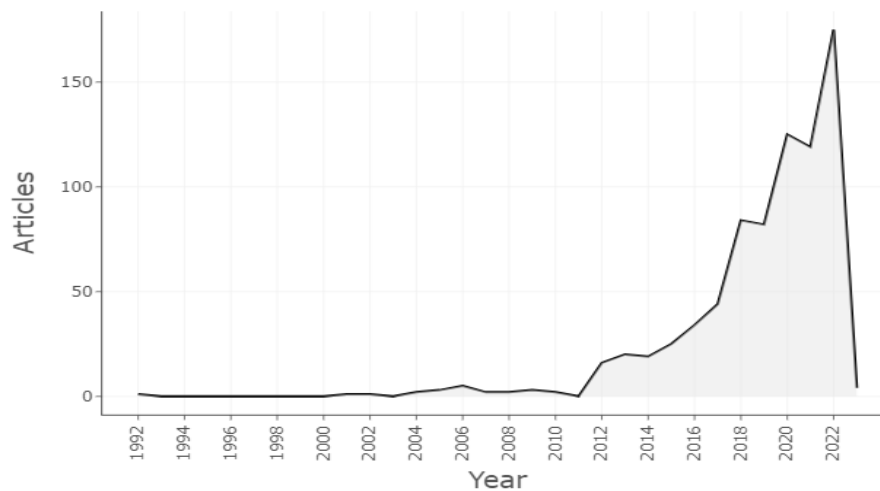


Figure 1. Scientific production by years

The number of articles published by year is given in Table 1.

Table 1. Distribution of number of articles by years

Years	Article Count (n)	Percent (%)
1992-2001	2	.25
2002-2012	36	4.70
2013-2022	727	95.05
Total	765	100

When Table 1 is examined, it is determined that the first educational research in the WoS database in the Central Asian Turkic Republics started in 1992 when these countries gained their independence. The first article in the Web of Science database in the field of education from the Central Asian Turkic Republics is the article titled "What Night School Should Be Like" published by A. F. Dakhtler in the journal "Russian Education & Society" in 1992. It is seen that most articles were published between 2013-2022 (n=727) in the related countries. Articles published after 2013 constitute 95% of total publications. This finding can be interpreted as an extraordinary increase in educational research in Central Asian Turkic Republics in the Web of Science database in the last 10 years and a general increase in academic quality in these countries.

Table 2. Journals with the most publications

Journal	Article Count (n)
Bulletin of the National Academy of Sciences of The Republic of Kazakhstan	122
International Journal of Early Childhood Special Education	55
Ad Alta-Journal of Interdisciplinary Research	41
International Journal of Emerging Technologies in Learning	39
European Journal of Contemporary Education	20
Revista Universidad Y Sociedad	16
Thinking Skills and Creativity	15
Modern Journal of Language Teaching Methods	14
Revista On Line De Política E Gestao Educacional	13
Education and Information Technologies	12

By searching the key concept of "Education", it was determined that the articles in Central Asian Turkic Republics were published in 223 different journals. Among the journals in which articles in this field were published, Bulletin of the National Academy of Sciences of The Republic of Kazakhstan (n=122) ranked first, International Journal of Early Childhood Special Education (n=55) ranked second, and Ad Alta-Journal of Interdisciplinary Research (n=41) ranked third. These data represent the number of publications in the journals. Based on this finding, it can be interpreted that researchers who conduct or intend to conduct research in the field of educational sciences in Central Asian Turkic Republics can follow journals that are effective in this field.

Table 3. H-Indexes of journals published by researchers in central asian turkic republics

Journal	h-indexes
Bulletin of the National Academy of Sciences of The Republic of Kazakhstan	7
Plos One	6
International Journal of Emerging Technologies in Learning	5
Thinking Skills and Creativity	5
Ad Alta-Journal of Interdisciplinary Research	4
Higher Education	4
International Journal Of Educational Development	4
Asia Pacific Education Review	3

Education and Information Technologies	3
Eurasia Journal of Mathematics Science and Technology Education	3

Table 3 shows that the top three journals with the highest h-index are Bulletin of the National Academy of Sciences of the Republic of Kazakhstan (7), Plos One (6), International Journal of Emerging Technologies in Learning (5), and Thinking Skills and Creativity (5).

Table 4. Findings on the number of articles and h-indexes of the authors

Author	Article Count (n)	Author	h-indexes
Kuzhabekova, A.	20	Kuzhabekova, A.	8
Arpentieva, M. R.	16	Arpentieva, M. R.	7
Hernandez-Torrano, D.	14	Almukham Betova, A.	6
Kassymova, G. K.	12	Hernandez-Torrano, D.	6
Almukhambe Tova, A.	10	Kassymova, G. K.	6
Makoelle, T. M.	9	Abykanova, B.	4
Imashev, G.	7	Dossayeva, S. K.	4
Kosov, A. V.	7	Jonbekova, D.	4
Balta, N.	6	Jumakulov, Z.	4
Dossayeva, S. K.	6	Kosov, A. V.	4
Manan, S. A.	6	Lee, J. T.	4
		Stepanova, G. A.	4
		Stepanova, O. P.	4

In the Web of Science database, it was determined that a total of 2609 authors wrote journal articles on social studies education, either collaboratively or individually. When the number of articles per author is analyzed, the ratio is .29, and the number of authors per article is 3.41. When Table 4 is analyzed, it is seen that Aliya Kuzhabekova (n=20), M. R. Arpentieva (n=16) and Daniel Hernández-Torrano (n=14) are the authors who wrote the most articles in the field of education in Central Asian Turkic Republics. Aliya Kuzhabekova works at Nazarbayev University in Kazakhstan, M. R. Arpentieva at Tsiolkovskiy Kaluga State University in Russia and Daniel Hernández-Torrano, a Spanish researcher, works at Nazarbayev University in Kazakhstan.

In the right part of Table 4, information about the h-indexes of the authors who conducted research on the subject area is given. H-index enables the evaluation of the quality of scientific studies conducted by researchers (Hirsch, 2005). Aliya Kuzhabekova, M. R. Arpentieva, Ainur Almukhambetova and Daniel Hernández-Torrano, Gulzhaina K. Kassymova, Sazhida Dossayeva and Kosov A. V. are on both sides of Table 4, indicating that these authors are influential and productive authors in the field of education in the Central Asian Turkic Republics, both publishing a large number of articles and having a high h-index.

Researchers such as Bakytgul Abykanova, Dilrabo Jonbekova, Zakir Jumakulov, Stepanova O. P., Stepanova G. A. are not in the top ranking of the most publications in the left part of Table 4, but they are in the first place in the h-index ranking in the right part. It can be stated that the number of publications of these authors is low, but their impact is higher than others.

Table 5. Globally most cited articles in the field

Research Name	Author/ Authors	Citation Count (f)
Promoting Human Capital Development: A Typology of International Scholarship Programs in Higher Education	L. W. Perna, K. Orosz, B. Gopaul, Z. Jumakulov, A. Ashirbekov & M. Kishkentayeva	107
The Cost of Corruption in Higher Education	S. P. Heyneman, K. H. Anderson & N. Nuraliyeva	87
Mapping Global Research on International Higher Education	Aliya Kuzhabekova, D. D. Hendel & D. W. Chapman	42
Reverse flow in academic mobility from core to periphery: motivations of international faculty working in Kazakhstan	Jack T. Lee & Aliya Kuzhabekova	41
Supportive Chinese supervisor, innovative international students: a social exchange theory perspective	Luo Fan, Monowar Mahmood & Aftab Uddin	41
Using Virtual Laboratories in Teaching Natural Sciences: An Example of Physics Courses in University	Y. Daineko, V. Dmitriyev, & M. Ipalakova	40
A Door Must Be Opened: Perceptions of Students with Disabilities in Higher Education	Nina Yssel, Natalya Pak & Jayne Beilke	36
Creativity and education: A bibliometric mapping of the research literature (1975–2019)	Daniel Hernández-Torrano & Laura Ibrayeva	36
Risk Factors for HIV and Unprotected Anal Intercourse among Men Who Have Sex with Men (MSM) in Almaty, Kazakhstan	M. Berry, A. L. Wirtz, A. Janayeva, V. Ragoza, A. Terlikbayeva, B. Amirov, S. Baral & C. Beyrer	32
Higher education contributing to local, national, and global development: new empirical and conceptual insights	Maia Chankseliani, Ikboljon Qoraboyev & Dilbar Gimranova	30
Understanding the human capital benefits of a government-funded international scholarship program: An exploration of Kazakhstan's Bolashak program	Laura W. Perna, Kata Orosz & Zakir Jumakulov	30

Table 5 shows that the most cited study is the research conducted by L. W. Perna, K. Orosz, B. Gopaul, Z. Jumakulov, A. Ashirbekov & M. Kishkentayeva ($f=107$). This article examines international scholarship programs supported by national and federal governments around the world and aimed at promoting student mobility (Perna et al, 2014). The second most cited article is a study by S. P. Heyneman, K. H. Anderson and N. Nuraliyeva ($f=87$). This article examines the extent of corruption in higher education through different indicators by referring to student surveys conducted in six countries (Kyrgyzstan, Kazakhstan, Croatia, Moldova, Serbia, and Bulgaria) (Heyneman, Anderson, & Nuraliyeva, 2008). The third most cited article is by Aliya Kuzhabekova, D. D. Hendel & D. W. Chapman ($f=42$). The aim of this study is to map global research in international higher education. This study used bibliometric analysis and social network analysis to identify key individuals, institutions, countries, and disciplines contributing to international higher education research and to reveal the links between authors, journals, disciplines, and institutions.

When the most globally cited educational studies conducted in Central Asian Turkic Republics are analyzed, it is seen that all of them were produced in cooperation with international researchers from countries such as the USA, Russia, and Germany. This finding is important in terms of showing that academics in Central Asian Turkic Republics are open to international cooperation.

Table 6. Institutions with the most publications and most citations

Order	Institution	Article Count (n)	Order	Institution	Citation Count (n)
1	Nazarbayev University	132	1	Nazarbayev University	827
2	Abai Kazakh National Pedagogical University	49	2	University of Pennsylvania	205
3	L.N. Gumilyov Eurasian National University	48	3	Abai Kazakh National Pedagogical University	160
4	Al-Farabi Kazakh National University	34	4	Tsiolkovsky Kaluga State University	114
5	Kazan Federal University	22	5	Baku State University	87
6	Baku State University	17	6	Nosov Magnitogorsk State Technical University	82
7	Süleyman Demirel University	17	7	L.N. Gumilyov Eurasian National University	78
8	Kh. Dosmukhamedov Atyrau State University	16	8	Kh. Dosmukhamedov Atyrau State University	59
9	Tsiolkovsky Kaluga State University	14	9	Süleyman Demirel University	58
10	Kyrgyz-Turkish Manas University	14	10	KIMEP University	53

Looking at the information on the most published institutions and the most cited institutions, it is seen that "Nazarbayev University" in Kazakhstan ranks first in both categories with 132 articles and 827 citations. It is seen that Kazakhstan universities are predominant in both categories, two universities from Russia, one university each from Türkiye, Azerbaijan, and Kyrgyzstan are included in the list of institutions with the most publications, and two universities from Russia, one university each from the USA, Türkiye, and Azerbaijan are included in the list of institutions with the most citations. It is thought that the reason why institutions in countries that are not in the Central Asian Turkic Republics are included in these lists is due to joint academic cooperation studies or academic activities carried out by researchers in the Turkic Republics in these countries.

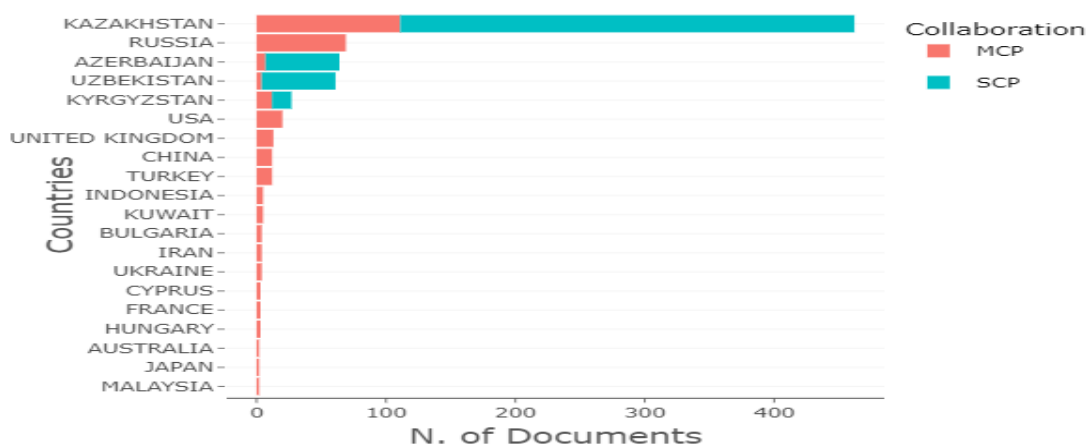
**Figure 2.** Countries of corresponding authors and number of articles

Figure 2 shows the number of articles produced by country, SCP (Single Country Publications) ratio, and MCP (Multiple Country Publications) ratio. The SCP ratio shows the number of publications produced by researchers from the same country within the total number of publications, while the MCP ratio shows the number of publications produced by researchers from more than one country in collaboration within the total number of publications. When Figure 2 is analyzed, it is seen that Kazakhstan is the country with the highest

number of articles written and the country with the highest number of collaborations within the country and with international researchers. The countries with the highest number of collaborations with researchers in Central Asian Turkic Republics are Russia, the USA, the United Kingdom, China, and Türkiye, respectively. Detailed information on these data is presented in Table 6.

Table 7. Number of articles, scp, and mcp values of corresponding authors' countries

Country	Artcile Count (n)	SCP	MCP	MCP Ratio
Kazakhstan	462	351	111	0,240
Russia	69	0	69	1
Azerbaijan	64	57	7	0,109
Uzbekistan	61	57	4	0,066
Kyrgyzstan	27	15	12	0,444
USA	20	0	20	1
United Kingdom	13	0	13	1
China	12	0	12	1
Turkey	12	0	12	1
Indonesia	5	0	5	1

Table 7 shows the countries of the corresponding authors and their collaborations with authors from different countries. Kazakhstan with 462 articles (SCP: 351, MCP: 111), Russia with 69 articles (SCP: 0, MCP: 69), Azerbaijan with 64 articles (SCP: 57, MCP: 7), Uzbekistan with 61 articles (SCP: 57, MCP: 4) and Kyrgyzstan with 27 articles (SCP: 15, MCP: 12). The MCP ratios of the Central Asian Turkic Republics are Kyrgyzstan with (0.444), Kazakhstan with (0.240), Azerbaijan with (0.109) and Uzbekistan with (0.066). When the MCP ratios of other countries are analyzed, Russia, the USA, the United Kingdom, China, Türkiye, and Indonesia have high MCP ratios. Kazakhstan is the most productive country and the most open to international cooperation. As previously mentioned in the research object section, there is no study on Turkmenistan in the Web of Science database in the field of education. Hernandez-Torrano et al, (2021) and Karakuş et.al (2021), in the studies could not be found of data for belong Turkmenistan.



Figure 3. Word cloud of most used keyword

Word clouds, one of the text mining methods, show the most used words in a text or paragraph. The centered word shows the most used word specific to the subject area. The size of the words and their proximity to the center indicate the words used in the subject area. As the word size decreases and moves away from the center, it indicates that the word is used less frequently. When the quantitative data of Figure 3 is analyzed, it is seen that the most used keywords are education (f=56), students (f=32), higher-education (f=26), children (f=13), impact (f=13), perceptions (f=13), teachers (f=13) and technology (f=13). These findings show that there are more studies on higher education, teachers, students, perceptions, and technology in the field of education in Central Asian Turkic Republics in the Web of Science database.

Table 8. Most used keywords

Keyword	f
Education	96
Higher education	53
Kazakistan	42
Technology	18
Competence	17
Innovation	16
Development	14
Creativity	14
Educational process	14
Student	13
Teacher	13
Students	13
E-learning	13
Inclusive education	13

When Table 8, which includes the most frequently used keywords, is examined, it is seen that "Education" (f=96), "Higher education" (f=53), "Kazakhstan" (f=42), and "Technology" (f=18) are the most frequently preferred keywords in identifying publications in the field. When we look at the frequently used keywords, it is seen that technology, innovation, creativity, development, competence, and student issues are emphasized in educational research in Central Asian Turkic Republics. In addition, the frequent use of the name Kazakhstan as a keyword is also important in terms of showing that it is related to the fact that Kazakhstan is the country with the highest number of publications among the countries included in the research.

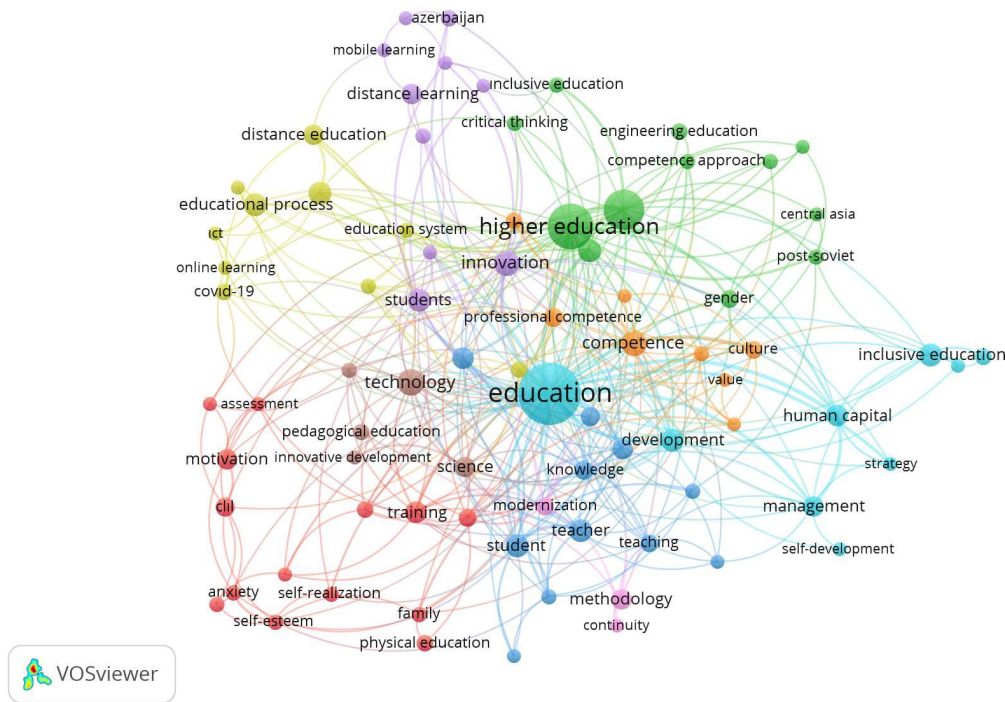


Figure 4. Common keyword network

Figure 4 shows that the keyword "Education" is in the center. When the connection between the colors is taken into consideration, it is seen that educational research in the Central Asian Turkic Republics is concentrated on the keywords "Higher education", "Kazakhstan", "Human capital", "Educational process", "Technology", "Competence", "Student", "Innovation", and "Development", and the studies are conducted on these topics.

Table 9. Common citation network author-cluster findings

Author	Cluster	Author	Cluster
Kuzhabekova A	1	Ayupova, Z. K.	2
Hernandez-Torrano D	1	Kussainov, D. U.	2
Almukhambetova A	1	Adair, D.	3
Makoelle, T. M.	1	Jaeger, M.	3
Karabassova, L.	1	Jonbekova, D.	4
Somerton, M.	1	Jumakulov, Z.	4
Kasa, R.	1	Sparks, J.	4
Lee, J. T.	1	Shuinshina, S.	5
Ali, s.	1	Tuyakov, Y.	5

When Table 9 is examined, it is seen that researchers from the Central Asian Turkic Republics have created common networks in different sub-headings in the field of education and produced articles in cooperation on these issues. In Table 9, the researchers who are in the same research cluster, that is, who conduct joint studies, are indicated with the same numbers. In particular, it is seen that there are researchers from countries other than Central Asian Turkic Republics among the authors forming the clusters. This situation supports the finding of widespread cooperation network and rate with other countries in the previous findings of the research.

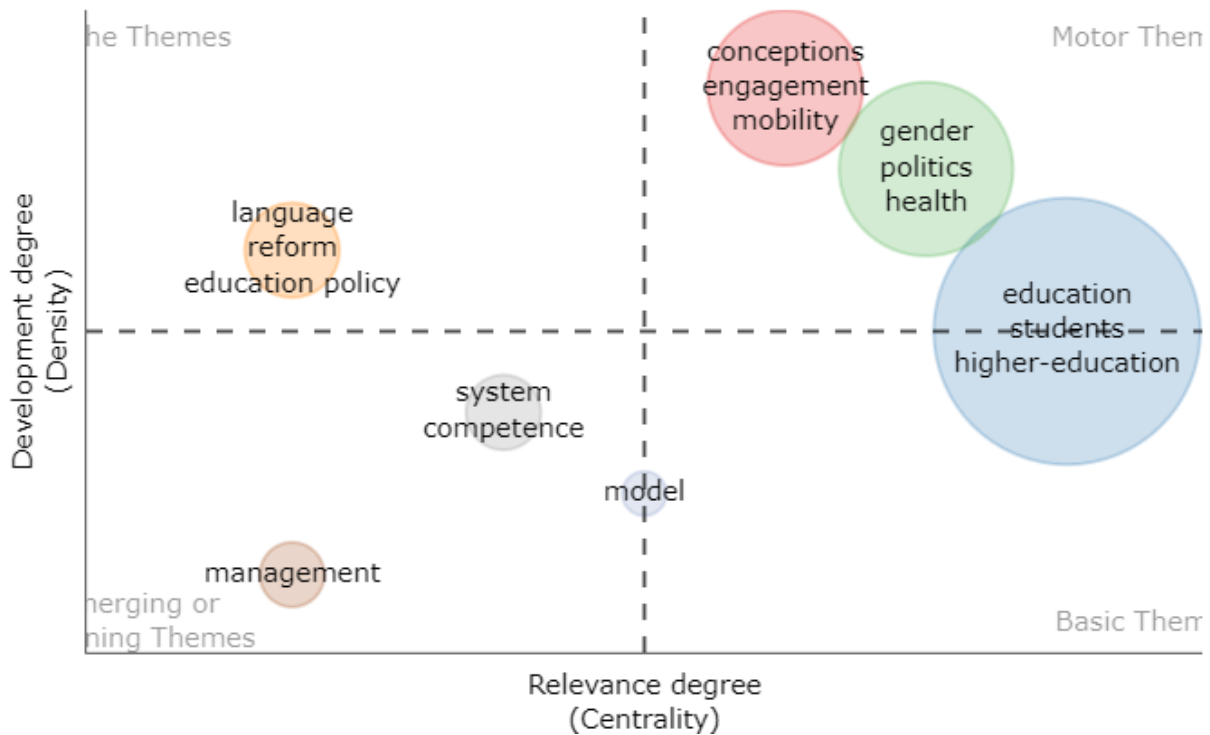


Figure 5. Thematic map of research topics

A thematic map is a visual that allows us to analyze themes according to the quadrant in which they are placed. The upper left quadrant of the map shows special themes; the upper right quadrant, motor themes; the lower left quadrant, emerging themes; and the lower right quadrant, core themes. Figure 4 shows that the concepts of language, reform, and education policies stand out as special themes; the concepts of system, competence, and management stand out as emergent themes; the concepts of concept, responsibility, mobility, gender, health, and policy stand out as motor themes; and the concepts of higher education, education, and students stand out as common concepts between the basic themes and motor themes. These findings can be expressed as the concepts of higher education, education, and students are the basis of other themes in the titles of the studies, while concepts such as language, reform, and educational policies are of great interest to educational researchers in Central Asian Turkic Republics.

Results and Discussion

One of the most important factors of being a modern society is education and studies in the field of education. As in many fields, there are important international indicators in evaluating studies/publications in the field of education and making comparisons with other countries, and the number of articles published in international scientific journals within the scope of basic citation indexes (SCI, SSCI and AHCI) is considered important. Based on this view, in this study, a bibliometric analysis of the studies conducted in the field of education in the Central Asian Turkic Republics was made and the situation of the countries was revealed.

As a result of the study, it was determined that educational research in Central Asian Turkic Republics started in 1992 and there has been a significant increase in the number of studies since 2013. Following the dissolution of the Soviet Union in 1990-1991, Azerbaijan, Turkmenistan, Kazakhstan, Uzbekistan, and Kyrgyzstan gained their independence in 1992. With the dissolution of the Soviet Union, opportunities have emerged for the Turkic world in the field of education as well as in political, economic, and social fields. This result of the study can be explained by the change and development in the field of education as in many other fields during the independence process.

As a result of the study, when the data on the countries of the corresponding authors, the number of articles, and cooperation with authors from different countries are evaluated, it is seen that Kazakhstan is the country where the most articles are written and the country with the highest number of collaborations within the country and with international researchers. Russia, the USA, the United Kingdom, China, and Türkiye are the countries with the highest number of collaborations with researchers in Central Asian Turkic Republics, respectively. According to this result, Kazakhstan was found to be the most productive country and the most open to international cooperation. Another finding that supports this result is that Aliya Kuzhabekova and Daniel Hernández-Torrano, who are among the top 3 authors with the highest number of articles, work at Nazarbayev University in Kazakhstan. Demir, Cengiz, and Şenel (2016), in their study titled "Bibliometric Analysis on Socio-Economic, Academic Development and Publication Productivity of the Turkic World in the 1992-2014 Period", concluded that Uzbekistan, Kazakhstan, and Azerbaijan ranked first in terms of publication productivity. In Maksüdünov's (2021) study on the bibliometric analysis of publications on entrepreneurship in the Central Asian Turkic Republics based on the Wos database, it was determined that Kazakhstan ranked first among the other Turkic Republics in terms of the number of publications. As previously mentioned in the research object section, there is no study on Turkmenistan in the Web of Science database in the field of education.

Another result is that the articles in Central Asian Turkic Republics were published in 223 different journals. "Bulletin of the National Academy of Sciences of the Republic of Kazakhstan" ranks first among the journals in which articles in this field are published. This journal is a journal registered in the Wos database published in Kazakhstan. It can be said that the fact that this journal is the journal in which the most articles are published in the study is related to the fact that it is published in Kazakhstan. Maksüdünov (2021) stated in his study that as of 2019, journals published by higher education institutions of any of the Central Asian Turkic Republics other than Kazakhstan are not scanned in WoS, and that some national and international activities have been tried to be carried out in each of the Central Asian Turkic Republics so far. In addition, similar to this study, the journal with the highest number of publications was determined as "Bulletin of The National Academy of Sciences of The Republic of Kazakhstan". In the same study, Kazakhstan's good performance in terms of the number of publications due to this feature of the journal was associated with the fact that the journal was published in Kazakhstan along with many other reasons. Another important result of the research is that there is no study about Turkmenistan in the Web of Science database in the field of education. Hernandez-Torrano et al., (2021) and Karakus et al. (2021), data for Turkmenistan could not be found in the studies.

In the study, the thematic map of the research topics was analyzed. As a result of this analysis, it was determined that the concepts of higher education, education, and students were prominent in the studies. This finding can be interpreted as that these prominent concepts form the basis for other themes in the topics of the studies, while concepts such as language, reform, and educational policies are of great interest to educational researchers in Central Asian Turkic Republics. Another result obtained in the study is the most cited articles in the field. When we look at the common characteristics of the most cited articles in the related field, it can be stated that the study groups/universe/samples of the studies consist of different countries and that they are produced in cooperation with researchers from different countries. This result can be interpreted as researchers in Central Asian Turkic Republics are open to international cooperation.

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Effects of Project-Based Learning in Moral Values Education*

Research Article

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ABSTRACT

The purpose of this research is to determine student perceptions of the effects of project-based learning method on universal moral values in the Religious Culture and Moral Knowledge course taught in secondary school 7th grades. On the other hand, analysing students' perceptions according to demographic variables is among the aims of the research. The study group of the research conducted in the quasi-experimental model consisted of a total of 332 secondary school 7th grade students. In the study, which was designed as a pre-test-post-test control group, the data were obtained with the Information Form and the Universal Moral Values Scale. Descriptive statistical techniques were used in the analysis of the data. The results obtained as a result of the analyses are as follows: According to the participant students, the project-based learning method contributes to the development of general universal moral values and cognitive universal moral values at a low level, and to the behavioural universal moral values at a moderate level. However, the project-based learning method is not effective on the development of affective universal moral values. According to this situation in the research, it was evaluated that the religious culture and ethics course, which is taught with the support of the project-based learning method, provides support to the students in knowing and doing, while it is ineffective in the points of feeling, appreciating and internalizing. Possible reasons for this are listed as the students' new transition to the abstract operational period, the teacher's ability to use the method, and the relationship of this method with moral development. In the research, it has been proposed to develop new technology and practice-based methods that cover the cognitive, affective and behavioural dimensions of moral development, suitable for this age and current generation

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Keywords:

Moral values, Moral development, Project-based learning, Religion lesson, Secondary school students

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Introduction

Education, both in the historical sense and in the Islamic tradition, has been seen as an activity that enlightens people in all respects and directs them to balanced behaviors, and it has been organized in a way that fulfills this function. Turkish education history is full of examples of this, especially madrasahs, skullcaps and zamias. In time, movements such as Naturalism, Positivism and Pragmatism that emerged in the West and became widespread rapidly overshadowed this "illumination" function and transformed education into duty, job and vocational education (Cevizci, 2011). The Renaissance, which is actually a European reality, has a great share in this transformation. As a result, in the last 3-4 centuries, which is characterized as the modern period built by these transformations, education has focused on the mental and physical development of the individual with a materialist point of view, and has largely neglected his soul and emotions (Tozlu, 2014). This neglect, which hinders the holistic development of the individual, has also slowed down and even negatively affected the development of moral education, which is the ethical basis of individual and social life. Positivism, which treats man as a pure organism (matter), also has an effect on this. However, over time, when it was understood that the mental development of the individual was not sufficient for the integrity and balance of life, moral education began to be included in school programs, albeit belatedly. Considering the subject in the context of our country, one of the reasons for the delay in moral education in schools is that these subjects are dealt with in relation to the religion lesson. Therefore, moral education, which is of critical importance in terms of the holistic development of the individual, has always been overshadowed by the debates on religion in Turkey. During the republican period, moral education has been handled together with the religion lesson, and has come to the present day by passing through various stages. These stages are; not giving place to religion lessons in schools, giving them optional places and including compulsory religion lessons from the 4th grade of primary education to the last year of high school with the 1982 Constitution (Keskiner, 2010).

The "Religious Culture and Moral Knowledge" (RCMK) course, which has been included in the education programs from primary school to high school since 1982-1983 in our country, is compulsory (Öcal, 2008). Discussions about the RCMK course, which is taught from primary school to the last year of high school, by going through many stages, continue in many contexts. One of them is about the effectiveness of this course in practice, rather than the necessity of the RCMK course. Like other lessons, the fact that the RCMK lesson fulfills the expected function in practice is, first of all, a method problem (Yeşilyurt, 2013). The effectiveness of the RCMK course in practice only requires methods suitable for this course, students and the age. Because although the content of the RCMK course does not change much, it is a fact that the students, the target audience of this course, have changed. As a matter of fact, in today's world where technology affects almost every stage of life, current students are also intertwined with technology to a significant extent. This situation necessitates that the RCMK course should be taught with approaches and methods suitable for the age and current student population. One of them is Project-Based Learning Approach (PBLA), which is suitable for education and training in our age, which is intertwined with technology. As a matter of fact, PBLA is successfully implemented in the education systems of many countries, especially in Canada and the United States (Korkmaz, 2002).

PBLA is a learning approach based on the synthesis of the ideas of influential educators such as Dewey, Bruner and Kilpatrick, and centered on real life and the student (Demirel, 2004: 237). PBLA, which is process-oriented rather than outcome-oriented in education and training, supports students' imagination and design competencies with interdisciplinary teaching (Yılmaz, 2006: 39). PBLA (Uzun, 2007: 28), which students learn by solving real-life problems in groups, is quite appropriate in terms of the integrity of science-action, which is very important in the RCMK course. PBLA is a practical approach that involves students in the problem of life (Erdem, 2002). This feature is important in terms of perceiving the subjects of religion and morality as a fact of life in the RCMK course. When required by PBLA, students' asking questions, making predictions,

doing research and using technology for these (Erdem & Akkoyunlu, 2002: 3) is also important in terms of associating religion and morality with technology, which is the basic dynamic of our age. On the other hand, it can be a guide for students who develop problem-solving skills with PBLA to deal with life problems related to religion and morality from a scientific point of view. PBLA (Sönmez, 2009), which emphasizes practice rather than theory, is an appropriate approach in terms of transferring religion and moral issues from books to real life. Another important feature of PBLA is that students learn by doing, experiencing and reflecting their lives, not by listening to adults. Thus, they feel that the product that goes there belongs to them (Coşkun, 2004: 75). In the context of this feature, it may be possible for students who learn about religion and morality by doing projects with PBLA, to internalize moral issues more. As it is seen, the use of PBLA (Katz, 1994), which is suitable for the age and the current student population of this age, in the RCMK course is an issue that needs to be emphasized. For the details of the subject, it would be beneficial to reveal the applicability of PBLA to the RCMK course under the conditions of our country. Because it is certain that the teacher-centered methods and techniques used so far have not produced the desired results (MEB, 2004), and that only the approaches based on "knowledge" and "giving information" cannot satisfy the current generation (Gürşimşek, 1998). In this context, this research, whose aim is to determine the effects of PBLA on the universal moral values education of secondary school 7th grade students in the RCMK course, is important.

Method

Research Model

The quasi-experimental model method was used in this study, which was designed in a quantitative model. Quantitative research is the handling of numerical data in a formal, objective and systematic process in order to obtain information about events and phenomena with an inductive approach (Burns and Grove, 1993 as cited in Başol, 2008: 6). Quasi-experimental research is the method used to reach an opinion about the cause-effect relationships between the variables studied (Aydoğdu, Karamustafaoglu, & Bülbül, 2017). The symbolic view of the "pretest-posttest control group" quasi-experimental design of the research is given below (Karasar, 2017: 132):

Y	G _E	O _{1.1}	X	O _{1.2}
Y	G _C	O _{2.1}	---	O _{2.2}

Figure 1. Symbolic View of the Quasi-experimental Method

Symbols in the design: Y: Unbiased Assignment, G_E: Experimental Group, G_C: Control Group, X: Experimental procedure (Project-Based Instruction), O: Score obtained depending on the dependent variable

Universe and Sample

The universe of the research is in the city center of Elazığ in the 2021-2022 academic year; Şehit Cuma DAĞ Secondary School, Şehit Nadir İPEK Secondary School, Seyda Molla BAHİRİ İmam Hatip Secondary School, Elazığ Özel Yöntemim Schools Secondary Schools are the students of the 7th grade branches. The sample (Study group) consisted of 332 secondary school 7th grade students, who were formed by simple random sampling from these students on a voluntary basis. Among the sample consisting of a total of 332 people, 166 students formed the Experimental Group (EG) and 166 students formed the Control Group (CG) by unbiased assignment. The following conditions were taken into consideration in creating EG and CG (Baysan & Uluyol, 2016): Participants were randomly divided into experimental and control groups, they were equivalent to each other, and there were pairs with the same values in terms of control variables. The demographic distributions of the students who constitute the sample of the study are given below: Female Male Total.

Table 1. Distribution of students participating in the study by gender

Group	Female		Male		Total
	n	%	n	%	
Experimental	79	47.59	87	52.41	166
Control	85	51.20	81	48.80	166

Table 2. Distribution of students participating in the study by family income

Monthly Income	n	%
Weak	70	21,08
Middle	115	34,64
Good	72	21,69
Very good	75	22,59
Total	332	100.0

Table 3. Distribution of the students participating in the study by maternal education status

Mother Education	n	%
Literate	40	12.05
Primary school	114	34.34
Middle school	59	17.77
High school	55	16.56
University	64	19.28
Total	332	100.0

Table 4. Distribution of Students Participating in the Study by Father's Educational Status

Father Education	n	%
Literate	79	23.80
Primary school	56	16.87
Middle school	99	29.82
High school	98	29.52
Total	332	100.0

Experimental Process

In the experimental process of the research, the RCMK course in EG was taught with the support of PBLA in addition to the current teaching, and this course was taught as current teaching in CG. Before the experimental procedure, which lasted for a total of six weeks, the Universal Moral Values Scale (UMVS) was administered to both groups as a pre-test for matching. These test results are listed in Table 5.

Table 5. Independent groups t-test results regarding the pretest scores of the experimental and control groups

UMVS Dimensions	Group	n	\bar{x}	ss	sd	t	p
Cognitive	Experimental	166	4.07	.743	330	2.007	.046
	Control	166	3.99	.726			
Affective	Experimental	166	4.25	.747	330	-1.427	.069
	Control	166	4.09	.845			
Behavioral	Experimental	166	4.31	.626	330	-1.477	.142
	Control	166	4.11	.803			
Total	Experimental	166	4.15	.634	330	-1.213	.154
	Control	166	4.11	.701			

In the pre-experimental pairing of the groups, which are vital for quasi-experimental studies, whether there was a significant difference between the pretest mean scores of the HRAS applied to both groups before the experimental procedure was determined by the independent groups “t” test (Table 5). The fact that there was no significant difference between the UMVS pretest scores of both groups before the experimental procedure can be expressed as they are similar in terms of HRAS. This similarity has also been tried to be achieved in terms of the demographic distributions mentioned above. After the similarity (pairing) of the students in both groups was ensured, the RCMK course in EG was taught for six weeks with the support of PBL regarding the subjects and achievements of the Moral Unit. In this process, the methods and techniques of story, case study, role playing, what would you do if it were you and concept cartoons were used. In the same process, the RCMK course in QA was taught with the current teaching, related to the subject and achievements of the Ethics Unit. At the end of the experimental procedure, which lasted for a total of six weeks, HRAS was applied to both groups again as a post-test.

Data and Analysis

The data in the study were obtained with the Information Form (IF) and EADO. Among these, the IF developed by the researcher consists of a total of four demographic questions. The second data collection tool, MAPS, was developed by Umar and Kanger (2018) and consists of 48 positive items of a total likert type. The Cronbach Alpha reliability coefficient of the three-dimensional scale, “cognitive, affective and behavioral”, was calculated as 0.97. In the analysis of the mean scores obtained from the EADO, first of all, homogeneity analysis (Levene) was performed and it was determined that the data showed a normal (parametric) distribution. After that, independent groups “t” test was used for pairwise comparisons. In the comparison of these mean scores according to demographic variables, one-way Anova, Scheffe, Eta square analyzes, which are also suitable for parametric distributions, were used. In the interpretation of the eta square value (η^2), the obtained values are; .01-small effect, .06-moderate effect, .14-large effect (Özsoy & Özsoy, 2013). After that, the necessary ethics (İnönü University Social and Human Sciences Scientific Research and Ethics Committee, 17/06/2021-E. 54838) and application (MEB: 13/09/2021-E-79137285-605.01-31721130) permissions were obtained for data collection. tools have been applied.

Results

The Effects of PBLA on the Development of General Moral Values

In the research; Table 6 shows the results of the independent groups “t” test applied to test the difference between the total post-test mean scores of the EG students, where the courses are taught with the support of PBLA, and the CG students, where the current teaching is applied.

Table 6. Comparison of the EADO post-test total scores of the experimental and control groups

EADO	Groups	n	\bar{x}	ss	t*	p	η^2
Total	Experimental	166	4.36	0.557	2.276	.024	.03
	Control	166	4.17	0.690			

*p<.05

When Table 6 is examined, it is seen that there is a significant difference ($t_{(330)}=2.276$; $p<.05$) between the EG post-test mean score ($\bar{x}=4.36$) and the CG post-test mean score ($\bar{x}=4.17$) regarding the total EADO. This statistically significant difference in favor of EG is at the level of “small effect” ($\eta^2=.03$).

The Effect of PBLA on the Development of Cognitive Moral Values

In the research; Table 7 shows the results of the independent groups “t” test applied for the analysis of the difference between the EADO Cognitive Sub-Dimension post-test mean scores of EG students, where the

courses are taught with the support of PBLA, and CG students, where the current teaching is applied.

Table 7. EADO comparison of cognitive dimension post-test total scores

EADO	Groups	n	\bar{x}	ss	t*	p	η^2
Cognitive/Sub-Dimension	Experimental	166	4.21	0.638	2.007	.046	.03
	Control	166	4.00	0.711			

*p<.05

When Table 7 is examined, it is seen that there is a significant difference ($t_{(330)}=2.276$; $p<.05$) between the EG post-test mean score ($\bar{x}=4.21$) and the CG post-test mean score ($\bar{x}=4.00$) for the UMVS Cognitive Sub-Dimension. . This statistically significant difference in favour of EG is at the level of “small effect” ($\eta^2=.03$).

The Effect of PBLA on the Development of Affective Moral Values

In the research; Table 8 shows the results of the independent groups “t” test applied for the analysis of the difference between the EADO Affective Sub-Dimension post-test mean scores of EG students, whose lessons were taught with the support of PBLA, and CG students, where the current teaching was applied.

Table 8. EADO comparison of affective dimension post-test total scores

UMVS	Experimental	n	\bar{x}	ss	t	p	η^2
Affective/Sub-Dimension	Control	166	4.39	0.631	-1.427	.069	.01
	Experimental	166	4.21	0.737			

*p<.05

When Table 8 is examined, there is no significant difference between the EG post-test mean score ($\bar{x}=4.39$) and the CG post-test mean score ($\bar{x}=4.21$) for the EADO Affective Sub-Dimension ($t_{(330)}=-1.427$; $p>.05$). is seen.

The Effect of PBLA on the Development of Behavioural Moral Values

In the research; Table 9 shows the results of the independent groups "t" test applied for the analysis of the difference between the PBLA Behavioural Sub-Dimension post-test mean scores of EG students, whose lessons were taught with the support of EADO, and CG students, where the current teaching was applied.

Table 9. EADO Comparison of behavioural dimension post-test total scores

EADO	Experimental	n	\bar{x}	ss	t*	p	η^2
Psychomotor/Sub-Dimension	Control	166	4.48	0.566	-2.534	.012	.07
	Experimental	166	4.29	0.760			

*p<.05

When Table 8 is examined, it is seen that there is a significant difference between the EG post-test mean score ($\bar{x}=4.48$) and the CG post-test mean score ($\bar{x}=4.29$) for the EADO Behavioural Sub-Dimension ($t_{(330)}=-2.534$; $p<.05$). is seen. This difference in favour of EG was calculated as “moderately effective” ($\eta^2=.07$).

The Effects of PBLA on the Development of General Moral Values from a Demographic Perspective

In the research; The results of the independent groups “t” test and one-way Anova, which were applied for the analysis of the total post-test mean scores of the EG students, in which the courses were taught with the support of PBLA, according to gender, family income status and parent education variables are given in the tables below.

Table 10. EADO t-test results of students according to gender

EADO (Total)	Gender	n	\bar{x}	ss	t	p	η^2
Experimental Group	Woman	84	4.41	.532	1.256	.211	.02
	Male	82	4.30	.579			

*p<.05

In the study, the dependent groups "t" test was conducted to test the difference between the average score of EG students, whose lessons were taught with the support of PBLA, from the total EADO, according to gender. When Table 10 is examined, it is seen that CG students' perceptions of the effect of PBLA on general moral values do not differ significantly according to the gender variable ($t_{(164)}=1.256$; $p>.05$).

Table 11. EADO anova results according to family income status of EG students

EADO (Total)	Monthly Income	n	\bar{x}	ss	F	p
Experimental Group	Weak	30	4.45	.589	1.784	.152
	Middle	60	4.37	.542		
	Good	40	4.20	.619		
	Very good	36	4.46	.454		
	Total	166	4.36	.557		

In the study, it was tested with a one-way Anova whether the post-test average score obtained from the total EADO of EG students, whose lessons were taught with the support of PBLA, differed significantly according to the family income variable. When Table 11 showing the results of this test is examined, it is seen that the perceptions of EG students about the effect of PBLA on general moral values do not differ significantly according to the family income variable ($F_{(164)}=1.784$; $p>.05$).

Table 12. EADO Anova results according to maternal education status of EG students

EADO (Total)	Mother Education	n	\bar{x}	ss	F	p
Experimental Group	Literate	18	4.41	.362	.581	.677
	Primary school	58	4.31	.636		
	Middle school	28	4.27	.675		
	High school	26	4.40	.449		
	University	36	4.45	.472		
	Total	166	4.36	.557		

In the study, it was tested with a one-way Anova whether the post-test mean score obtained from the total EADO of EG students, whose lessons were taught with the support of PBLA, differed significantly according to the mother's educational status variable. When Table 12 showing the results of this test is examined, it is seen that EG students' perceptions of the effect of PBLA on general moral values do not differ significantly according to the educational status of the mother ($F_{(164)}=.581$; $p>.05$).

Table 13. EADO Anova results according to father education status of EG students

EADO (Total)	Father Education	n	\bar{x}	ss	F	p
Experimental Group	Primary school	37	4.34	.558	1.031	.380
	Middle school	24	4.25	.770		
	High school	56	4.32	.538		
	University	49	4.47	.444		
	Total	166	4.36	.557		

In the study, it was tested with a one-way Anova whether the post-test mean score obtained from the total EADO of EG students, whose lessons were taught with the support of PBLA, differed significantly

according to the father's educational status variable. When Table 13 showing the results of this test is examined, it is seen that EG students' perceptions of the effect of PBLA on general moral values do not differ significantly according to the educational status of their fathers ($F_{(164)}=1.031$; $p>.05$).

Discussion and Results

The discussion and conclusions based on the findings of the research are given below:

Discussion and Results on the Effects of PBLA on the Development of General Moral Values

When Table 6, which includes the findings on the effects of PBLA in the secondary school 7th grade RCMK course, on the development of general moral values, it can be stated that PBLA has a small effect on the general moral values development of students. This finding can be interpreted as PBLA's contribution to the development of general moral values in the 7th grade secondary school students' RCMK course is partially positive. This finding is supported by the finding of Uzun (2007), who conducted a research on the same subject, that "PBLA contributes positively to the academic achievement and attitudes of 8th grade primary school students in the RCMK course". On the other hand, in related studies, it has been stated that PBLA has positive contributions to the academic success of students in the social studies course in secondary schools (Bacak, 2008) and in the technology course in high school (Baran, 2011). Since moral behaviors, which are the subject of the research, are the official achievements of the current secondary school 7th grade RCMK course, these findings support the research. Because the finding that emerged in the research that "The RCMK course taught with the support of PBLA has a partial effect on the general moral values development of 7th grade secondary school students" can be understood as supporting the academic success of these students. As a matter of fact, student development related to moral values education, which is the subject of the research, is the official achievement of the current secondary school 7th grade RCMK course. In this respect, based on this finding of the research and the literature results supporting this, it can be said that PBLA contributes to the academic and general moral values development of students, albeit partially, in the secondary school 7th grade RCMK course.

Discussion and Results on the Effects of PBLA on the Development of Cognitive Moral Values

Moral values, which are the subject of the research, can be categorized as cognitive, affective and behavioural. The cognitive dimension here is critical in terms of students' moral judgments (citing from Gander & Gardiner, 1998: Şimşek & Kara, 2016: 71). The cognitive dimension of these has been handled by many theories and explained in different ways. For example, while cognitive development related to internal processes such as morality is rejected in behavioural theories, social learning theories give importance to cognitive process in this regard (Başaran, 2017). Accordingly, it can be said that cognitive background is important in moral development. In order to support the cognitive background in moral education, it can be expected that PBLA, which is described as suitable for our age and the education generation of this age, will be effective. The findings obtained in this study are given in Table 7. When Table 7 is examined, it is seen that PBLA in the secondary school 7th grade RCMK course has a partially (low level) positive effect on the moral values development of the students in the cognitive dimension. This finding of the study can be interpreted as that PBLA is partially more effective than the current teaching in the development of students' moral values in the cognitive dimension. The "partial effect" here may be related to the suitability of PBLA for secondary school and RCMK course or how well the teacher applies this approach. As a matter of fact, in their research, Erdem and Akkoyunlu (2001) emphasized the need and importance of teachers' training on PBLA. The result of Koç's (2010) research on the subject that "religion teachers are inadequate in following the innovations and developments related to the profession and branch" points to this need. Therefore, it can be said that teachers need training on approaches and strategies (Akpınar, 2017) such as PBLA, which are described as contemporary. As a matter of fact, Önen et al. (2010), in their research, determined that teachers who received

in-service training on the subject were more prone to PBLA. In this respect, it is important to use PBLA and similar approaches correctly in increasing the effectiveness of the RCMK course, which includes cognitive, affective and behavioural learning. Because for effective education and training, the correct application of them is as critical as choosing the appropriate approach, strategy, method and technique for the subject, students and school.

Discussion and Results on the Effects of PBLA on the Development of Affective Moral Values

Regardless of the course, in the modern education approach, importance is given to emotional-social-moral development as well as cognitive dimension for the holistic and balanced development of students (Bozgün & Baydemir, 2019: 143). The affective dimension here is critical in terms of students' feelings about moral right and wrong (citing from Gander & Gardiner, 1998: Şimşek & Kara, 2016: 71). The RCMK course (Koç, 2008), which is directly related to the development of the identity and personality of school-age children, is a course whose affective dimension predominates. The RCMK course can be considered an important advantage in that it includes information on morality issues and case studies. Because this course is important in terms of giving information about religious culture and moral knowledge, as well as emotional development of students by modeling or using a case study. At this point, when PBLA is combined with a contemporary approach that focuses on practice, supports design and imagination, and prioritizes working with a group, it is expected that students' level of moral values development in the affective sense will increase. Because in Islam, it is important to internalize moral rules like religion. The findings obtained in this study are given in Table 8.

When Table 8 is examined, although the RCMK course taught with PBLA has a partial effect on the moral values of the 7th grade secondary school students in the cognitive dimension; It is remarkable that it has no effect on affective moral values. A possible reason for this may be related to the fact that affective attributes such as moral development depend primarily on the cognitive level associated with it. Because cognitive development based on mental based learning is the precursor of emotional and abstract based moral development. In this respect, this finding may be due to the fact that 7th grade secondary school students (Elibol, 2015) who have just entered the period of abstract operations cannot fully internalize moral issues, although they partially know them. Moreover, the fact that PBLA is partially effective on the development of students' general moral values strengthens this possibility. Because, based on Bloom's learning approach (Akpınar, 2017), it is difficult for the child to emotionally internalize a knowledge that is partially known. For this reason, it is useful to consider these cognitive, affective and behavioural dimensions (Sönmez, 2009), which do not differ in daily life, together in the RCMK course.

Another reason why the RCMK course taught with PBLA was partially effective on the cognitive level moral values of the 7th grade secondary school students, but not on their affective moral values, may be that the teachers handled this approach more in the cognitive dimension. However, whatever the reason may be, the individual's affective development related to his/her life philosophy, such as identity and personality, should not be sacrificed to cognitive development. For this, it is important to apply student-centered and contemporary approaches such as PBLA (Börekçi & Uyangör, 2019) in a way that will ensure the holistic development of the student in terms of cognitive, affective and behavioral aspects. On the other hand, the principle of paying attention to psychological characteristics in education (Özdemir, 2002), which Fraas (1984) draws attention to, requires that the RCMK course should be carried out by considering student psychology. It can be expected that the RCMK course, which is taught on the psychological axis, will support the affective dimension of the moral values development of the students.

Discussion and Results on the Effects of PBLA on the Development of Behavioural Moral Values

Islam; It is a religion consisting of faith, worship and morality (Yaran, 2005). In this respect, moral values

have an important place in the RCMK course. Like religion, morality is not just about knowing and feeling, it requires reflecting these on behaviour. As a matter of fact, in the religion of Islam, knowing and doing, that is, science and action, are considered together (Kayışoğlu, 2014). In this respect, behaviour, that is, deed, is very important in the development of moral values. Because the behavioral dimension in moral development is related to the students' consistent or inconsistent behavior as a result of their moral reasoning (cited from Gander & Gardiner, 1998; Şimşek & Kara, 2016: 71). In this respect, it can be expected that PBLA, which has important advantages in providing students with behavioural (practice) skills, will contribute to the behavioural dimension of the development of moral values in the RCMK course. The findings obtained in this study are presented in Table 9.

When Table 9 is examined, it is understood that the RCMK course taught with the support of PBLA has a moderate effect on the moral values of the 7th grade secondary school students in the behavioural dimension. This finding can be interpreted as secondary school 7th grade students know and practice the behaviours included in RCMK course outcomes. On the other hand, this finding can also be interpreted as PBLA's support for psychomotor (behavioural) gains in the RCMK course. A possible reason for this may be related to the fact that PBLA, which is more about action and activity, affected students more in gaining practical behaviours. As a matter of fact, Uysal (2021), in his research, determined that PBLA is mostly considered in the context of academic achievement, attitude, cooperation and problem solving. This is related to the fact that PBLA is an approach with academic and practical dimensions (Öztürk & Ada, 2006). Similarly, Sertürk (2008) concluded in his research that PBLA is more effective than traditional teaching in the 7th Grade Science and Technology Lesson in primary school. Another reason why PBLA is effective in behavioural gains may be the collaborative group work included in this approach. Because, besides cognitive activities, behavioural activities of students have a great role in group work to make a project. On the other hand, teachers undoubtedly have a share in the effectiveness of PBLA in behavioural moral gains. The important point, especially in religious teaching, is that the teacher is a good model (Bozkurt, 2018). As a matter of fact, it is known that children take their teachers as a model in the learning process (Ekinci, 2016).

Discussion and Results on the Analysis of the Effects of PBLA on the Development of Behavioural Moral Values by Demographic Variables

Tables 10, 11, 12, and 13 present the findings on the analysis of students' perceptions of the effects of PBLA on general moral development in the secondary school 7th grade RCMK course according to demographic variables. When these tables are examined, it is understood that the perceptions of the students participating in the research on the effects of PBLA on general moral development in the RCMK course do not differ statistically according to the variables of gender, family income, mother's education level and father's education level. This finding can be interpreted as the perceptions of the secondary school 7th grade students participating in the research about the contribution of PBLA to the development of moral values in the RCMK course are independent of gender, family income, mother's education level and father's education level. As a matter of fact, in the literature, there are studies that show that student development in the RCMK course depends on demographic variables (Kakçı, 2009; Akınal, 2013; Alkal & Kök, 2016), as well as studies showing that this is ineffective (Kaya, 2001; Arıcı, 2007; Bayraktar, 2019). available. There are many possible reasons for this. More detailed studies are needed for this.

As a result, supporting the cognitive and behavioural moral development of students in the 7th grade RCMK course in PBLA supported secondary school is important for a moral life in an individual and social sense. This contribution of PBLA can be attributed to the features of the approach such as including practice, group work, real life problems and design. However, it is an important shortcoming that PBLA does not support the affective moral development of students in the 7th grade RCMK course in secondary school. More detailed studies are needed for possible reasons for this deficiency. On the other hand, despite this

shortcoming, PBLA's support for the cognitive and behavioural moral development of students in the 7th grade RCMK course in secondary school is as important as the effectiveness of this method in terms of the students in question to lead a consistent life. Because the religion of Islam, which makes people responsible for the rule, and the education of this religion (Okumuş, 2015), with this function, are very valuable for both an individual and a peaceful social life. In this respect, although it is not effective in internalizing moral values, PBLA's achievements in reflecting what students know about moral values (cognitive development) to practice (behavioural development) are valuable in terms of the balance of science-action in religious and ethical life. In this respect, modern methods such as PBLA, which will support the development of moral values in the RCMK course, which is very important for students to gain identity and personality, lead a balanced life and social peace, support students' imagination and design skills, and prioritize working with groups and making projects, will be adopted. It's important to focus. This importance is critical for the effectiveness of the RCMK course of contemporary methods such as PBLA. For this, in the context of the RCMK course, it is necessary to analyse new methods that are suitable for this age and the education generation of this age, technology-based, touching the real life outside the school, innovative, applied and requiring teamwork. In these analyses, the possible reasons why PBLA, which is the finding of this research, does not contribute to the affective development of students related to moral values in the RCMK course should be well examined. Because these analyses and examinations can lead to new methods that will pave the way for the development of moral values, which are very important for both the individual and our country, more effectively. For this, it is an important need to develop new methods based on the technology of the age, including cognitive, affective and behavioural dimensions, which will bring moral values to the individual in the context of the education culture of our country, in the context of the RCMK course. In meeting this need, academicians and teachers have important responsibilities. The role of the Ministry of National Education is to make arrangements that will bring together academics and teachers in order to develop new methods that are suitable for the educational culture of our country and take into account contemporary, technological, psychological, social and economic dimensions.

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Argumentation Levels Review of Secondary School Students with Social Studies Course Content

Research Article

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ABSTRACT

Argumentation is a process that uses evidence, data, and reasoning. In the literature, it is noted that research on secondary school students' argumentation level in social studies course is quite limited. This research is aimed at determining the argumentation levels of students from 5th-7th grade using the content of the social studies course. This research was carried out with qualitative research method and structured interview technique was used in the research. Phenomenology model was used in examining study groups, consisting of 181 students in two secondary schools in Diyarbakir, Turkey, in the 2021-2022 academic year. The study group of the research was determined on a voluntary basis by simple random sampling method. The researcher's argumentation level determination form was employed as a data gathering method in the study. The data in the research form were analyzed by descriptive analysis. According to the findings of the research, the general argumentation levels of 5th-7th grade students are partially sufficient. While the class with the most sufficient argumentation level is the seventh grade, the most inadequate is the fifth grade. While the class with the most sufficiency in the claim component is the sixth grade, the class with the most sufficiency in the data, justification, qualifier, supporting and rebuttal components is the seventh grade. In this respect, it is recommended to carry out activities and argumentation-based activities aimed at increasing and improving the argumentation levels of 5th-7th grade students in the social studies course.

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Keywords:

Argumentation, Social Studies, Toulmin, Secondary School, Student

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Introduction

Argumentation originated from a Latin word “argumentum”. This word, is used similarly in many languages (argument in English, French, German, Russian), and is derived from the verb *arguo*. The word “argumentum” was formed by adding the word *mentum* to the end of the verb, which mostly expresses an action in Latin (Rigotti & Morasso 2009). Argument, on the other hand, is a product put forward in a discussion environment to support a claim (Kuhn & Udell 2003). Argument is a noun origin word and it also means various meanings such as proof, thesis, claim in Turkish (Turkish Language Institution, 2023). Argumentation, on the other hand, is a process in which various claims are made in order to solve a problem, the reasons supporting these claims are put forward, and the data available are used to prove the correctness or falsity of the concept (Fettahlıoğlu, 2013). Toulmin, in his book “The Uses of Argument”, describes argumentation as a process in which argumentation components such as data, justification, supporting and rebuttal are used to convince people about the validity of a particular claim (Oğuz & Demir, 2016). Güneş (2015), on the other hand, defines argumentation as trying to defend and explain an idea, hypothesis or thought by using proofs and evidence. Also argumentation, is also defined as a reasoning process in which evidence, data and components such as reasoning are used (Toulmin, 2003). Students learn to identify explanations for their beliefs via scientific discussions in the classroom, to give evidence to back up their statements, to recognise the limitations of their claims, and to respect opposing opinions through argumentation (Demirel, 2015).

From literature, it is seen that there are many argumentation-based evaluation models such as Giere, Lawson, Sandoval, Downing, Toulmin, Kelly and Takao, Gil and İlya, Schwarz, Zohar and Nemet, Neuman, Erduran, Simon and Osborne (Oğuz & Demir, 2016). However, it can be said that the mostly used model in the analysis of argumentation is the Toulmin Argumentation Model (TAM) (Topçu, 2017). TAM was designed by Toulmin and is recognised to be the most extensive of these assessment models (Ayas, Çepni, & Ayvacı, 2015).

The main argumentation components was developed by Toulmin and forming the structure of TAM. It consists of five basic components such as claim, data, justification, refusing and supporting. (Küçük-Demir, 2014). However, according to Torun (2014) and Kılıç (2022), TAM also includes a qualifier/limiter component. A limiter or qualifier is a statement that expresses the situations in which the argument will be valid and at the same time limits the argument (Torun, 2014). This process, in which qualifiers and delimiters are used as well as the argumentation components developed by Toulmin, in environments where scientific discussions are held, can be expressed as Toulmin's ABL (Argumentation-Based Learning) process. According to Toulmin, in a good argument, there should be an indirect or brief rebuttal in addition to the argument, data and justification components (Nussbaum, 2008). TAM consisting of six elements; It consists of three main components as claim, data, and justification, and three auxiliary components as supporting, qualifier and rebuttal (Cevger, 2018). In the light of this explanation, it can be said that an ideal TAM should have six components.

ABL not only provides the action of presenting evidence in connection with a claim, which is a cognitive feature, but also improves the ability to evaluate the accuracy and validity of the claim (Evagorou & Avraamidou, 2008). With the ABL approach, students can move away from rote learning and participate in the scientific discussion process with some reasoning activities by making various analyzes about what they have learned with the constructive learning approach (Oğuz & Demir, 2016). The main purpose of argumentation, which is a method of revealing students' ability to think effectively and express their thoughts, is to create a scientifically controllable discussion environment for students (Bilgiç, 2023).

ABL, which is effective in solving semi-structured problems such as socio-scientific difficulties, is a very useful strategy, particularly in discussing socio-scientific concerns and exchanging views with students by giving evidence (Sadler & Donnelly, 2006). In addition, the use of ABL in teaching socio-scientific issues gives

students various experiences by taking into account their individual beliefs (Zeidler & Nichols, 2009). In this regards, it can be said that ABL has developed many important skills of students such as decision making, active learning, critical thinking, scientific thinking, scientific literacy and developing positive attitudes towards science (Aslan, 2014; Bulut, Kaçar & Arıkan, 2019).

In literature, it is known that argumentation has some limitations as well as its positive features. In this way, there are some common problems amongst students in the argumentation process (problems about reality, simple meanings about the structure of the argument, the effect of self-beliefs on argumentation, insufficient evidence sample, evaluation of argument and evidence representations) (Zeidler, 1997 as cited in Demirel, 2015).

Argumentation should also be employed in social studies lectures, which are not commonly used in classrooms. However, a review of the literature reveals that there are just a few research (Memiş-Çakır, 2023; Oğuz & Demir, 2016; Torun, 2014) investigating the argumentation levels of secondary school students in the social studies course. As a matter of fact, according to Bağ and Çalık (2017), most of the studies on argumentation at primary school level were conducted on physics, biology, socio-scientific, environmental, chemistry and scientific subjects. However, Oğuz and Demir (2016) in their study where they examined the achievements in the 4th-7th grade social studies curriculum in line with the Toulmin argumentation components, it was determined that some achievements in the social studies curriculum were related to the argumentation components. When studies on argumentation in social studies lessons (Aydoğdu-Demir, 2019; Cevger, 2018; Serttaş, 2019; Şahin-Güneri, 2022; Yılmaz-Özcan, 2019) are examined, these studies are mostly focused on the effects of argumentation on students' academic success rather than determining students' argumentation levels. There are argumentation-based elements in the dimensions of concepts, values and skills in the social studies curriculum (Demir, 2017).

The major aim of this research is to investigate the argumentation levels of secondary school 5th-7th grade students with the social studies course material using the argumentation level determination form produced by the researcher in accordance with the literature. In this regard, the primary goal of this study is to measure the degree of argumentation of 5th-7th grade pupils with the material of the social studies course. Secondary school students' talents in scientific discussion, decision making, employing evidence, and problem solving may be measured by establishing their argumentation levels. As a result, this study is significant in terms of identifying students' higher-order thinking skills. Because of the scarcity of studies on this topic in the literature, it is safe to say that this research will make important contributions to social studies instruction. Furthermore, this research is a really novel study in terms of social studies teaching. Within the scope of this research, answers to the following research questions were sought in this manner.

- ✓ What is the level of argumentation of 5th grade pupils with the social studies course content?
- ✓ What is the level of argumentation of 6th grade pupils with the social studies course content?
- ✓ What is the level of argumentation of 7th grade pupils with the social studies course content?
- ✓ What is the level of argumentation of 5th-7th grade pupils with the social studies course content in terms of gender?
- ✓ What are the opinions of 5th-7th grade students about argumentation, argumentation process and activities?

Methodology

Research model

This study employed the qualitative research approach. In qualitative research projects, an attempt is made to get a thorough grasp of the issue under consideration (Karataş, 2015). As a result, this study was conducted as a qualitative study. In this study, a structured interview was conducted with the participants in

their classroom environment. With the interview technique, it is aimed to reach unobservable data such as the experiences, attitudes, intentions, thoughts, comments, mental perceptions and reactions of the individuals related to the subject investigated (Sönmez & G. Alacapınar, 2020). In this respect, this research was carried out in the phenomenology model. Interview is the activity of expressing the feelings and thoughts of the participants on a certain subject (Yıldırım & Şimşek, 2008). In this regard, the structured interview approach was used in this study for the purpose to thoroughly investigate the participants' argumentation levels. The researcher performed the structured interview as part of this research in the participants' social studies course during the second semester in the 2021-2022 academic year.

Working group

For the study group in this research, two secondary schools were determined in Diyarbakır, Turkey in the 2021-2022 academic year. The universe of this research comprised of 360 pupils studying in the 5th-7th grades in these two secondary schools. The entire universe of the study was informed about this research, but 240 students accepted this research on a voluntary basis. However, since only 181 parents signed the informed consent form, this study was conducted with 181 participants. The schools where the research was conducted were chosen using a basic random sampling procedure, i.e. by drawing lots. A simple random sampling strategy is one in which all units have an equal probability of being chosen (Kılıç, 2013). Table 1 shows the gender, grade level, and total number of participants in this study.

Table 1. Participants' gender and grade level

Grades	Gender		Total
	Female	Male	
5th grade	40	34	74
6th grade	22	25	47
7th grade	35	25	60
Total	97	84	181

As seen in Table 1, the research study group consists of 97 female and 84 male secondary school students. 74 of the participants are 5th grade, 47 6th grade and 60 7th grade secondary school students. Participants in this study were coded as K1, K2, K3,....., K179, K180, K181.

Data collection tools

In this study, scientific research level determination form developed by the researcher in line with the literature and expert opinions was used as a data collection tool. This form consists of five parts (instruction, characteristics of the participants, argumentation components, argumentation-related statements and components, open-ended questions about the research). In this direction, the researcher first conducted a literature review on account of determine the argumentation levels of the participants. Then, the researcher examined the 2018 Social Studies Curriculum and social studies textbooks and determined a content suitable for the argumentation components. In this direction, two associate professors, who were experts in social studies education, who conducted research on argumentation, were sent to evaluate the form developed by the researcher. The form for determining the level of argumentation developed by the researcher was arranged in line with the opinions and suggestions of the field experts and the form was given its final form. Information on this form, which was developed to determine the argumentation levels of 5th-7th grade students with the content of the social studies course, is shown in Table 2.

Table 2. Argumentation level determination form

Argumentation related activities and application instruction	
You need to match the mixed argumentation sentences given in the tables below with the correct argumentation components. Argumentation Components: 1. Claim 2. Data 3. Justification 4. Qualifier 5. Supporting 6. Rebuttal	
<i>Argumentation related sentences</i>	<i>Argumentation component</i>
It is known that the whistle language is also used in mountainous and uneven plain areas.	
It is stated in the historical documents that the economy of the Ottoman Empire was good during the period when the Silk and Spice roads were in their hands.	
Landforms in the east of the Black Sea have led to the emergence of the whistled language, which is one of the different types of communication between people.	
Since the silk and spice trade routes were in Ottoman hands, the Ottoman economy was good in the 15th and 16th centuries.	
Some of our citizens in the east of the Black Sea mostly use the whistled language.	
With the geographical discoveries, the Silk and Spice Road lost its importance and the Ottoman economy suffered.	
The whistled language, which has been developed and maintained as a communication system, is one of the different examples of human self-expression.	
According to the researches, it is estimated that nearly 10,000 people living in the east of the Black Sea communicate with the whistled language.	
In our country, due to the mountainous and rough terrain in the east of the Black Sea, the local people have developed the whistling language because the houses are far from each other.	
The control of historical trade routes has contributed to the economy of countries.	
This has been the case most of the time in history.	
The Ottoman Empire took taxes from those who used the Silk and Spice roads.	
Open-ended questions about the research	
1. Can you explain your views on the argumentation with reasons?	
2. Can you explain how the argumentation process affected you, along with the reasons?	
3. Would you like to do activities related to argumentation in the social studies lesson, can you explain it with the reasons?	
4. If you have any views you would like to express regarding the argumentation, could you explain them with their reasons?	

This form, prepared by researchers in accordance with literature and expert comments, was administered to participants over the course of two classroom hours (80 minutes). After giving information to the students about argumentation and its components in the first lesson hour (40 minutes), the researcher gave information to the students about how to fill out the argumentation level determination form he developed. Then, in the second lesson (40 minutes), the participants completed activities in the argumentation level determination form. Then, the participants wrote their answers to the open-ended questions about the research on the form. All students who accepted this application process were given an informed consent form to be signed by their parents. The research was conducted with 181 students whose parents signed the voluntary consent form.

Validity and reliability

In order to ensure that the information used in the form of determining the level of argumentation applied to the participants in this study is reliable and valid, the researcher first conducted a literature review on argumentation. The researcher then examined the course contents, which included argumentation components in social studies textbooks. Then, the researcher developed the argumentation level determination form in line with the literature. In order for the argumentation level determination form developed by the researcher to be valid, the opinions of two field experts, who are associate professors in the field of social studies education, who conducted research on argumentation, were consulted. After the suggestions and opinions of the field experts, the necessary changes were made and the argumentation level determination form was prepared. Then, with the decision dated 08.04.2022 and numbered 106, the necessary ethics committee permission was obtained from the Dicle University Social and Human Sciences Ethics Committee, and the implementation phase was started. The participants, whose parents filled the informed consent form on a voluntary basis, were included in the study.

Analysis of data

In the data qualitative research analysis, two types of analysis (content and descriptive) are made (Yıldırım & Şimşek, 2008). The data in the argumentation level determination form provided by the researcher and filled out by the participants were analyzed in this study using the percentage and frequency approach, as well as descriptive analysis. Descriptive analysis is a type of analysis in which the opinions of the participants are included with direct quotations when necessary, by adhering to the originality of the data obtained in a research as much as possible (Yıldırım & Şimşek, 2008). In this respect, the data of the research were analyzed with percentage and frequency technique and descriptive analysis in order to make this research data understandable and to reach more in-depth findings.

In addition, an evaluation criterion was adopted by the researcher to determine the adequacy of the argumentation level of the participants within the scope of the research. This activity were carried out within the scope of the research. Since there were 12 argumentation components in the this activity, the argumentation level was considered insufficient if the participants got the argumentation components between 0 and 4 correct. If the participants got the argumentation components correctly between 5-8 items, they were considered as partially sufficient, and if they got 9-12 items correctly, the argumentation level was evaluated as adequate.

Findings

Argumentation levels for 5th grade students

74 from 5th grade students participated in this research. In this context, the data on the adequacy of the argumentation levels of the participants are shown in Table 3 in the form of percentage and frequency.

Table 3. Argumentation adequacy levels for 5th grade students

Argumentation components	Adequate		Inadequate		Total	
	f	%	f	%	f	%
Claim	25	33.78	49	66.22	74	100.00
Data	18	24.32	56	75.68	74	100.00
Justification	24	32.43	50	67.57	74	100.00
Qualifier	27	36.48	47	63.52	74	100.00
Supporting	22	29.72	52	70.28	74	100.00
Rebuttal	28	37.83	46	62.17	74	100.00

According to the data in Table 3, the rate of conformity with the rebuttal component, in which the participants have the highest level of competence, is 37.83%, the rate of compliance with the qualifier component is 36.48%, and the rate of compliance with the claim component is 33.78%. In this respect, it can be said that three of the argumentation components of 5th grade students (rebuttal, qualifier, claim) are partially sufficient. The compliance rate for the data component with the lowest level of competence of the participants was 24.32%, the compliance rate for the supporting component was 29.72%, and the compliance rate for the justification component was 32.43%. According to this finding, it can be said that three of the 5th grade students' argumentation components (data, supporting, justification) are not at a sufficient level.

Argumentation levels for 6th grade students

47 6th grade students participated in this research. In this context, the data on the adequacy of the argumentation levels of the participants are shown in Table 4 in the form of percentage and frequency.

Table 4. Argumentation adequacy levels for 6th grade students

Argumentation components	Adequate		Inadequate		Total	
	f	%	f	%	f	%
Claim	18	38.29	29	61.71	47	100.00
Data	16	34.04	31	65.96	47	100.00
Justification	17	36.17	30	63.83	47	100.00
Qualifier	26	55.31	21	44.69	47	100.00
Supporting	14	29.78	33	70.22	47	100.00
Rebuttal	26	55.31	21	44.69	47	100.00

According to the data in Table 4, the rate of compliance with the rebuttal and qualifier component, in which the participants have the highest level of competence, is 55.31%, the rate of compliance with the claim component is 38.29%, the rate of compliance with the justification component is 36.17%, and the rate of compliance with the data component is 34.04%. Accordingly, it can be said that five of the 6th grade students' argumentation components (rebuttal, qualifier, claim, justification, data) are partially sufficient. The rate of compliance with the supporting component, in which the participants had the lowest level of competence, was 29.78%. According to this data, it can be said that only one of the argumentation components (supporting) of the participants is not sufficient.

Argumentation levels for 7th grade students

60 people from 7th grade students participated in this research. In this context, the data on the adequacy of the argumentation levels of the participants are shown in Table 5 in the form of percentage and frequency.

Table 5. Argumentation adequacy levels for 7th grade students

Argumentation components	Adequate		Inadequate		Total	
	f	%	f	%	f	%
Claim	16	26.66	44	73.34	60	100.00
Data	31	51.66	29	48.34	60	100.00
Justification	42	70.00	18	30.00	60	100.00
Qualifier	40	66.67	20	33.33	60	100.00
Supporting	30	50.00	30	50.00	60	100.00
Rebuttal	42	70.00	18	30.00	60	100.00

According to the data in Table 5, the rate of compliance with the rebuttal and justification component, in which the participants have the highest level of competence, is 70.00% and the rate of compliance with the qualifier component is 66.67%. Accordingly, it can be said that three of the 7th grade students' argumentation

components (rebuttal, justification, qualifier) are at a sufficient level. The compliance rate of the participants with the data component was 51.66, and the compliance rate for the supporting component was 50.00%. According to these data, it can be said that two of the 7th grade students' argumentation components (data, supporting) are partially sufficient. The rate of compliance with the claim component, in which the participants have the lowest level of competence, is 26.66%. According to this data, it can be said that only one of the argumentation components (claim) of the participants is not sufficient.

General argumentation levels of 5th-7th grade students

In Table 6, the findings regarding the adequacy ratios of the argumentation components of the 5th-7th grade students and the averages of the general argumentation levels of the 5th-7th grade students are shown as percentages and frequencies.

Table 6. Argumentation adequacy levels of 5th-7th grade students

Argumentation components	5th grade	6th grade	7th grade	Average
	Adequacy	Adequacy	Adequacy	Adequacy
Claim	%33.78	%38.29	%26.66	%32.91
Data	%24.32	%34.04	%51.66	%36.67
Justification	%32.43	%36.17	%70.00	%46.20
Qualifier	%36.48	%55.31	%66.67	%52.82
Supporting	%29.72	%29.78	%50.00	%36.50
Rebuttal	%37.83	%55.31	%70.00	%54.38
Average	%32.43	%41.48	%55.83	%43.25

According to data in Table 6, it was determined that the argumentation level of the participants was partially sufficient (43.25%) according to the general average of the argumentation levels of the 5th-7th grade students. The class with the highest level of argumentation is the 7th grade (55.83%) and the lowest level is the fifth grade (32.43%). The highest proficiency rate (38.29%) in the claim component belongs to 6th graders. The highest proficiency rate in data (51.66%), justification (70.00%), qualifier (66.67%), supporting (50.00%) and rebuttal (70.00%) components belongs to 7th grades. According to the averages of all participants, the argumentation components performed at the lowest level are claim (32.91%), supporting (36.50) and data (36.67%). According to the averages of all participants, the argumentation components that the participants performed at the highest level were rebuttal (54.38%), qualifier (52.82%) and justification (46.20%).

Students' argumentation levels in terms of gender

In Table 7, the proficiency frequencies and rates of the general argumentation levels of 5th-7th grade students in terms of gender are shown.

Table 7. Adequacy of argumentation levels of 5th-7th grade students by gender

Gender	Inadequate		Partially adequate		Adequate		Toplam	
	f	%	f	%	f	%	f	%
Female	52	%54	38	%39	7	%7	97	%100
Male	40	%48	31	%37	13	%15	84	%100

According to the data in Table 7, according to the general average of the argumentation levels of 5th-7th grade students in terms of gender, while the argumentation level of 54% of women is insufficient, the argumentation level of 48% of men is insufficient. While the argumentation level of 39% of women is partially sufficient, 37% of men are partially sufficient. While the argumentation level of 7% of women is sufficient, the argumentation level of 15% of men is sufficient.

Views of students from 5th-7th grades on argumentation, argumentation process and activities

The answers given by 5th-7th grade students to open-ended questions about argumentation, argumentation process and argumentation activities are given below with direct quotations. When the opinions of 5th-7th grade students about argumentation are examined:

F1 of the fifth grade students said, "I had difficulty in doing the argumentation activity. I couldn't understand much of the argumentation. I got a little confused. But I understood a little later." and K10 "I heard the argument for the first time. I liked the argumentation, but I had some difficulty finding the supporting and justification statements." expressed their opinion.

6th grade student K75 said, "I heard argumentation for the first time here. But in fact, I know that there are such sentences in the course, in the textbooks. I think the argumentation was not very difficult." and K80 "I had a hard time finding the most supporting sentence while filling out the argumentation form. But I didn't have much trouble finding other argumentation sentences. I did it comfortably. I think everything I've done is correct. That's why I think argumentation is good." expressed their opinion.

7th grade student K121 said, "I liked the argumentation. I think our activity with argumentation was simple. There were also necessary explanations and examples in the form. That's why I think the students will do the argumentation easily." and K130 "Although I got a little confused at first when I was doing the argumentation activity, I understood better later on and I believe that I made the pairings correctly. These types of activities make the class fun. Also, our knowledge is improving. That's why I would like to have argumentation in social studies class." expressed their opinion.

The answers given by 5th-7th grade students to open-ended questions about the argumentation process are given below with direct quotations. When the opinions of 5th-7th grade students about the argumentation process are examined:

K20, one of the fifth grade students, said, "The argumentation process was actually not very difficult, I could have done it better. I think the argumentation process was pretty fun." and K30 "Our teacher made explanations and gave examples during the argumentation process. But while filling out the form, I was getting confused which sentence was related to which argumentation. But it still went well." expressed their opinion.

K90, a 6th grade student, said, "The argumentation process went quickly, it went well. I enjoyed learning something different. Sometimes it's nice to do things like that in class." and K92 "Our guest lecturer made the necessary explanations to us during the argumentation process. Our task was to match the data correctly. Although I had some difficulty in finding the data component in the argumentation, I actually thought the activity we did was easy. I think the argumentation process went well for him." expressed their opinion.

K154, a 7th grade student, said, "The argumentation process went very quickly, I think it would be nice if we did a little more activity. I had a hard time finding the claim component while doing the argumentation activities, I was getting a little confused. Hopefully I did it right. That is why I find this process beautiful and beneficial." K160 "Our teacher, who attended our lesson during the argumentation process, gave us the necessary information and made sample argumentations. Then he gave us the event form. I filled out my form very easily. But you have to be careful or it can be easily confused. I did not find the argumentation process bad for him." expressed their opinion.

The answers given by 5th-7th grade students to open-ended questions about argumentation activities are given below with direct quotations. When the opinions of 5th-7th grade students about the argumentation activities done in the lesson are examined:

One of the fifth grade students, K42 “I like the social studies course very much. I like argumentation, so I want more activities like this to be done in social studies class.” and K47 “I think it would be very useful to do activities related to argumentation in our lessons. Because I think the social studies lesson went very well while doing this activity.” expressed their opinion.

6th grade students K100 said, “I want activities related to argumentation to be done continuously. This is because I was very happy when I did this activity in class. So the lesson passed quickly.” and K104 “When I first heard about the argument, I thought it would be difficult, but when our teacher started the activity, these were the sentences we heard in the social studies class. So even though the name is different, In fact, we hear such phrases a lot in class. That's why I would like more activities like this to be done in our class. I think these events will be beneficial.” expressed their opinion.

K170 from the seventh grade students said, “I think it would be beneficial to have activities related to argumentation in our lessons. Because I was very interested in doing such different activities in the lessons. I think these types of activities also improve our intelligence. I hope we will do such activities in the social studies class from now on. In this activity, it is as if you are solving a puzzle.” and K180 “Even though the word argumentation was foreign to me at first, I realized that it was an activity I could do when our teacher explained it to us. I think some attention needs to be paid to the event. If the activity is done carefully, it will be very useful. For this reason, I would love to have such activities in other lessons.” expressed their opinion.

When the participants' responses to the research's open-ended questions were reviewed, the students indicated that they first struggled with the argumentation process in the social studies course, but subsequently stated that they understood the argumentation process better. The majority of participants expressed satisfaction with the argumentation process. It can be said that the majority of the participants have a positive point of view towards argumentation. In addition, the opinion that argumentation activities make the social studies lesson more fun and enjoyable comes to the fore. In addition, the participants expressed a significant positive opinion about the argumentation-based activities in the social studies course.

Discussion and Conclusion

In this study, argumentation abilities of 5th-7th grade pupils were found to be relatively proficient. This outcome might be attributed to the lack of argumentation-based activities, particularly in social studies courses. Because an examination of the literature has revealed that the applications for reasoning in the social studies course are fairly restricted. Furthermore, when the participants' replies to the open-ended questions in this study were reviewed, it was established that the argumentation-based activities were not carried out in the social studies course. In their study, Torun and Şahin (2016) determined that the argumentation levels of the pupils in the 7th grade social studies course based on argumentation increased positively from the first activity to the last activity and that the argumentation levels of the participants improved over time. Similarly, in his study, Alınlı (2022) found that the argumentation method was effective in creating arguments in sixth grade social studies course, and there was an increase in the students' level of argument development from the first activity to the last activity. In addition, Alınlı (2022) determined that students produced quality arguments and that some students had difficulty in using the justification, supporting and rebuttal components.

As a result of this study, the insufficiency of students' argumentation levels in the 5th-7th grade social studies course may be attributed to the inadequacy of the argumentation technique and the inadequacy of argumentation-based activities in classroom practices. According to Torun and Şahin (2016), there is a gradual increase in the level of arguments formed by the students in the argumentation-based lessons in the process, the application period improves the argument quality of the students, and the students can gain the behavior of producing qualified arguments in long-term studies. Although the researchers claim that argumentation-

based teaching is widely used in the educational process, it can be stated that the argumentation approach is still not widely used in Turkey, particularly in social studies education, and that argumentation-based practises are insufficient (Aydoğdu-Demir & Turan, 2022).

In this study, the class with the most adequate argumentation level was the 7th grade, while the most inadequate level was the 5th grade. In the accessible literature, no research could be found in this context. However, it can be said that this result is related to the cognitive and developmental periods of the students. Because, it can be considered as a natural result that the knowledge, readiness level, age and developmental stage of a seventh grade student are more advanced than that of a fifth grade student. As a matter of fact, according to Seven and Engin (2008), in order for a good learning to take place in humans and for the organism to learn that behavior, it is necessary to reach the required age and age.

This study's findings show that, the argumentation level of women is lower than that of men. When the research findings are examined, while the adequacy ratio of the argumentation level in women is 7%, this rate is at the level of 15% in men. In the accessible literature, no research could be found in this context. According to the findings obtained in this study, it can be interpreted that this result is a normal situation, since there is no substantial proportionate difference in terms of the gender variable.

According to the outcomes of this research, participants' viewpoints towards argumentation are mostly positive. In this study, the activities based on argumentation made the social studies lesson more fun and enjoyable, and the participants showed a significant favorable view regarding the argumentation-based exercises in the social studies session. In his study, Memiş-Çakır (2023) found that fifth grade students who had positive thoughts about the argumentation process understood the subjects better and expressed themselves better thanks to argumentation. In his research, Akaydın (2022) determined that in the 4th grade science and social studies course, students were happy to teach with argumentation-based teaching and that they learned better. In his research, Aydoğdu-Demir (2019) reached the conclusion that ABL in the seventh grade social studies course provides effective and active participation of the students in the lesson, the lessons are fun, and the students want the argumentation-based activities to be applied in the lessons. It can be said that these results are in agreement with the results of this study. This result may be due to the fact that students did different and interesting activities in the social studies course. Because doing different, unknown or interesting activities in the lessons may have had positive effects on the attitudes of the students.

Memiş-Çakır (2023) investigated the impact of argumentation-based social studies education on fifth-grade students' argumentation level and readiness to dispute. When the argumentation-based activities were used individually and as a group in this study, the students' claim, evidence, reasoning, and rebuttal presentation levels grew as the activities progressed. Cevger and Akkuş (2022) demonstrated that the ABL technique improved students' scientific discussion skills in a 7th grade social studies course. TAM, according to Namlı-Altıntaş and Çengel-Schoville (2021), allows for the creation of critical thinking and discussion abilities, since social studies courses allow for critical discussions about current issues and challenges. TAM is regarded to be useful in social studies courses in this regard. Based on these considerations, it can be stated that teaching argumentation-based lessons to secondary school students in their social studies course is crucial in terms of the process of learning and teaching.

When research on argumentation in social studies courses were reviewed, it was discovered that the majority of these studies focused on the impact of argumentation on students' academic achievement and other abilities rather than assessing students' argumentation levels. As a matter of fact, Cevger (2018) found in his research that ABL contributed positively to seventh grade students' academic achievement and scientific discussion levels. In his study, Şahin-Güneri (2022) determined that using argumentation-based exercises in a primary school fourth grade social studies course had a good influence on kids' academic success, aware consumerism, and decision-making abilities. According to Yılmaz-Özcan (2019), ABL in the fourth grade social

studies course had a positive impact on students' academic achievement, critical thinking ability, and attitudes towards the social studies topic. Aydoğdu-Demir (2019) discovered in his research that ABL in the 7th grade social studies course was successful on students' course achievement and learning retention, but did not make a substantial impact in terms of boosting their attitude towards the subject. Serttaş (2019) stated in his study that ABL in the seventh grade social studies course had a substantial influence on students' course achievement and attitudes towards the subject.

The purpose of this study is to assess the degree of argumentation of 5th-7th grade students with the subject matter of the social studies course in accordance with the argumentation components. According to the study's findings: While the rebuttal, qualifier and claim components of 5th grade students' argumentation are partially sufficient, the data, supporting and justification components are insufficient. While the rebuttal, qualifier, claim, justification and data components of 6th grade students' argumentation are partially sufficient, the claim component is insufficient. While the rebuttal, justification and qualifier components of the 7th grade students' argumentation are sufficient, the data and supporting components are partially sufficient, while the claim component is insufficient. According to the averages of 5th-7th grade students, the argumentation levels of the students are partially sufficient. While the class with the most sufficient argumentation level is the 7th grade, the most inadequate is the fifth grade. While the class with the most sufficient claim component is the 6th grade, the class with the most sufficient data, justification, qualifier, supporting and rebuttal components is the 7th grade. While the components with the lowest competency of the participants in general are the claim, the supporting and the data components, the components with the highest competency are the rebuttal, qualifier and justification components. The argumentation level of women is lower than that of men. While the argumentation level of 39% of women is partially sufficient, 37% of men are partially sufficient. While the argumentation level of 7% of women is sufficient, the argumentation level of 15% of men is sufficient. According to the answers given by the participants to the open-ended questions of the research, the students' perspectives towards argumentation in the social studies course are mostly positive. Participants had difficulties in the argumentation process at first, but then they understood the argumentation process better. For students, activities based on argumentation made the social studies lesson more fun and enjoyable. In addition, the participants have a positive view of the activities based on argumentation in the social studies course.

Suggestions

Based on the findings of this study, it is recommended that more studies and activities based on argumentation be included in the course to raise and develop the argumentation levels of 5th-7th grade students enrolled in social studies. It is suggested that study be conducted on the influence of the gender variable on the level of argumentation. In addition, it is recommended that teachers prepare argumentation-based teaching environments for students in the social studies course.

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6th Grade Students' Opinions on Social Studies Lesson Taught Out-Of-School

Research Article

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ABSTRACT

The aim of this study is to analyze the views of high school 6th grade students on the course of social studies processed in out-of-school learning environments. The study was conducted through the method of phenomenology. The study is based on purposeful sampling and conducted in a secondary school classroom taught by one of the researchers. The classroom was in a state school in Istanbul, Turkey under the scope of social studies lesson. Throughout the lesson, various out-of-school activities were carried out for "Culture and Heritage" and "People, Places and Environments" learning areas within social studies curriculum. As for data collection, student opinions about experiences on these activities were collected. Participants before and after the study were interviewed face-to-face with semi-structured interview forms. Also, student diaries where students noted their experiences and reflections were also collected. At the end of the study, the data was enriched with focus-group interviews. The results obtained from the research were achieved by following content analysis. At the end of the study, the results showed that social studies course enriched with out-of-school learning environments made it easier and more effective for the students to reach course objectives. It has been established that student perceptions on social studies as an abstract and limited-opportunity lesson has been broken. Students who felt that they were at the center of the learning process took responsibility for trying to produce something and develop their skills. This has also contributed to the fact that the social studies is a lesson that facilitates the acquisition of effective and long-lasting experiences that enable practical learning.

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Keywords:

Social Studies Teaching, Out of School Learning Environments, Phenomenology

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Introduction

The concept of out-of-school learning, based on philosophical foundations up to Plato and Aristotle, has increased its importance in educational life over the course of hundreds of years. European philosopher such as J.J. Rousseau, Fröbel, Pestalozzi, and John Dewey have argued that nature and the immediate surroundings of individuals play a leading role in education. Children take part in real life and participate in learning with the five sensory organs concerning the levels of cognitive, sensory and evolutionary development (Tokcan, 2015). Because of the fact that nature and out-of-school environments are valuable places for people in order to improve their mental and sensory existence, this can also be used for the teaching process (Louv, 2018, p.67).

Students who observe, do experiments and share their knowledge with the social environment will have the opportunity to configure the information they learn. It can be said that learning that goes beyond the school walls will enable it to become permanent desired behaviors through skills-based activities. The developments seen in out-of-school learning environments are being taken seriously and have gone through the stage of updating official programs and understanding the process. The Republic of Türkiye Ministry of National Education Vision 2023 emphasizes that out-of-school learning environments will be addressed integratedly in courses in line with innovative educational foundations (2023 Education Vision Document, 2018).

Eshach (2007) defines the concept of non-formal learning between formal and informal learning as a form of learning that is regulated outside educational institutions and mostly based on volunteering. In the related literature, non-formal learning is accompanied by alternative expressions such as outside learning, extra-class learning, and out-of-school experiences. It can be said that the main point of action of out-of-school activities is to process the lessons attended at school in appropriate informal spaces (Şen et al., 2021). Out-of-school learning environments, which are supportive and complementary to the formal teaching program, provide a structure of many locations. It includes the diversity of out of school learning environments that are thought to contribute to their mental, sensory and physical development. (Şen et al.,2021; MNE, 2018; Şimşek & Kaymakçı, 2015).

Social Studies is a course that includes social sciences and citizenship issues for the realization of the social existence of the individual and deals with the communication and interaction of individuals with the social and physical environment in a chronological dimension. Social Studies teaching, which houses knowledge from many sciences such as history, geography, economics, sociology, and law aims to enable students to become active members of social life (Avcı Akçalı, 2019). In this context, the acquisition of a set of knowledge, skills and competencies by the children is considered among the primary objectives. Different methods can be used to achieve these goals, both inside and outside the school. It is known that the course of Social Studies processed by a single method or model of learning will be insufficient for those objectives (NCSS, 2017).

Social Studies teaching, which is seen in different parts of the world as a lesson in life, is also influenced by insights that offer a limited life experience as opposed to this label, which keeps the transmission of knowledge at the forefront. Social Studies taught outside of school can cause children to be removed from social experiences and not integrated with the vitality of daily social life (Foran, 2008). In fact, children who learn the vast majority of their knowledge about their environment and areas of life outside of school may feel limited in terms of opportunities in school (Avraamidou, 2015, p.110).

Recognizing the close environment in which students have lived, acquired different experiences and a sense of belonging to their surroundings is an important goal in the Social Sciences Teaching Curriculum. For this goal to be achieved, extra-school learning environments are needed where the student performs educational activities related to real-life environments or achievements. The application of innovative teaching

methods is believed to contribute to transforming cognitive and educational achievements into more lasting and meaningful learning (NCSS, 2017; MNE, 2018).

It is known that the course of social science course that should focus on real life and the center of the social structure is mainly conducted within the boundaries of schools in today's conditions. It is also highlighted in the studies as a general finding that this situation does not go inside or outside the class (Foran, 2008; Şimşek & Kaymakçı, 2015, p.7; Yılar & Tağrikulu, 2019, p. 45). Therefore, it is inevitable that social studies, in which in- and out-of-school activity-based learning cannot be done in accordance with the structuralist philosophy, is seen as a boring and memorized lesson. It can be said that social studies textbooks do not contribute to the realization of high-level thinking skills in students at the desired level, and they generally contain content at the level of knowledge and comprehension (Alaca, 2019, p.16). It becomes difficult for a textbook that does not provide sufficient opportunities to acquire social experiences and is closed to movement and development, to make students individuals who can influence life.

It is known that out-of-school teaching, which is known to be used in many disciplinary programs, is also preferred within the scope of social studies course. It can be said that Out-of-School Learning Environments (OSLE) will have a significant impact on preparing students for social life, making them familiar with real-world issues, and facilitating their socialization. It can be stated that various places with historical and geographical importance that can be used for out-of-school teaching will provide students with rich resources in terms of psychomotor, affective and cognitive. Considering the skill-based learning approach, these spaces, besides providing primary resources, can pave the way for the student to find solutions to the society and the problems of the age in which he lives (Tokcan, 2015, p.38).

It is possible for a social studies course to be carried out with OSLE both to establish a context bridge between the school and the society, and it is possible for abstract subjects to become concrete and dreams to come true in the natural environment. OSLE, which is seen to have a facilitating role in finding a way to become aware of and increase certain skills, values, and attitudes, can enable students to become constant producers in the mental sense (Alleman, & Brophy, 1994, p. 264; Şimşek & Kaymakçı, 2015, p.7).

When the Social Studies Curriculum gains are examined, it is understood that these are not determined independently from nature, artificial or natural environment, and many social and socioeconomic developments (Avcı, 2019, p. 16). In this context, based on the assumption that the research focus is society, it will be seen that the social studies course does many skill-based educational activities outside of school (Çengelci Köse, 2013, p.1826). Thus, it may become possible for a real-life lesson process, in which social and environmental factors are formed, to be more memorable and to blend real experiences with knowledge.

While the 2023 Education Vision Document foresees the acquisitions in the Social Studies Curriculum to be dealt with in relation to OSLE, the tables indicating which place is more suitable for which acquisitions are also included in the guides prepared by the Provincial Directorates of National Education within the Ministry of National Education. In the 2023 Education Vision Document, it is seen that the social studies course emphasizes the activity-based teaching of life skills to students in out-of-school spaces (2023 Education Vision Document, 2018, p. 90; OSLE, 2019). Thus, it will be ensured that students benefit from active learning models and various educational materials in order to solve real-life problems that are unlikely to be encountered at school in their own nature. As a result of these opportunities, which open the door to gain many experiences that they cannot see at school, by feeling with all their sense organs in OSLE, it will be possible for them to see the projections of their achievements in real life (Martin, 2004, p.77; Oktay, Ekinçi, & Şen, 2020).

When the literature was scanned, it was determined that the studies related to out-of-school learning environments were mainly related to the discipline of science (Saraç, 2017; Bakioğlu, 2017; Topaloğlu, 2016; Yıldırım, 2019; Aydın, 2019; Çebi, 2018; Erten, 2016; Katircioğlu, 2019).; Kilic, 2020). It has been seen that

studies on social studies education are few in number and generally theoretical studies (Ay, 2015; Üztemur, Dinç, & Acun, 2017; Aslan & Demircioğlu 2018; Avcı, 2019; Öner & Öztürk, 2019; Yıldırım, 2019; Karbeyaz & Kurt, 2020; Seyhan, 2020; Altan and Ünalı, 2021; Aydemir, 2021). Looking at the international literature, it has been determined that many practical and theoretical studies have been conducted on the effectiveness and importance of out-of-school teaching (Paris, Yambor, & Packard, 1998; Conaway, 2006); Davidson, 2006; Bamberger and Tal, 2008; Bertram, 2012; Behrendt and Franklin, 2014; Sim, 2015; Dumitru, 2018; Füz and Korom, 2019; Valentini and Bartolucci, 2019; Jidovtseff, Kohnen, Belboom, Dispa and Vidal, 2021). During the research, the opinions of the students about the social studies course supported by out-of-school learning environments were analyzed. In this context, the fact that the research in question is based on student experiences makes the study important. Within this importance, the aim of the study is to examine the opinions of the 6th grade students about the social studies course taught in out-of-school learning environments. It is thought that the research will give ideas and contributions to the literature related to social studies out-of-school learning environments in particular and to all areas of education in general.

Method

Research pattern

In the study, phenomenology was used in qualitative research methods. Within the framework of phenomenology, the ideas of the students who were in the process and had the opportunity to experience the moment were tried to be determined in detail. The phenomenology method aims to identify and analyze common meanings and schemas formed from experiences related to the phenomenon or concept in qualitative research (Creswell, 2014). Phenomenology is preferred as a functional method to clarify situations or phenomena that we cannot obtain in-depth and detailed information with the awareness of awareness (Yıldırım & Şimşek, 2016). As a result of this research, the phenomenology method was used in order to reveal in detail how the students' experiences regarding the OSLE -supported social studies teaching were.

Participants

Appropriate sample selection was preferred in determining the study group. In order to speed up the work in question, to advance the process in a practical way, and to save time and cost, an appropriate sampling method was used (Yıldırım and Şimşek, 2015). On the other hand, importance was given to the selection of students with high potential to participate regularly and effectively in activities to be carried out in out-of-school learning environments. In this context, a secondary school located in Istanbul with a high socio-economic level was preferred. The study group of the research, in the 2021-2022 academic year. A total of 24 students, 15 girls and 10 boys, are studying in the 6th grade. In addition, 8 students from a group of 24 people were studied in the focus group interview.

Study process

While designing the study process, appropriate learning areas, learning outcomes and appropriate out-of-school learning environments were determined by taking expert opinions. In the social studies course, it was decided on the learning areas of "Culture and Heritage" and "People, Places and Environments", which are advantageous in terms of out-of-school learning, and their acquisitions. Then, five different out-of-school learning venues were determined and a work schedule was created. The students were given the opportunity to visit five different places and to study the social studies course in the context of out-of-school learning. A place visit was made every week and social studies teaching was carried out in accordance with the active learning approach. After a short informative presentation was made in places such as Rahmi Koç Museum, Topkapı Palace, Turkish and Islamic Arts Museum, Sultanahmet Square and Atatürk Arboretum, activities for skills training started. Materials such as Search and Find Paper, Space Sketch, Chronological Date Line, Visual Completion were used in the activities designed in relation to the learning areas of "Culture and Heritage" and

"People, Places and Environments". The students, who showed and found the target places on the sketch, tried to show the chronological order of occurrence of these places on the date line. At the end of each activity, students were evaluated for their general situation. The event calendar is planned to last an average of four hours for each venue.

Data Collection Tools

Within the scope of the research, semi-structured interview forms and student reflective diaries were used as data collection tools. Semi-structured interview forms were developed in two different ways. One was used in face-to-face interviews and the other in focus group interviews. During the preparation process of the forms, expert opinions were taken, pilot studies were carried out and their final versions were given. The first of the forms was used for face-to-face data collection before and after the study. The second form was used in the room group study with a certain number of (8) students from the study group. The purpose here is for my students to influence each other and to remember and express points that they did not think of in face-to-face meetings. Another data collection tool is student reflective diaries. Reflective diaries are important for students to write their own feelings, thoughts and experiences. The findings were expanded by examining the student's expressions of the experiences and feelings about the activities in out-of-school learning spaces for the social studies course.

Analysis of Data

Interviews with the study group were recorded with a voice recorder to prevent data loss. Before starting the data analysis, firstly the data obtained from the interviews and diaries were transcribed. Transcribed data were analyzed by content analysis. Content analysis is a data analysis method that can be used to detect the presence of certain words and terms in a set of texts, and that provides a detailed description of the contents without breaking them out of context. Reaching the concepts and contexts to be used in the explanation of the data obtained can be stated as the main purpose of content analysis (Yıldırım & Şimşek, 2016).

In order to ensure the reliability of the data, Miles and Huberman (1994)'s reliability calculation formula was calculated. During the analysis phase, the opinions of 3 different experts were consulted on the theme, sub-theme and coding made by the researcher, and the analysis process was completed as a result of reaching a consensus. As a matter of fact, the reliability rate has increased to 84%, which shows that the reliability of the research is at a sufficient level. In order to increase the credibility of the data, sections from the interviews and quotations from the reflective diaries were added to the study. In order to ensure the validity of the study, social studies educators were allowed to examine the data collection tools. In line with the opinions of the field experts in question, the data collection process and the analysis of the data were discussed in a comparative way. In order to increase the validity of the study, student reflective diaries were also used together with the focus group interviews. In this process, attention was paid to ensure that the data collection tools were aimed at revealing findings that were supportive or related to each other.

Findings

Findings Obtained About the Opinions of the Students about the Social Studies Lesson Supported by Out-of-School Learning Environments

During the process, preliminary and final face-to-face interviews, focus group interviews and reflective student diaries were used. Before the experience and activity-based training carried out within the scope of OSLE, a preliminary interview was held with the students. After the end of the experience-based learning activities, the last face-to-face and focus group interviews were held. The answers given to the similar question

differ when compared before and after the application. The findings obtained from individual and focus group interviews and student diaries were classified and reported according to data collection tools.

Individual Interviews

Before the out-of-school learning-supported social studies teaching, students were interviewed face-to-face.

✚ In this preliminary interview, which was held before the activities to determine the views of the students on the social studies lesson, 10 of the students stated that they did not like the lesson at all, 7 of them said that they liked it a little, and the other 7 students liked it very much.

✚ In the interview held before the LOSS, 8 students stated that they did not find the lesson enjoyable at all, 10 students found it a bit boring, and 6 students stated that they had a lot of fun in the lesson.

✚ In the notes taken during the interview before the activities, about 25 statements emphasizing that the social studies course is abstract and boring were identified. Only 9 statements stated that the lesson was activity and game-based.

In the interview, 11 students stated that the social studies course should be in the last place compared to other courses in terms of importance, while 10 students stated that it was in the middle, only 3 students stated that the social studies course should be in the first place.

From the answers given to the theme of being liked in the Social Studies course, it was determined that the social studies course was not liked by about 50% of the participants. When we look at the codes in the theme of finding the Social Studies lesson fun and enjoyable, only 6 of the participants gave a positive answer. The majority of the participants stated that they never had fun and did not enjoy it. When the coding of the theme of the social studies course is examined, it is emphasized that the course is abstract and has a rote content. It is seen that there is no association with any place out of school. Considering the theme of the ranking of the social studies course among other courses, only 3 of the participants put the social studies course in the first place. On the other hand, the majority of the participants stated that when they needed to put the lesson in a sequence, it should be at the end or at best in the middle.

S4: *Since it requires verbal memorization, it is a course in the last place.*

S8: *Since it requires a lot of memorization and is abstract, it takes the last place.*

S13: *I like numerical lessons more. That's why social studies are at the end.*

After the out-of-school learning supported social studies teaching, the last face-to-face interview was held with the students. The statements obtained as a result of this interview are as follows:

✚ In the final interview, which was held after the activities to determine the students' views on the social studies lesson, 1 of the students stated that they did not like the lesson at all, 3 of them liked the lesson a little, and the other 20 students stated that they liked the lesson very much.

✚ In the interview after the OSLE, 2 students stated that they did not find the lesson enjoyable at all, 5 students found it a bit boring, and 17 students stated that they had a lot of fun in the lesson.

✚ In the notes taken during the interview before the activities, about 11 expressions emphasizing that the social studies course is abstract and boring were identified. In 35 statements, it was stated that the lesson was activity and game-based. In addition, all 24 students stated that the social studies course was suitable for use in different places.

✚ In the interview, 1 student stated that the social studies course should be in the last place compared to other courses in terms of importance, 5 students stated that it was in the middle, while 18 students stated that the social studies course should be in the first place in terms of importance.

Table 2 shows the themes, codes and their frequency conditions created in line with the opinions of the participant students regarding the teaching of out-of-school learning environments supported social studies course. After the activities in the context of social studies teaching supported by Out of School Learning Environments, some data were collected in the last face-to-face interview with the students. Despite the use of the same theme titles in the preliminary interview, the answers from the participants vary greatly. When compared with the pre-interview, it can be said that the participants experienced positive cognitive and affective changes related to the social studies course. As a matter of fact, 20 of the students gave the answer "I love it very much" to the theme of being liked in the Social Studies course. When the codes of the theme of finding the Social Studies lesson fun and enjoyable were examined, it was determined that the participants now enjoyed the lesson and found the lesson very entertaining. With the effect of out-of-school learning environments and practices related to spatial thinking skills, the codes that came to the fore in the theme of the status of the social studies course were *different space use* (24), *activity-based* (20), and *game-supported* (15). When it comes to the theme of the ranking of the social studies course among other courses, the majority of the participants (18) placed the course in the first place. It has been determined that the number of students who attend the course in the last row is only 1.

S1: *It takes the first place. It conveys a lot to us as we learn about historical natural assets.*

S4: *It is now in the 1st place because, thanks to many places, the places we visited proved that the social lesson is directly in life.*

S5: *It takes place in the first place because it provides national culture and socialization.*

S7: *I put the social studies course at the top because it is suitable for sightseeing observations.*

S15: *It is in the first place because it is entertaining and teaches us different places.*

S16: *Sketches are in the 1st place because they enable us to find places and directions through coordinates.*

S18: *Yes, I liked it very much, thanks to the activities outside the school. I hated it before.*

S21: *Although I did not like this lesson very much, the activities, games and excursions enriched my perspective on this lesson.*

Students' Reflective Diaries

The reflective diaries of the participant students have similar expressions with the data obtained from the face-to-face interview form in terms of content. The fact that the majority of the students found the lessons fun, enjoyable and activity-based was reflected in the statements. In addition, it was determined that visiting different places changed the perceptions of the students towards the social studies course. Some excerpts from the reflective student diaries are given below.

S6 stated that social studies teaching supported by out-of-school learning environments stimulated feelings such as curiosity and interest. He also stated that he has developed in many ways, thinking that he also contributed to his research skills.

The participant with the code S9 emphasized that map literacy and sketch reading skills improved thanks to the activities outside the school. Thus, he stated that he learned the subjects of the social studies course more easily.

The participant with the code S14 emphasized that social studies lessons with out-of-school learning environments made it easier for her to understand historical subjects and contributed to obtaining detailed information about the old social lives of Turks.

The student with the code S18 stated that he was very satisfied with the social studies course being conducted outside the school. In addition to this, T18 stated that museums and forests are very beneficial in terms of permanent learning, and that a much more fun and active lesson environment is formed.

Focus Group Discussions

After the end of the activities and site visits, some data obtained in the focus group interview with the students were analyzed in detail by the researcher. "How did you find the social studies course held within the scope of OSLE? Can you convey your feelings?" Some quotations from the answers given by the participant students to the question are given. The main excerpts obtained from the dialogues of 8 students who participated in the focus group interview are as follows:

S2: My interest and curiosity increased. It was also very exciting to do a learning activity outside. It allowed me to learn social studies subjects more comprehensively and in detail. I learned new concepts. For example, I learned better words such as legend, sketch, chronology, date strip as I used them in applications. My awareness of scientific developments and geographical landforms increased. This lesson has been very helpful.

S3: I saw that the subjects that I could not understand at school were better understood in the course within the scope of OSLE. The history strips we made about historical objects increased my interest in history. I learned how important the legend part on the maps is and how important the sketches are for the places.

S6: We got rid of rote and standard lectures in the classroom. I feel very peaceful. In the past, we used to teach either from a slide or from a book. But now we are doing lessons by visiting different places, doing activities and games. I am enjoying it immensely.

S7: We prepared for the next year. I learned by seeing. Maybe we discovered our talents thanks to these activities. Orienteering athletes can come from us now. So, it was very good.

S8: Thanks to travel and observation, we learned the lessons better. The use of material was very good. The lesson became more enjoyable with different tools-equipment and games. We have escaped the era of lectures or notebooks. We had lessons outside every week. It put us in an active rather than passive role. We were always creating something.

In the statements of the students who participated in the focus group interview, it is understood that social studies teaching progressed differently from the understanding in previous years. They stated that the social studies course taught by their teachers in previous years was far from being activity-based and limited to the classroom. The students emphasized that they were bored with the social studies course due to these factors and that they quickly forgot most of the subjects. This year's social studies teaching in out-of-school learning environments and with activities for the development of spatial thinking skills was found to be more enjoyable, entertaining, memorable and exciting for children.

Students who stated that they learned some of the concepts in the social studies textbook practically in the places they went, emphasized that they went through a more effective learning process. Slides, notebooks, reading from a book, teaching in class, etc. students who find the course process boring and abstract; found it more meaningful to produce something as a team by traveling, seeing, touching and collaborating.

Participating students, who stated that their interest in basic sciences such as history and geography increased, stated that they laid the foundations of the courses they will take in the next education steps. Historical artifacts in museums, historical squares, important inscriptions; Stating that they had the opportunity to examine different tree species in the forest, the arboretum, dam, and stream within the scope of in-class activities, the students emphasized that they would always remember that they loved the social studies lesson very much.

Conclusion And Discussion

In the face-to-face interviews with the students before the experience-based learning activities prepared in the context of OSLE, a significant portion of the students described the lesson as boring and considered it far from enjoyable and entertaining. Half of the participant students stated that they did not like the lesson. When we look at the quotations in the dialogues, the reasons behind the students' answers are that the social studies lesson is constantly taught in the classroom, it is far from being concretizing and experience-based, and the teacher usually teaches the lesson from the book and gives memorized homework. As a matter of fact, the students who emphasized that the course was abstract and rote-learned stated that they saw the social studies course in the last place in terms of being preferred or liked when compared to other courses. Similar responses from previous years and this reflected situation gave the practitioner teacher an idea about planning and implementing experience-based learning activities in the context of MDB in OSLE. Thus, he predicted that there would be a positive development in the students' perspectives towards the social studies course.

The last face-to-face interview and focus group interview conducted with the students after the learning activities carried out during the OSLE-supported education process reveal that the students' views on the social studies course have changed in a positive way. The majority of the class stated that they liked the lesson very much, that they found it fun and enjoyable, and that it contained content suitable for the use of different places and educational games. In addition, when compared to other courses, when a ranking is required according to the state of being preferred and liked, almost all of the students saw the course in the first place. When the findings obtained from the last face-to-face and focus group interviews are examined, the reasons for this change are revealed. In the statements of the students, it was emphasized that teaching the lesson in places such as museums, forests, palaces and historical squares outside the school contributed to the learning of the subjects in a concrete and easy way. Map/sketch usage, Search-Find etc. It has been determined that activities such as finding and analyzing the works in the worksheets in the said places and showing them in the history line make the lesson fun, enjoyable and far from boring. On the other hand, observing and touching some of the works related to the subject in the spaces related to the learning outcomes, the concrete atmosphere of the spaces in question, and the active role of the students in the learning activity in cooperation increased the interest and love for the lesson.

As a result, it has been determined that the social studies teaching, which is mainly carried out in the classroom and the student is generally passive, has a negative picture for the student. The practices made throughout the process, the active role of the student in the activities, the use of rich learning environments, the use of various concrete materials have changed the views and perspectives of the students towards the lesson in a positive way. It has been concluded that the social studies course taught in historical and geographical places enables the students to reach the goals specified in the curriculum more easily and effectively. It has been determined that the perception that the social studies course is a rote and abstract course conducted with limited in-class facilities has been broken in the eyes of the students.

An in-class SSC in which traditional teaching methods are applied was described as boring and far from concrete for students. However, emphasizing that the relationship between life and social studies course is weak, it is an important situation found in the literature that the importance of social studies course among others is behind the students (Altın & Demirbaş, 2012; Akengin & Ersoy, 2015; Avcı & Gümüş, 2020; Red, 2021). It can be said that a limited and monotonous expression in the classroom alone will not be sufficient in terms of permanent learning and will not attract the attention of the student. Indeed, Ateş, Ural and Başbay (2012); Hakverdi-Can (2013); Bozdoğan (2008); Sasson (2014); Chin (2004); It was determined that similar data were obtained in the research findings of Henriksson (2018). The activities in ODÖO allowed students to actively benefit from the learning process by doing/experiencing. Learning activities carried out in cooperation have affected children's social skills and contributed positively to their emotional perspectives on the social

studies course. The student, who felt that he was at the center of the learning process, took responsibilities to develop his skills by making an effort to produce something. This has contributed to the social studies course being a course that provides concrete learning and facilitates effective and permanent experiences. When the views of the students were analyzed, it was determined that the results were consistent with the current research findings in the literature (Gönülcü, 2019; Çakır, 2019; Yazıcı, Ertürk, & Kulaca, 2022).

Suggestions

● Social studies lessons can be taught in the training workshops in museums and various cultural/art institutions by contacting them directly.

● Since this study is carried out directly with students, conducting studies in which the reflection of the research on parents and school administrators is discussed will contribute to the literature.

● This research was conducted with a class of only 24 students. Researchers may be advised to conduct studies by considering the two classes in a comparative way.

● This study on historical and geographical places in Istanbul can be reconsidered by taking into account the out-of-school learning environments in other cities. Thus, more comprehensive research findings can be obtained.

● By providing voluntary support of public/private institutions or persons who are the stakeholders of the schools, an opportunity can be created for students to benefit more from out-of-school learning environments.

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Investigation of Pre-Competition Anxiety Level: An Empirical Application on Team Athletes

Research Article

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ABSTRACT

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This study aims to determine the pre-competition anxiety level and the affecting factors of this anxiety level in team athletes. The relational screening method, one of the quantitative research designs, was used in the study. The population of the study consisted of athletes over the age of 18 from the branches of underwater hockey, football, and handball, who had a good training level and participated in competitions; the sample consisted of 379 competitive athletes (age:21.83±4.12), 147 of whom were female and 232 of whom were male, determined according to 95% confidence interval and 5% margin of error. Data was collected with the "Revised Competition State Anxiety Inventory-2 (CSAI-2R)". T-test, one-way analysis of variance (ANOVA) and Pearson correlation test were used in the analysis of the data. According to the obtained statistical results, cognitive anxiety scores in all branches were between 8.11-8.62 and at a high level; somatic anxiety scores were between 7.54-8.34 and at a moderate level; self-confidence scores were found to be between 14.61-14.95 and at a high level. It has been observed that men have a more positive effect on communication with the coach than women. It was determined that somatic anxiety based on branch was high in favor of the handball branch.

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Keywords:

Competition anxiety, team sport, underwater hockey, handball, football

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Introduction

In recent studies, we see that anxiety, one of the psychological concepts, comes to the fore and takes place in the literature as a feature. It is defined as the fear and curiosity that occur in individuals with the perception of the threat, along with physiological arousal (Anshel et al., 1991; Cox, 1994; Martens et al., 1990; Raglin, 1992). Considering that the concept of anxiety includes psychological processes and is an important factor that needs to be managed and controlled in the connection between sports and performance (Koc, 2004), the anxiety factor has always been the focus of attention in the relationship between sports and performance. Since sports competition environments are strong and motivational environments in terms of competition, it is not possible to have a loose attitude or be free of anxiety in competitions (Akgonul et al., 2022). In this respect, when the sports psychology literature is examined, one of the important issues that draw attention is the anxiety levels that occur in athletes during competition processes. These anxiety levels are important for the performance of the athletes and when it exceeds the optimal level, it is a strong actor that affects the performance (Ghorbanzadeh & Bayar, 2013), no matter how talented and skillful the athlete is, the athlete living in fear will not do his best (Athans & Sampson, 2013; Bayansalduz, 2014). The higher the level of uncertainty about the athlete's perception of his sportive performance, the higher anxiety and stress levels before the competition (Paa et al., 2019). Many studies have been conducted explaining the relationship between anxiety and performance, and it has been concluded that anxiety affects the performance of athletes in a negative way (Gill, 1986; Gould & Krane, 1992; Khan et al., 2011; Sonstroem & Bernardo, 1982). The tendency to show successful performance in sports takes place in a system where physical and psychological factors are effective. In addition, one of the most important psychological factors is having the ability to perform best in a high-pressure environment (Geukes et al., 2013; Ilundain-Agurruza, 2015; Mesagno & Hill, 2013). On the other hand, it is known that the performance of athletes who are exposed to excessively stressful environments decreases significantly because their anxiety level before the competition increases considerably (Baumeister, 1984). When the literature is examined, many studies have been conducted regarding anxiety levels before the competition, mainly involving sports branches such as football, handball, volleyball, basketball, tennis, taekwondo and swimming (Nikseresht et al., 2017; Radzi et al., 2018; Singh et al., 2017; Wang, 2021; Ghorbanzadeh & Bayar, 2013; Singh & Punia; 2017). These studies were generally examined individually and their basic anxiety levels were analyzed. However, the current study covers sports branches with different strengths such as underwater hockey, football, and handball, and they are categorized as water, on-field, and indoor. Since it will be possible to compare the anxiety levels of each of these categories with the anxiety levels between the categories, studies paralleling this content of the study have not been found in the literature. In this respect, it is considered that it will contribute to the literature. It is thought that the findings obtained as a result of the comparison of the anxiety levels between the categorized sports branches of the study will help the athletes in their efforts to control and manage the anxiety levels that exceed the optimal limit experienced before the competition and have negative effects on the performance of the athletes. Emphasizing the importance of the current study can give an idea that it will guide sports psychologists or mentors. From this point of view, it is aimed to examine the anxiety levels of underwater hockey, football, and handball athletes before the competition in the study.

Methodology

Research model

In this study, which aims to determine the anxiety levels of team athletes before the competition and to determine the factors affecting the anxiety levels of the athletes, one of the quantitative research designs, the instantaneous scanning model, which is one of the research designs in which the current situation is reflected as it was used (Buyukozturk et al., 2018). In order to determine the effective factors, the

comparison method was used for comparing of selected independent variable groups (Fraenken et al., 2012; Mangolo et al., 2021). There are more than three groups of categories to be compared. One of them is sports branch and includes three groups; underwater hockey, football, handball. The other one is gender and includes two groups as male and female. It was compared, according to positions and sports age too.

Sampling

In this study researchers' selection of a sample from any part of the universe; the random sampling method was used because sampling was taken from any relevant club (Kılıç, 2013). The universe of the research consists of underwater hockey, football, and handball athletes who are competitors in Turkish leagues, have a good training level, over the age of 18. Sample size was made using G-power analysis, it has been calculated that at least 176 athletes in total for the t-test and at least 280 individuals in total for the ANOVA test with medium effect size, 95% confidence interval. The research group consists of a total of 379 athletes (age: 21.83±4.12), 145 women and 234 men, who participated in the competitions. The criteria for participants to be included in the research are to be 18 years of age or older, to play team sports and to participate in national or international competitions. The exclusion criteria of the participants are to be under the age of 18, not to do team sports, and not to participate in national or international competitions.

Table 1. Descriptive Statistics of Participants' Socio-Demographic Information

Variables	Groups	Underwater Hockey		Football		Handball	
		n	%	n	%	n	%
Gender	Female	49	12.93	-	-	96	25.32
	Male	56	14.77	142	37.46	36	9.52
Educational Status	High School	58	15.30	64	16.88	61	16.09
	Bachelor's Degree	47	12.40	78	20.58	71	18.75
Sports Background	0-1 Years	13	3.43	31	8.18	7	1.85
	1-4 Years	80	21.11	49	12.93	41	10.82
	4 Years and more	12	3.17	62	16.36	84	22.15
Level of Income	Moderate	54	14.25	82	21.64	61	16.09
	Good	48	12.66	52	13.72	58	15.30
	Very Good	3	0.79	8	2.11	13	03.44
Educational Status of the Mother	Primary S.	20	19.0	25	17.6	17	12.9
	Secondary S.	29	27.6	40	28.2	26	19.7
	Highs School	49	46.7	61	43.0	55	41.7
	Bachelor's Degree	7	6.7	16	11.3	34	25.8
Educational Status of the Father	Primary S.	15	14.3	12	8.5	6	4.5
	Secondary S.	30	28.6	23	16.2	21	15.9
	High School	52	49.5	81	57.0	64	48.5
	Bachelor's Degree	8	7.6	26	18.3	41	31.1

As seen in Table 1, it is expressed that 61.75% of the athletes are male, 51.73% are in the level of education of bachelor's degree, 86.54% have a sports background of more than one year, and 48.02% have a good level of income. All of the football participants are male.

Data Collection Tools

As data collection tools in the research, the "Personal Information Form" developed by the researchers to collect information about the demographic characteristics and characteristics of the athletes and the "Revised Competitive Sport Anxiety Inventory-2 (CSAI-2R), developed by Cox, Martens, and Russel (2003), validity and reliability study of which for Turkish was conducted by Akgonul et. al., (2021) were used.

Personal Information Form (PIF)

It was developed by researchers to collect information specific to athletes such as age, gender, sports background, educational status, economic level, playing position, level of communication with the coach and type of coach. PIF consists of 11 questions.

Revised Competition State Anxiety Inventory-2 (CSAI-2R)

This inventory was revised by Cox, Martens, and Russell (2003) and consists of 14 items and 3 sub-dimensions. Sub-dimensions consist of cognitive anxiety (1,3,8,11), somatic anxiety (4,6,9,12,14) and self-confidence (2,5,7,10,13). The inventory has a 4-point Likert-type rating; none (1), a little (2), quite (3) and a lot (4). In the evaluation of the scores obtained by the participants from the inventory, the scores obtained from the items are added. High scores from the inventory indicate higher levels of somatic and cognitive anxiety or high self-confidence (Akgonul et al., 2021). However, while cognitive and somatic anxiety from the three sub-dimensions of the scale reveals the anxiety level of the athlete; the self-confidence sub-dimension is related to the self-confidence of the athlete and consists of positive statements. The total score of the scale does not reveal the level of anxiety, so the evaluation was made at the level of sub-dimensions. The score range in the sub-dimensions of the scale is 4-20 points. The score range for the 4-item cognitive anxiety sub-dimension is 4-16 points; the score range for the 5-item somatic anxiety and self-confidence sub-dimensions is 5-20 points. Accordingly, for the cognitive anxiety sub-dimension; (0-4.0) low, (4.1-8.0) moderate, (8.1-12.0) high, (12.1-16.0) very high; for somatic anxiety and self-confidence sub-dimensions; it was evaluated as (0-5.0) low, (5.1-10.0) moderate, (10.1-15.0) high, (15.1-20.0) very high.

Protocol

Voluntary clubs were identified for eligible participants and the scale items and questions in the personal information form were prepared online. By preparing scales and forms online, they were sent to all participants online, and answers were received. Before the study, the athletes and club administrators were briefly informed online, and the consent of all athletes was obtained in accordance with the Declaration of Helsinki. The clubs were asked for competition calendars and through club coaches, athletes were asked to fill out scales and forms 60 minutes before the competition. The procedure and purpose were briefly explained to all participants and the application was made 60 minutes before the competition, allowing the participants to individually prepare for the competition.

Analysis of Data

The data obtained in the study were analyzed in the SPSS statistical analysis program. Normality analyses of the data were tested with "Skewness-Kurtosis" and it was determined that the data had a normal distribution. In this direction, the frequency distribution for descriptive statistics and the "independent groups t-test" to examine the mean difference between independent groups were used in the analysis of the data. The difference between competition anxiety scores according to socio-demographic characteristics such as age, sports background, coach communication level, education level, and position was evaluated with the "ANOVA" test. Due to the fact that the variances were equal and the number of groups was not equal, the difference between the groups was examined with the Gabriel test, which is one of the posthoc tests (Kayri, 2009). The statistical significance level was accepted as 0.05. It is known that internal consistency reliability ($\alpha=0.70\leq$) is sufficient for reliability (Buyukozturk, 2011). Accordingly, the alpha coefficient for the sub-dimensions of the CSAI-2R was between ($\alpha=0.71-0.80$) in the group whose validity and reliability was performed; in the current research group ($\alpha=0.71$), it was determined that the inventory is a reliable measurement tool. The relationship between sub-dimension scores and independent variables was evaluated with the "Pearson correlation" test; the correlation coefficient between 0.00-0.30 was interpreted as

a weak relationship, between 0.30-0.70 as a medium level relationship, between 0.70 and 1.00 as a high-level relationship (Buyukozturk, 2002; Ozudogru&Aydin, 2016).

Findings

According to Skewness and Kurtosis results data found between +1.5/-1.5 and it was determined that the data showed normal distribution (Tabachnick and Fidell, 2013). Dependent and independent variables tested with “independent t-test” and “ANOVA” test. The frequencies of the demographic data of the participants were made with descriptive statistics.

Table 2. Independent t-test results of the difference in CSAI-2R sub-dimension scores, coach communication score and age variable according to gender

Variables	Gender	n	X	Sd	t	p
Cognitive Anxiety	Female	145	8.20	2.40	-.663	.508
	Male	234	8.37	2.58		
Self-Confidence	Female	145	14.83	2.82	.200	.842
	Male	234	14.77	2.72		
Somatic Anxiety	Female	145	7.85	2.66	-.808	.419
	Male	234	8.07	2.60		
Coach Communication	Female	145	5.37	2.41	-6.628	.000*
	Male	234	6.99	2.26		
Age	Female	145	20.96	4.13	-3.285	.001*
	Male	234	22.38	4.04		

*p<0.05

As seen in Table 2, it was determined that the cognitive and somatic anxiety sub-dimension score, which is one of the sub-dimensions indicating anxiety, was higher in males and the self-confidence sub-dimension score in females was higher in the CSAI-2R scale. It was determined that there was no significant difference between the cognitive-somatic anxiety and self-confidence mean scores of the participants according to gender (p>0.05). On the other hand, it was determined that the communication scores of the participants with their coaches and the average age were significantly different in favor of males according to gender (p<0.05).

Table 3. ANOVA results of CSAI-2R sub-dimension scores comparison according to branches

Sub-dimensions	Branches	n	X	Sd	F	p
Cognitive Anxiety	Underwater	105	8.19	2.40	1.609	.202
	Hockey					
	Football	142	8.11	2.37		
	Handball	132	8.62	2.73		
Self-Confidence	Underwater	105	14.85	2.84	.553	.576
	Hockey					
	Football	142	14.61	2.67		
	Handball	132	14.95	2.79		
Somatic Anxiety	Underwater	105	8.15	2.79	3.558	.029*
	Hockey					
	Football	142	7.54	2.42		
	Handball	132	8.34	2.66		

*p<0.05

As seen in Table 3, the cognitive anxiety scores in the branches were between 8.11-8.62 and high; somatic anxiety scores were between 7.54 and 8.34 and moderate, and self-confidence scores were found to be between 14.61-14.95 and at a high level. According to the branches, there was no significant difference between the cognitive anxiety and self-confidence sub-dimension scores of the participants (p>0.05; p=.202;

p=.576), there was a significant difference between the somatic anxiety sub-dimension scores ($p < 0.05$; $p = .029$), and it was determined that this difference was caused by football and handball branches ($p = .033$).

Table 4. ANOVA results of CSAI-2R sub-dimension scores according to positions

Branches	Position	n	Cognitive Anxiety	Self-Confidence	Somatic Anxiety
Underwater Hockey	Wing	45	8.38	14.76	7.87
	Golly	21	7.76	15.76	7.90
	Forward	24	8.25	14.33	8.58
	Midfielder	15	8.13	14.67	8.67
F			0.316	1.021	0.567
p			0.813	0.387	0.638
Football	Goalkeeper	23	8.09	14.52	7.69
	Defence	48	8.10	14.38	7.27
	Forwards	39	7.92	14.77	7.72
	Midfielder	32	8.34	14.81	7.59
F			.183	.236	.301
p			.908	.871	.824
Handball	Playmaker	51	8.24	14.39	8.29
	Wing Forward	45	8.58	15.51	8.31
	Center Forward	19	8.39	15.21	7.74
	Goal Keeper	17	10.18	14.82	9.24
F			2.307	1.369	.975
p			.080	.255	.407

* $p < 0.05$

As seen in Table 4, there was no statistically significant difference between cognitive, somatic anxiety and self-confidence, according to position variables in the sub-dimension mean scores of the CSAI-2R scale in branches ($p > 0.05$).

Table 5. ANOVA results of CSAI-2R sub-dimension scores according to sports age

Branches	Sports age	n	Cognitive Anxiety	Self-Confidence	Somatic Anxiety
Underwater Hockey	0-1 years	13	9.00	14.00	9.15
	1-4 years	80	7.92	14.92	7.76
	4 years and more	12	9.08	15.25	9.67
F			2.106	.723	3.562
p			.127	.488	.032*
Football	0-1 years	31	8.16	14.70	8.25
	1-4 years	49	8.43	14.69	7.06
	4 years and more	62	7.82	14.48	7.55
F			.907	.113	2.376
p			.406	.893	.097
Handball	0-1 years	7	9.86	13.71	8.29
	1-4 years	41	8.12	14.80	8.31
	4 years and more	84	8.76	15.11	9.24
F			2.307	1.369	.975
p			.080	.255	.407
Team Sports	0-1 years	51	8.61	14.39	8.61
	1-4 years	170	8.12	14.83	7.62
	4 years and more	158	8.42	14.88	8.18
F			1.003	0.631	3.517
p			.368	.533	.031*

* $p < 0.05$

As seen in Table 5, the pre-competition anxiety levels of the team sports players were in the sub-dimension averages according to the sports age, there was a significant difference only between the somatic anxiety scores of the underwater hockey players ($p < 0.05$); and it was concluded that there was no significant difference between the sub-dimension scores of other branches according to sports age ($p > 0.05$). It has been determined that there is a significant difference between the somatic anxiety scores of the team sports athletes according to the sports age ($p < 0.05$). It was determined that this difference between the mean scores of the somatic anxiety sub-dimension was due to the sports age of 0-1 years and those of 1-4 years ($p = .042$).

Table 6. The relationship between CSAI-2R sub-dimension scores and age and coach communication score

Branches	Variables	\bar{X}/Sd	Cognitive Anxiety	Self-Confidence	Somatic Anxiety
Underwater Hockey	Age	20.84±4.19	-.061	-.042	.019
	CCS	5.78±2.67	-.020	.080	-.073
Football	Age	21.12±3.78	-.198*	.099	-.210*
	CCS	6.92±2.35	-.178*	.242**	-.074
Handball	Age	23.39±4.00	-.264**	.167	-.114
	CCS	6.25±2.23	-.205*	.234**	-.139

** $p < 0.01$; * $p < 0.05$; CCS: Coach Communication Score

As seen in Table 6, it was determined that there was no significant relationship between the age and coach communication levels of the underwater hockey players and their cognitive-somatic anxiety and self-confidence scores before the competition. It was found that the age of football and handball players and cognitive anxiety sub-dimension scores were weak, negatively and significantly correlated; according to this it was concluded that the cognitive anxiety level before the competition decreased significantly as the age increased in the team players playing football and handball. On the other hand, it was found that there was a weak, negative and significant relationship between age and somatic anxiety scores in football players; according to this, it was concluded that as the age of the football players increased, the pre-competition somatic anxiety also decreased. It has been determined that there was a weak, negative and significant relationship between the coach communication score and cognitive anxiety scores in football players and handball players. There was a weak, positive and significant relationship with self-confidence scores on football and handball players. However, it was determined that the communication level of the coach was not significantly related to the pre-competition somatic anxiety of these athletes. In line with this result, the increase in the level of communication of football and handball athletes with their coaches decreased pre-competition cognitive anxiety, increased self-confidence and does not affect somatic anxiety.

Table 7. The relationship between CSAI-2R scale sub-dimension scores

Sub-Dimensions		Cognitive Anxiety	Somatic Anxiety
Self-Confidence	r	-.447**	.286**
	p	-.000	-.000
Cognitive Anxiety	r		.541**
	p		.000

** $p < 0.01$; * $p < 0.05$

As seen in Table 7, it was determined that there was a significant and positive relationship between the cognitive and somatic anxiety scores of the team athletes before the competition and a significant and negative relationship between the cognitive- somatic anxiety scores ($p = .001$). According to this result, it can be stated that as cognitive anxiety increases in team athletes, so does somatic anxiety; on the other hand, it can be said that as cognitive- somatic anxiety decreases, self-confidence will increase.

Discussion and Conclusion

In this study, which was carried out to determine the anxiety levels of team athletes before the competition, it was determined that cognitive and somatic anxiety levels were in favor of males, and self-confidence levels were in favor of females. Unlike our study, Gould et al., (1987) reported that male basketball players showed lower levels of cognitive anxiety than female basketball players. In his study with female gymnasts, Krane (1994) reported that cognitive anxiety increased and self-confidence decreased during competition. The reason why this result is different from the result of our current study is thought to be due to the fact that the experimental study was conducted and the number of samples was different.

When the research results of our study are examined on a branch basis, it will be seen that cognitive anxiety is at a high level, somatic anxiety is at a moderate level, and self-confidence is at a high level in the sub-dimensions. In the study, it was seen that the cognitive-somatic anxiety and self-confidence levels of handball players were higher than football players. It is thought that the reason for this is the anxiety of underperforming before the competition and the fear of disappointing their teammates and other team members. In this direction, the high self-confidence scores of handball players may be due to the fact that the athletes' confidence in themselves and their teammates is directly proportional. Considering that the level of somatic anxiety is the highest in handball players, it is thought that this is due to the fact that the handball players experience somatic anxiety before the competition, due to their reaction to the dangers to be experienced or the failure in their efforts to overcome them. Krane (1994), who parallels our work; Jones and Cale (1989); Martens et al., (1990); The results of the studies of Hanton et al., (2004) also revealed similar results. As the competition moment approached, the cognitive and somatic anxiety of the athletes increased, while their self-confidence levels decreased. Carron and Prapavessis (1997) found that athletes were less anxious when they were in a team or with their best friends than when they were alone. Martens et al., (1990) reported that individual sports athletes have higher cognitive and somatic anxiety and lower self-confidence than team athletes. Similarly, Martin and Hall (1997) found in their study that the cognitive and somatic anxiety levels of ice skaters were higher than team athletes. In line with the literature studies, although the anxiety level of team athletes before the competition is low compared to individual sports athletes, it is seen that team athletes experience anxiety before the competition and this anxiety is higher than those who do sports in the hall, in the water or on the field.

In the current study, although it was found that the mean values of the sub-dimension score averages were different from each other depending on the positions of the athletes in the position variable, it was determined that this difference was not statistically significant. According to gender, it was determined that there was no significant difference between the cognitive-somatic anxiety and self-confidence mean scores of the participants. A significant difference was found between communication with the coach, age and gender. According to this result, it was seen that males showed a more positive approach to communicating with the coach and adopting an open communication style than females, and their communication levels were higher. It is thought that the reason for the high level of cognitive anxiety of team athletes in different branches according to their positions, underperformance due to the difficulties of the position, focus on the task, lack of motivation and negative feedback are the mood factors that negatively affect the performance. Along with the physiological changes that occur with increasing somatic anxiety, reactions such as high heart rate, nausea and pain, muscle spasms and inability to focus are observed in athletes (Konter, 1996). It is thought that the reason for high self-confidence is due to the fact that task and ego orientations and perceived motivational climate are positively related to performance mood (Toros et al., 2010). In the current study, it was determined that team athletes were open to communication with their coaches at a high level, while underwater hockey players had the lowest level of communication. The reason for this is thought to be due to the fact that he can communicate with his coach more easily during the match in football (Bayansalduz,

2012), and that the technique, tactics and skills that footballers should have are more specific than underwater hockey players. It was determined that there was no significant relationship between the age and coach communication levels of the underwater hockey players and their cognitive-somatic anxiety and self-confidence scores before the competition. The age of the football players and handball players and their cognitive anxiety sub-dimension scores were weak, negatively and significantly related; accordingly, it was concluded that the cognitive anxiety level before the competition increased significantly as the age decreased in these athletes. On the other hand, there was a weak, negative and significant relationship between age and somatic anxiety scores in football players; It was concluded that as the age of the football players decreases, the pre-match somatic anxiety increases. In football players and handball players, there was a weak, negative and significant relationship between coach communication score and cognitive anxiety scores; and it was found that there was a weak, positive and significant relationship with self-confidence scores. However, it was determined that the communication level of the coach was not significantly related to the pre-competition somatic anxiety of these athletes.

In line with this result, it can be said that the relationship between the coach and the athletes within the team is very important for success in sports. The correct and understandable transfer of the tactics and methods used by the coaches in team sports to the athletes and the effective communication to be established with the athletes will positively affect the success of the team. In this direction, the use of effective communication can be one of the main factors that determine the anxiety level of the athlete in the communication environment. Therefore, it can be said that the type of communication used in sports has an impressive position in the relationship with the coach. It is thought that the moderate level of anxiety of the athletes is due to the high level of communication skills of the coaches. It has been determined that the anxiety levels of athletes who can develop healthy and open communication with their trainers decrease (Martin & Mack, 1996). Bayrak and Nacar (2015), in their study to determine the communication skill levels of football, volleyball, basketball and handball coaches, reported that volleyball coaches had higher communication skills, and basketball coaches were more unsuccessful than other branch coaches. Yilmaz et al., (2009), in a study comparing the communication skill levels of individual and team sports coaches, expressed that individual sports coaches are more successful than team sports coaches, and that volleyball coaches have higher communication skills than football and handball coaches in team sports. Based on these results, it is thought that pre-competition anxiety should also be examined in other team sports branches, since the present findings are limited to underwater hockey, football and handball branches.

It has been determined that the team athletes generally have a high level of cognitive anxiety, a moderate level of somatic anxiety and a high level of self-confidence. It has been observed that as the quality of communication with the coach increases in team athletes, their somatic anxiety tends to decrease, and this situation is experienced at the highest level in football players. In addition, it has been determined that male athletes adopt a more open communication style than women in communication with the coach.

Recommendations

In this study, only underwater hockey, football and handball athletes were examined according to pre-competition anxiety level, age, gender, sports background, position, branch, and coach communication level variables. In future studies, it is thought that branches such as volleyball and basketball and female football players should be examined as research subjects. At the same time, examining the anxiety level before the competition in terms of time and comparing the competition anxiety by measuring it both before the competition and during the competition will contribute to the literature.

Conflict of interest

The authors declare that they have no conflict of interest

Ethics Committee Approval

Ethical approval was obtained for the current study with the decision of Scientific Research and Publication Ethics Committee of Usak University Social Sciences Institute with the decision numbered 2023-04 dated 12.04.2023.

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The Examination on Psychometric Properties of the Turkish Version of Trait Emotional Intelligence Questionnaire-Adolescent Short Form (TEIQue-ASF)

Research Article

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ARTICLE INFO	ABSTRACT
<p><i>Article History:</i></p> <p>Received: 10.03.2023</p> <p>Available online: 15.08.2023</p>	<p>The purpose of this research is to analyze the Turkish psychometric characteristics of Trait Emotional Intelligence Questionnaire-Adolescent Short Form (TEIQue-ASF) developed on the basis of the trait emotional intelligence model. The sample of the study, which was conducted using the general screening model, included 1,224 students aged 11 to 17 (628 girls, 596 boys) in pre-adolescence and adolescence. The analysis revealed that the TEIQue-ASF provided significant evidence that it was compatible with the sample to which it was applied. As a result, it was concluded that the psychometric properties of the Turkish version of TEIQue-ASF were at an acceptable level.</p>

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Keywords:

Adolescent, emotional intelligence, trait emotional intelligence, TEIQue-ASF

Introduction

Emotion is a change that leads to psychological and physiological difference that occurs with the effect of the environment and internal processes of the individual. For this reason, individuals may give different emotional reactions to similar stimuli. The reason for this difference is one of the issues frequently discussed by scientists in the last century.

One of the concepts to explain the difference between individuals is "emotional intelligence". In the literature, there are three basic models that explain emotional intelligence (Kanesan & Fauzan, 2019). These models are (1) Mayer and Salovey's (1997) ability model, (2) Bar-On's (1997) and Goleman's (2001) mixed

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model, which deals with both competency (ability) and general disposition (trait), (3) Petrides and Furnham's (2001) trait-personality trait model (trait EI).

Models of Emotional Intelligence

The first theoretical explanation of emotional intelligence (EI) is the ability model. The ability model of Mayer and Salovey (1997) is based on the concept of "social intelligence" proposed by Thorndike (1920) as one of the aspects related to the measurement of intelligence. The model defines emotional intelligence as a structure with the dimensions of regulating emotions, analyzing and understanding emotional information, producing emotional information, emotions that facilitate thinking, and perceiving, evaluating and expressing emotions. Based on this model, Mayer, Salovey and Caruso developed the "Emotional Intelligence Test" (Mayer, Salovey, Caruso Emotional Intelligence Test (MSCEIT)) (Mayer et al., 2002), which evaluates EI as an ability.

The second of the basic models for explaining emotional intelligence is mixed models. Bar-On EI model, which is the leading model among mixed models, defines emotional intelligence as a structure with intrapersonal (personal) and interpersonal (social) dimensions (Bar-On, 1997). Based on this model, The Bar-On Emotional Quotient Inventory (EQ-i) (Bar-On, 1997), which measures five main dimensions as personal, stress management, interpersonal, general mood, and adaptation 15 sub-dimensions covering abilities related to these main dimensions has been developed. Another model is Goleman's (2001) mixed model, which includes self-awareness and self-management as internal (personal) aspects and social awareness and relationship management as interpersonal (social) aspects. Based on Goleman's conceptual model, the Emotional Competence Inventory (ECI) (Boyatzis & Sala, 2004) measuring four basic sections has been developed.

Another frequently discussed model for defining emotional intelligence in recent years is the trait EI model conceptualized by Petrides and Furnham (2001). This model suggests that emotional intelligence is a multidimensional structure that includes one's perception of abilities and behavioral tendencies, and is based on personality dimensions to measure emotional intelligence. TEIQue, which is based on the trait EI model developed by Petrides and Furnham (2003), evaluates emotional intelligence in 15 sub-dimensions structured under 4 dimensions (self-control, well-being, sociability, emotionality).

Trait Model of Emotional Intelligence

While defining emotional intelligence, Petrides and Furnham (2000; 2001) divided emotional intelligence into two by making a distinction in the literature on emotional intelligence on the grounds that uncertainties about whether EI is a trait or an ability cause difficulty in its measurement. Petrides and Furnham focused on two basic distinctions: emotional intelligence trait (self-efficacy trait), which is the model they developed, and emotional intelligence ability (cognitive-emotional ability) developed by Mayer and his colleagues (Mavroveli et al., 2007). Thus, they also presented a new model for the measurement of emotional intelligence.

The model defined as emotional intelligence trait explains emotional intelligence as a "trait-personal trait" by associating it with the basic dimensions of personality, independent of mental abilities (Petrides et al., 2007a). According to this model, emotional intelligence is related to the dimensions of personality and expresses individuals' emotional self-perceptions (Petrides et al., 2010). In addition, the model focuses on individual differences in how individuals perceive themselves about their emotional competencies.

The number of studies conducted to emphasize the distinctiveness and validity of the trait model, which is a new orientation in the research of emotional intelligence, has started to increase day by day in the literature (Abdolrezapour, 2013; Al-Dassean, 2023; Ferrando et al., 2011; Güler & Turan, 2022; Marwaha, 2019; McIlvain et al., 2015; Mavroveli et al., 2007; Siegling et al., 2015a; Wang & Liu, 2023). In some studies based on the trait

model of EI, emotional intelligence is associated with emotion regulation (Mikolajczak & Luminet, 2008), depression, life satisfaction (Petrides et al., 2007a), adolescents' attitudes towards cooperation in school life (Mavroveli et al., 2007), academic success in pre-adolescents (Siegling et al., 2015b), proficiency in peer relations, psychopathology and socio-emotional skills in pre-adolescents aged 11-13 (Frederickson et al., 2012), cooperation and leadership behavior (Petrides et al., 2006).

Trait Emotional Intelligence Questionnaire-Adolescent Short Form (TEIQue-ASF)

Versions of the TEIQue based on trait EI theory conceptualize emotional intelligence as a personality trait at the lower levels of personality hierarchies (Petrides et al., 2007b). The TEIQue-ASF is based on tested forms of the TEIQue in samples consisting of adults.

TEIQue adult long version consists of 153 items, 4 dimensions (well-being, emotionality, self-control, sociability), and 15 sub-dimensions. The dimensions are adaptation, self-confidence, perception of self and others' emotions, emotion expression, social awareness, stress management, emotion management, relationships, self-esteem, emotion regulation, self-motivation, happiness, empathy, impulse control, optimism (Petrides & Furnham, 2001). The Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF), which is also a short form for adults, consists of 4 dimensions and 15 sub-dimensions, similar to the long form. However, the short form was rearranged to 30 items in order to make a faster assessment of emotional intelligence traits. There are two items from each of the 15 areas of TEIQue. The scale is a Likert-like 7-point measuring tool (Cooper & Petrides, 2010).

TEIQue was revised to evaluate emotional intelligence traits in samples consisting of adolescents, and the Trait Emotional Intelligence Questionnaire-Adolescent Full Form (TEIQue-AFF) was developed. Likewise, it consists of 15 emotional intelligence traits (sub-dimensions) and 4 dimensions (Petrides, 2009). In the study of adolescent samples of scale from 12 to 17 years of age, the internal coefficient of consistency of the scale is low relative to the adult form. TEIQue-ASF is a simplified form of the TEIQue-AFF in terms of expression and syntax. Consisting of 30 items, this scale has 4 dimensions like other forms. The scale can be evaluated on the basis of total score or by taking the scores of the dimensions. However, the internal consistency coefficient is lower than the long form. Therefore, evaluating TEIQue-ASF by calculating the total score will give more reasonable results. It has been stated that the scale can be applied to children aged 13-17, and it has also been used successfully for children aged 11 years. TEIQue adolescent forms have been adapted to Dutch (Siegling et al., 2015b), Greek (Stamatopoulou et al., 2018), Italian (Andrei et al., 2014), and Persian (Ashouri et al., 2020) cultures and showed good psychometric properties.

In this study, it is aimed to present new findings about the measurement of emotional intelligence, which is an important topic of discussion, and to introduce a common measurement tool used to test hypotheses related to the trait emotional intelligence model to Turkish culture. For this purpose, the psychometric properties of the Turkish version of the TEIQue-ASF, a measurement tool based on Petrides and Furnham's (2001) trait EI model, were investigated.

Method

The aim of this research is to test the psychometric properties of the Turkish TEIQue-ASF culture.

Participants

The participants of the study consisted of pre-adolescent and adolescent individuals aged 11-17. A total of 1224 participants, 628 girls and 596 boys (51.3% girls, 48.7% boys), participated in the study. While determining the study group of the research, 7 schools were determined by random cluster sampling method in the central districts of a metropolitan city in the Central Anatolia region of Turkey, and then the study group of the research was formed by random sampling from each unit. The research shows that participants are age-

related distributions, 14.5% are 11 years old, 10.6% are 12 years old, 13.6% are 13 years old, 10.1% are 14 years old, 20.8% are 15 years old, 16% are 16 years old, and 14.3% are 17 years old.

Measurement Tools

Personal information form. This form was developed by the researchers to collect information about the participants' gender, age, grade level, and school.

Adolescents' Subjective Well-Being Scale. Developed by Eryılmaz (2009), the scale consists of four dimensions and 15 items. The lower dimensions of the scale are saturation of family relationships, saturation of life, positive emotions and relationships with important people. The variance described for these four dimensions is 61.64. The Cronbach alpha reliability of the scale is 0.87 and Spearman-Brown is 0. A correlation of 0.63 was found between Adolescents' Subjective Well-Being Scale and Satisfaction with Life Scale (Eryılmaz, 2009).

The Scale of Positive and Negative Experience. The Scale of Positive and Negative Experience was developed by Diener, Wirtz, Tov, Kim-Prieto, Choi, Oishi, and Biswas-Diener (2010) to analyse positive and negative emotions. The scale was adapted into Turkish by Telef (2013) and the scale consists of two factors. These factors are positive experience and negative experience factors. The fit index values obtained as a result of confirmatory factor analysis of the scale are RMSEA= 0.04, SRMR= 0.03, GFI= 0.96, NFI= 0.97, RFI= 0.96, CFI= 0.99 and IFI= 0.99. The Cronbach alpha reliability findings of the sub-factors were calculated as .84 for the positive experience dimension and .75 for the negative experience dimension.

Trait Emotional Intelligence Questionnaire-Adolescent Short Form (TEIQue-ASF). TEIQue-ASF, which was adapted into Turkish in the study, was developed by Petrides and Furnham in 2006. TEIQue-SF is another version of TEIQue developed by Petrides and Furnham (2001) based on their conceptualisation of EI as a "personality trait". TEIQue-ASF is a 30-item scale including 15 traits and four factors (self-control, emotionality, well-being, and sociability) with two items that can measure each sub-dimension (Petrides et al., 2006). TEIQue-ASF is a 7-point Likert-type measurement tool designed to measure total EI traits. Petrides et al. (2006) conducted a study on 160 children with a mean age of 10.8, and the internal consistency reliability of the scale was .84. The age range in which the scale can be applied is 12-17 years old. There is also evidence that it gives valid results when applied to 11-year-olds ("London Psychometric Laboratory").

Procedures

In the process of adapting TEIQue-ASF, firstly, the scale was translated into Turkish and expert opinion was obtained. Afterwards, the final form of the scale was created by conducting a pilot study. The data of the scale were collected from individuals studying in a metropolitan city center in the Central Anatolia region of Turkey. The data of the study were collected between February and May of the 2016-2017 academic year. Then, the test-retest reliability was made and the data were analyzed. The application took between 25 and 30 minutes on average for each student. Research data were obtained from students through Personal Information Form, Adolescent Subjective Well-Being Scale (Eryılmaz, 2009), The Scale of Positive and Negative Experience (Telef, 2013), and TEIQue-ASF. Paper-/pencil-based questionnaires were distributed to students in their classroom. The anonymity of the study was stressed in advance. Participants were also aware that their participation was completely voluntary, and that they could withdraw from the study at any time.

Translation and pilot study

Firstly, the permission was obtained from the responsible author of the scale for the translation and adaptation of the TEIQue-ASF into Turkish. The translation of the TEIQue-ASF was carried out by five experts, including two English translators, three lecturers who are graduates of English Language and Literature. The scope and suitability of the instructions in the Turkish version of TEIQue-ASF were evaluated by three faculty

members who are experts in the field of guidance and psychological counseling. The Turkish scale was finalized in line with the feedback from the experts. The Turkish scale was finalized in line with the feedback from the experts. The scale pilot was conducted by applying it to 15 students between the ages of 11 and 17. After it was decided that the translation of the scale was suitable for the comprehension levels of secondary and high school students, the scale was made ready for validity and reliability studies.

Analysis of Data

During the data collection process, data was gathered from 1,289 students. From the collected data, it was determined that 65 students filled out the scale forms incompletely or incorrectly. Data from these students were deleted from the dataset and data from 1224 students were analysed. Firstly, the percentage and frequency values that define the sample of the study were calculated. The data obtained through Personal Information Form, Adolescent Subjective Well-Being Scale (Eryılmaz, 2009), the Scale of Positive Negative Experience (Telef, 2013) and TEIQue-ASF were analysed using SPSS 18.0 and AMOS 19.0 programmes.

Findings

Table 1. Descriptive statistics of the TEIQue-ASF (n=1224)

	Mean	Ss	Range	Min.	Max.	Skewness	Kurtosis
Well Being	29.94	8.08	36.00	6.00	42.00	-.559	-.220
Self-control	12.93	4.46	18.00	3.00	21.00	-.090	-.571
Sociability	14.81	4.28	18.00	3.00	21.00	-.349	-.592
Emotionality	14.42	3.90	18.00	3.00	21.00	-.372	-.216
Emotional Intelligence Total Score	72.11	14.69	85.00	20.00	105.00	-.196	-.278

When Table 1 was analysed, it was found that the skewness and kurtosis coefficients of the TEIQue-ASF were around 1.00 or less than this value. The fact that the skewness coefficient is between +1 and -1 in data analysis means that the test score distributions do not deviate excessively from normal (Büyüköztürk, 2005).

Findings Related to Reliability Analyses of TEIQue-ASF

The reliability of the internal coherence and the test-retest reliability coefficients were calculated to determine the reliability of TEIQue-ASF. The reliability coefficient, which is considered to be minimally important for a test, is desired to have a value of .70 and above (Salvia et al., 2012). It is stated that this coefficient of .60 and above for a psychological test is generally considered sufficient for the reliability of test scores (Tavşancıl, 2002).

Internal Consistency Reliability

The internal consistency reliability, of the TEIQue-ASF was calculated with Cronbach's alpha coefficient. These values were found to be .77 for the Well-being factor, .70 for Self-control, .69 for Sociability, .65 for Emotionality and .78 for the whole scale. When the item-total correlation coefficients for the factors were examined, it was observed that they ranged between .20 and .59, and the item-remainder correlation coefficients ranged between .25 and .63. In the interpretation of the item-total correlations, considering that the items with a correlation of .20 and higher distinguish individuals well in terms of the measured trait (Büyüköztürk, 2012), it is observed that the item-total correlations are sufficient. In addition, in the item-total correlation analyses, it is seen that the correlations of all items are significant at $p < .001$ level. All these results reveal that all items are in the same structure.

Test-Retest Reliability

To determine the stability of the scale over time, the scale was applied to a group of 207 persons twice with three-week intervals. Regarding the test-retest correlation, the correlation between the two measurements was calculated using Pearson Product Moment Correlation technique. The Pearson Product Moment correlation coefficients calculated between these two applications ranged between .61 and .65 for the sub-dimensions. The test-retest reliability coefficient for the whole test was found to be .67 ($p < 0.05$). It was determined that there was a significant positive correlation between the scores obtained in the first and last administration of the TEIQue-ASF ($p < 0.05$). The obtained correlation coefficient values meet the "intermittent repetition of the test" reliability criterion (Pallant, 2005) of the TEIQue-ASF.

Findings Related to the Validity Study of the TEIQue-ASF

In determining the validity of the TEIQue-ASF, the data obtained were tested according to criterion-dependent validity and construct validity criteria.

Criterion Dependent Validity

The relationships between the Adolescent Subjective Well-Being Scale (Eryılmaz, 2009) and the The Scale of Positive and Negative Experience (Telef, 2013) were tested to determine the criterion-dependent validity features of TEIQue-ASF. Low and moderate positive and significant relationships were found between TEIQue-ASF and Adolescent Subjective Well-Being (well-being $r = .58$; self-control $r = .32$; sociability $r = .22$, emotionality $r = .34$; total $r = .42$) and The Scale of Positive and Negative Experience scores (well-being $r = .60$; self-control $r = .33$; sociability $r = .23$, emotionality $r = .27$; total $r = .40$).

Construct Validity

To test the conceptual validity of this study, an exploratory factor analysis has been conducted to describe the characteristics of the factorial structure of TEIQue-ASF. Confirmatory factor analysis findings were used to understand whether the structure found was suitable for the sample data.

Exploratory Factor Analysis

Exploratory factor analysis is an analysis method that aims to explain the existing structure (Hayton et al., 2004). Therefore, using only confirmatory factor analysis in scale adaptation studies may cause some statistical problems. Due to cultural differences, it is appropriate to first perform exploratory factor analysis in scale translation. Because a data set can fit more than one model. In order to realize the possible error caused by this situation, first of all, exploratory factor analysis should be done in adaptation studies (Orçan, 2018). The original adult form of the scale adapted in the research shows a structure with 15 dimensions and four factors. However, in the validity and reliability study of the adult form on the adolescent sample, similar results were not obtained with the adult form (Amrhein et al., 2018). For this reason, exploratory factor analysis was needed. In the exploratory factor analysis performed to examine the construct validity of TEIQue-ASF, the correlation matrix between all items was examined and it was determined whether there were significant correlations. As a result of the analysis, it was seen that the scale items were suitable for factor analysis and there were significant correlations between the items. In the exploratory factor analysis conducted to examine the construct validity of the TEIQue-ASF, the Kaiser-Meyer-Olkin (KMO) and Barlett-Sphericity tests were performed for sample suitability. Kaiser-Meyer-Olkin (KMO) test determines whether the partial correlations are small and whether the distribution is sufficient for factor analysis. In this study, Kaiser-Meyer-Olkin (KMO) sample suitability coefficient was .85 and Kaiser-Meyer-Olkin (KMO) value was found to be very good. The significance level of Barlett-Sphericity test ($\chi^2 = 3337.7$, $df = 105$) was $p < .01$. The significant Bartlett values indicate that the data has a multivariate normal distribution.

In exploratory factor analysis, principal components factor extraction method was chosen as the factor extraction method, no rotation method was chosen and Listwise elimination method was preferred to eliminate missing data. As a result of the analysis, 4 components with an eigenvalue of 1.00 and above were found and these components explained 51.174% of the total variance. When the line graph of the eigenvalues of the components was analysed, it was seen that the break points decreased considerably after the 4th component. In this respect, it was decided to test the theoretically proposed 4-factor solution. When the rotated component matrix was first analysed, 15 items loaded on more than one factor were identified and the same analyses were repeated by eliminating these items. While performing the elimination process, the criteria are that an item has a factor load of “.40” or more in the factor it is included in, and that the difference between the load values of the factor in which the items are included and the load values of the other factors is at least “.10” and higher (Büyüköztürk, 2012) taken into account.

In factor analysis, variable loads are maximised on the relevant factor and minimised on the irrelevant factor after rotation. For this purpose, factor analysis was performed again by using principal components factor extraction and Varimax rotation method. The simplest structure was achieved after five rotations. The factors and factor loads of the items are shown in Table 2. Accordingly, the factors explained 26.01%, 9.18%, 8.54% and 7.44% of the total variance and 51.174% in total, respectively. Kline (1994) emphasises that this ratio being above 40% in multidimensional scales is an important indicator for construct validity.

Tablo 2. The factor structure and factor loads of TEIQue-ASF

Items	Factor Co-variance	Factors			
		Well being	Self-control	Sociability	Emotionality
I'm happy with my life.	.679	.802			
I feel good about myself.	.657	.772			
I believe that things will work out fine in my life.	.530	.693			
My life is not enjoyable.	.508	.636			
Sometimes, I think my whole life is going to be miserable.	.552	.554			
I'm comfortable with the way I look.	.289	.434			
I can control my anger when I want to.	.544		.729		
I try to control my thoughts and not worry too much about things.	.502		.667		
I'm able to deal with stress.	.469		.632		
I don't know how to show the people close to me that I care about them.	.480			.688	
I find it hard to stand up for my rights.	.502			.677	
I find it hard to cope when things change in my life.	.509			.626	
Sometimes, I wish I had a better relationship with my parents.	.542				.657
It's easy for me to talk about my feelings to other people.	.468				.646
I can make other people feel better when I want to.	.445				.641

Subtest Correlations

The correlation of the subtest scores of the TEIQue-ASF was tested with Pearson Correlation Coefficient.

Table 3. Means and standard deviations of the factors of the TEIQue-ASF and correlation values between factors

Factor	Mean	ss	Correlation Coefficients			
			F1	F2	F3	F4
F1. Well-being	29.21	7.89	-	.53**	.32**	.36**
F2. Self-control	12.93	4.46		-	.30**	.31**
F3. Sociability	14.81	4.28			-	.33**
F4. Emotionality	14.42	3.90				-

There is a moderate positive relationship between the sub-dimensions. This finding shows that there is no multicollinearity among the sub-dimensions.

Confirmatory Factor Analysis

In order to understand whether the 4-factor structure resulting from the Exploratory Factor Analysis fits well with the sample data, DFA was performed using the AMOS 19.0 package program. The relevant Path diagram is given in Figure 1. Chi-square value was obtained for the structure of the four-factor scale consisting of 15 items ($df=84$, $p<.001$). According to the results obtained, the Chi-square value is expected to be insignificant, but this value is very sensitive to the sample size and can often be significant in large sample groups. In this respect, alternatively, a calculation obtained by dividing the Chi-square ratio by the degrees of freedom is proposed (Byrne, 1984; Kline, 1994). In the study, this ratio was found to be 4,379. A ratio of two or less indicates that the model is a good model, and a value of five or less indicates that the model has an acceptable goodness of fit (Şimşek, 2007). In this respect, the value obtained provides important evidence that the model is an acceptable model.

In addition, GFI, AGFI, CFI, RMSEA and SRMR fit indices were also calculated. Although the acceptability levels of the specified fit indices vary according to different authors, in general, GFI, AGFI and CFI being .90 and above, RMSEA being below .08 and SRMR being below .10 indicate an acceptable goodness of fit (Kline, 1994; Şimşek, 2007). The values obtained in the study were calculated as GFI=.961, AGFI=.944, CFI=.913, RMSEA=.053 and SRMR=.0426. When the correction indices suggested by the AMOS program were examined, the correlation between errors was allowed and the model was reanalyzed by taking expert opinion since the suggested error correlations were included in the same latent variables. As a result of these corrections, GFI=.95, AGFI=.964, CFI=.921, RMSEA=.051 and SRMR=.0408. These results provide important evidence that the 4-factor TEIQue-ASF, consisting of 15 items, showed acceptable fit to the sample to which it was applied. As seen in Figure 1, the factor loads for the 4-factor model of the TEIQue-ASF ranged between .30 and .77. These values show that the items have high and medium loads (Büyüköztürk, 2002) and as a result, the factor loads of the items are at a sufficient level.

Table 4. Fit index values of the TEIQue-ASF

Fit Indices	TEIQue-ASF		Limit Values
	Turkish Form	Original Test	
χ^2/sd	4.16	-	$2 \leq \chi^2/sd \leq 5$
RMSEA	.05	.08	≤ 0.08
SRMR	.04	.06	≤ 0.05
GFI	.95	.94	≥ 0.95
AGFI	.96	-	≥ 0.90
CFI	.92	.94	≥ 0.97
TLI	.89	-	≥ 0.90
NFI	.90	-	≥ 0.95

(Anderson & Gerbing, 1984; Cole, 1987; Hair et al., 1998; Jöreskog & Sörbom, 1996; Marsh et al., 1988; Raykov & Marcoulides, 2006; Schermelleh-Engel et al., 2003)

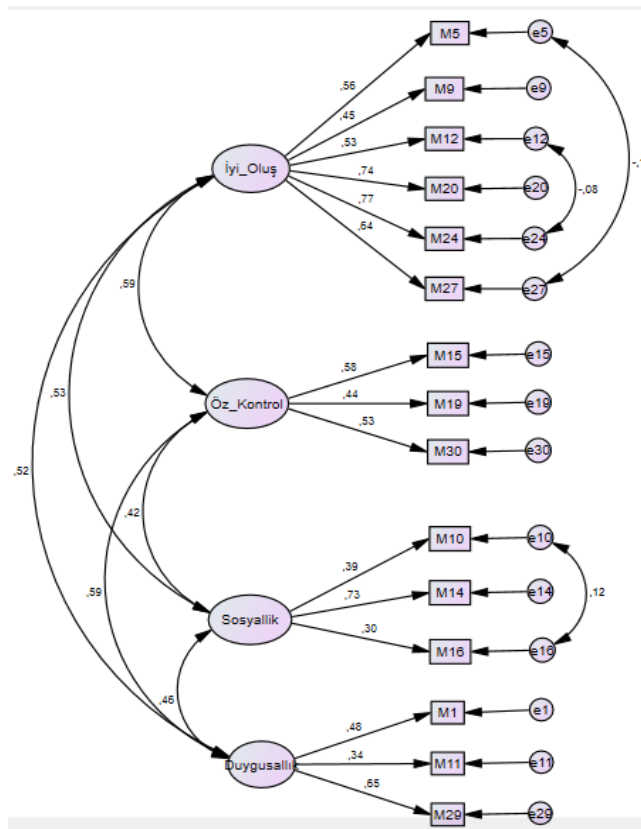


Figure 1. Path diagram and factor loadings of the TEIQue-ASF

Conclusion, Discussion and Recommendations

In this study, it was aimed to determine the psychometric properties of the Turkish version of TEIQue-ASF, which was developed based on the feature model of EI. As a result of the analyses conducted for this purpose, the findings regarding the construct validity of the Turkish version of TEIQue-ASF confirmed that it has a four sub-dimensional structure named as "well-being", "self-control", "emotionality" and "sociability". The four-dimensional structure obtained for the Turkish version of TEIQue-ASF is similar to the versions of the scale in other cultures (Ashouri et al., 2020; Petrides, 2009; Siegling et al., 2015b).

The Cronbach's alpha coefficients of the Turkish version of TEIQue-ASF were .77 for the "well-being" factor, .70 for the "self-control", .65 for the "emotionality", .69 for the "sociability" and .78 for the whole scale. These values are close to the values obtained for other versions of the scale. According to the findings of the study, the reliability of TEIQue-ASF is similar to the reliability findings of the scale obtained in different studies (Ashouri et al., 2020; Frederickson et al., 2012; Gugliandolo et al., 2015; Mavroveli et al., 2007; Stamatopoulou et al., 2018). In addition, the results of the retest showed that the scale is a reliable measurement tool that can be used to evaluate emotional intelligence in samples composed of adolescents in the Turkish culture.

In the study, it was determined that TEIQue-ASF was correlated with the Adolescent Subjective Well-Being Scale and the Scale of Positive and Negative Experience in the findings regarding the criterion-dependent validity of the scale. The relationships between emotional intelligence and subjective well-being are in line with the findings of previous studies (Llamas-Díaz et al., 2022; Sánchez-Álvarez et al., 2016). These results provide further evidence that TEIQue-ASF is valid.

According to the research findings, the Turkish version of TEIQue-ASF is a valid and reliable measurement tool that can be used to determine the perception levels of adolescents regarding their emotional competence. Individuals with high scores on the total scale have high emotional competence in relation to the dimensions of personality, while individuals with low scores have low emotional competence.

Based on the results obtained from the study, the TEIQue-AFF can be adapted to Turkish and its psychometric properties can be compared with TEIQue-ASF in future studies. Because, while higher values were not obtained for the sub-factors in the short form of the scale, in some studies, it was observed that the scores of these factors gave significantly more positive results in the long form. It is possible to mention variables such as social skills, peer relations, academic achievement, aggression, life satisfaction, personality traits, narcissistic personality traits that may be related to TEIQue-ASF. The relationship between such variables and TEIQue-ASF can be investigated. Emotional intelligence traits of adolescents can be analysed according to their personality traits.

Declaration of Conflicting Interests

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Digital Profiles of Classroom Teachers Working in Private School*

Research Article

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ABSTRACT

In the study, it was aimed to determine the digital profiles of classroom teachers working in private primary schools according to their digital culture perceptions. For this purpose, the effects of gender, age, professional seniority, and educational status variables on the digital profiles of classroom teachers were examined. In this study, a general survey model was employed as the quantitative research approach. The population of research includes 112 classroom teachers who work at private schools affiliated with the Ministry of Education in Battalgazi and Yeşilyurt district of Malatya during the 2020-2021 academic year. No sample was taken because the study's goal was to reach the entire population. Data were collected from 112 classroom teachers who participated in the study voluntarily. "Digital Native, Digital Immigrant and Digital Hybrid Teacher Scale" were used as data collection tools. The single sample chi-square test and the chi-square test for two variables were both employed in the data analysis. According to the study's findings, the majority of classroom teachers use digital resources and environments, and they also exhibit a hybrid digital feature that cannot depart from conventional teaching techniques.

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Keywords:

Digital culture, digital native, digital immigrant, digital hybrid, classroom teacher, private primary school

Introduction

There have been changes in social life, health, politics, the economy, and education because of the rapid growth of information and communication technology and the ease with which people can access digital technologies. Communication methods and our perception of time and space have evolved as a result of the innovations brought by technology in information societies. In this context, all of the material and spiritual

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elements that make up the culture have changed over time (Önder, 2020, p. 112). Our daily lives become digital with the technology which starts covering all fields of life (Tuna Uysal, 2020, p. 44). In the new media spaces produced by internet technology while individuals digitize, culture has also started to digitize (Güzel, 2016, p. 86), a common culture created by humanity centred on technology (İnci et al., 2017, p. 495).

Digital culture is the sum of the material and ethical ideals created by the new way of life and lifestyle that has emerged as a result of the accelerated information communication with the Internet, computers and smartphones (Aslyüksek, 2015, p. 238). When the term "digital culture" is examined in the context of "digital," "culture," and "digital transformation," it is understood to relate to a way of life demanded by the age in which we live and the habits that develop along with it (Özgiden, 2013, p. 9). To define the current era, many researchers have used various concepts such as "cyberculture", "information culture", "internet age", and "digital age (Crawford, 1996, pp. 43-47; Graham & Metaxas, 2003, pp. 71-73; Levy, 2003, p. 9; Ljosa, 1998, pp. 1-2). The digital culture that emerged with the digital age has created a generation that knows the language of digital tools well and can do many things with these tools at the same time (Menşan, 2019, p. 5), and the gap between those trying to keep up with the digital world and the generation born and raised in the digital world has started to increase.

The young population intensively uses mobile technologies and social networks which are the first step of communication and contact. It is remarkable that age is an important variable in line with the meanings attributed to digital (Çavuş & Doğan, 2008, p. 79-81; Şad & Donmuş, 2017, p. 11-12). Considering the general characteristics of the period, the researchers defined these generations, which were formed by peer groups who were in the same age group and had the same experience, with different terms. Generations X, Y, Z (Pilcher, 1994, p. 481), smart kids (Fiske et al., 1992), digital natives (Prensky, 2001a, pp. 1-3), net generation (Oblinger & Obliger, 2005, pp. 1-2), millennium learners (Pedró, 2007, p. 244), born-digital (Palfrey & Grasser, 2017, pp. 239-247), alpha generation (McCrindle, 2021), beta generation (İnce, 2018) these terms, which have become established in the literature, all refer to the same generation, but the term "digital natives" is the most comprehensive. In the context of determining the digital profile of age and technology interaction, Prensky (2001a) divided those born after 1980 into two groups as digital natives and those born before 1980 as digital immigrants and introduced two concepts to the literature. Kakırman Yıldız (2012, pp. 821-823) who argues that there is a transition process between digital natives and digital immigrants, used the concept of digital hybrid, Palfrey & Grasser (2017, p. 3) used the concept of the digital nomad, and Toledo (2007, p. 85) brought the concept of digital tourist to the literature.

The generation known as "digital natives," which is described as "those who do not know a world without computers, mobile phones, and the internet" (Türkolu, 2018, p. 127), is that which was born into a digital culture, grew up with digital technologies, and adopted the digital language as their native language. Computer games, e-mail, mobile devices, and instant messaging software are all fundamental components of the lives of digital natives who consider the internet and technology as part of their everyday life (Prensky, 2001a, p. 2). Digital natives, who can simply access any information online when they require it on any topic and are prone to share the information they reach with people they do not know read blogs instead of newspapers, conduct online interviews before scheduling in-person meetings, listen to their music online instead of buying it from music stores, and use the internet in every aspect of their daily lives, prefer to search in search engines instead of going to libraries for research, connect with friends and are incredibly creative (Palfrey & Grasser, 2017, p. 1). The commitment to the digital world comes naturally to digital natives who prefer graphics over words when getting information and the discovery method of learning. Collaborative learning, critical thinking, and online learning abilities are all improved with the excellent use of technology (Günüç, 2016, p. 7).

The generation that was born prior to 1980 is referred to as immigrants in the digital world since they later encountered a digital environment to which they were not accustomed and tried to keep up with it when they were in their middle years (Prensky, 2001a, p. 3; Turhan, 2016, p. 107). Digital immigrants use the technology and opportunities along with it if they are required in their struggle to adapt to the digital world. Digital immigrants have not adopted digital technology as a lifestyle contrary to digital natives (Durmuş, 2020, p. 32). According to Özoğlu (2019, p. 73), those who attempt to learn the language of digital technologies but are insufficient at using them are similar to those who attempt to acquire a new language. Even if they appear to be intertwined with technology, digital immigrants struggle to disrupt or alter the traditional framework they are accustomed to, and their accents are noticeable (Görgün Baran et al. 2017, p. 7). For digital immigrants, technology is a tool that makes life easier, is helpful for learning new things, is creative, and is cosy (Yıldırım Becerikli, 2013, pp. 20-21; Eşgi, 2013, p. 184).

Prensky (2001a, p. 1) defined a sharp distinction between a digital native and a digital immigrant based on age, and for a variety of reasons, some researchers have attempted to soften this distinction. The term "Digital Settlers/Nomads," which refers to people who are older than digital immigrants, was first used in literature by Palfrey & Grasser (2017, p. 3). When compared to digital immigrants and natives, digital nomads are older and more distant from the digital world (Kurt et al., 2013, pp. 6-7). Individuals born between 1970 and 1979 are described as digital immigrants, according to Kakırman Yıldız (2012, pp. 821-822), but this age group uses digital technologies effectively, and even the habit of paper and pencil has been replaced by tablets and computers. She claimed that people born after 1970 also have a strong command of technology, can fulfil their informational demands online like digital natives, and can read and write messages on their phone while listening to music but cannot give up printed sources while engaging in these activities, so in this context, those who were born in between 1970-1999 were identified as "Digital Hybrids" by her. The term "digital immigrants" refers to people who resist change and are technologically illiterate. Digital natives are people who are accustomed to the technological environment in which they were raised and cannot imagine a world without it, whereas digital hybrids are unable to break free of their old routines while embracing change.

Our daily lives are shaped by a cultural environment where distances are reduced by technology, several transactions may be completed simultaneously, and online spaces are commonly used. Accordingly, the society of the twenty-first century should possess the knowledge and abilities to both create and apply technology (Şenel & Gençolu, 2003, p. 47). Because information technologies are used in more complicated ways than conventional methods, there is an increase in both the usage areas and the complexity of use (Akpnar, 2004, p. 124). It is essential for teachers to use information technologies efficiently and meaningfully in the classroom, to use digital devices frequently in both their professional and private lives, and to be content producers themselves. Today, it is seen that the biggest factor in student success is the teacher factor, and the other important factor is technology. However, digital immigrant teachers need to be competent and continue to improve themselves in order to meet the demands and expectations of their students born into the digital age (Arabacı & Polat, 2013, pp. 12-16).

When literature is examined, it is seen that there are studies which are aimed at determining digital literacy, digital competence and digital profiles of teachers and teacher candidates (Aksakal et al., 2021; Aksoy et al., 2021; Alarcón et al, 2020; Çukurbaşı & Kıyıcı, 2018; Esteve-Mon et al., 2020; Geçgel et al., 2020; Göksu & Koçak, 2020; Gündüz, 2021; Händel et al., 2020; Karaoğlan Yılmaz & Binay Eyuboğlu, 2018; Kormos, 2018; Kurniawati et al., 2018; Kuru, 2019; Li et al., 2019; Pischetola, 2020; Quaicoe & Pata, 2018; Singh, 2021; Yalçın, 2017; Wilson et al., 2020; Yazıcıoğlu et al., 2020). The results of some of the researches that served as a source for the research were analysed. In Aksoy, Karabay, and Aksoy's (2021, pp. 859-894) study, the digital literacy skills of classroom teachers working in public primary schools affiliated to the Ministry of National Education in terms of various variables (gender, age, education level, seniority year, internet usage time, digital tool

usage time) were discussed. In the study, while there was no significant difference in the digital literacy levels of classroom teachers according to gender, there was a significant difference in favour of teachers with less age and seniority in age and professional seniority variables. Geçgel, Kana, and Eren (2020, pp. 886-904) discussed the digital competences of teachers. According to the findings of the study, it was concluded that teachers who use interactive whiteboards are not competent in this regard, and that schools and internet infrastructure are insufficient in creating technological space. In Menşan's (2019, p. 38) study, the digital profiles of classroom teachers working in public schools affiliated to the Ministry of National Education were examined in terms of various variables (gender, age, professional seniority, education level). Teachers over 40 years of age (65.8%) and with more than 21 years of professional seniority (49.2%) were predominantly digital hybrids (73.4%). Based on these studies, it is seen that the sample of the studies consists of primary schools affiliated to the Ministry of National Education. Determining how classroom teachers perceive digital culture is important in terms of revealing how they respond to the skills and competences of digital natives. In this context, determining the development areas that classroom teachers should focus on will depend on how much of a digital divide there is between 21st century students and the teachers of students who are digital natives.

It is seen that there are a limited number of studies in the literature in which the digital profiles of classroom teachers are determined and in these studies, the digital profiles of classroom teachers working in public schools are determined and analysed. Private schools have become an integral part of the education system. Determining the digital profiles of classroom teachers (digital native, digital immigrant, digital hybrid) is very important in terms of better communicating with students who are called digital natives and addressing them better. It is also very important for teachers to know which digital profile they have in order to improve themselves, adapt to the digital world and meet on a common ground with digital natives. In this context, this study aims to contribute to filling the gap in the literature by determining the digital profiles of classroom teachers working in private schools. The answers to the following sub-problems based on this main purpose were sought:

1. What is the distribution of digital profiles of primary school teachers?
2. Do the digital profiles of classroom teachers differ significantly according to:
 - a. Gender
 - b. age,
 - c. professional seniority,
 - d. education status?

Methodology

Research Model

In this study, the quantitative research method is used, and the general survey model is used as a research design. The survey model is a type of research where participants' opinions on a topic and personal characteristics like abilities and attitudes are determined. Usually, a larger sample is used (Büyüköztürk et al., 2022). According to Karasar (2009), the general survey model refers to the arrangements made on the entire population or the sample that will be taken from it in order to form an overall view of the population in a population made up of more than one element.

Population and Samples

The population of this research consists of 112 classroom teachers working in private primary schools affiliated with the Ministry of National Education in the Battalgazi and Yeşilyurt districts of Malatya in the

2020-2021 academic year. Instead of using the method of sampling, it was intended to reach the entire population. 112 classroom teachers voluntarily took part in the study. The frequency and percentage distribution of the classroom teachers participating in the research according to their personal characteristics are given in Table 1.

Table 1. Demographic characteristics of classroom teachers participating in the research

Variables		f	%
Gender	Female	68	60.7
	Male	44	39.3
	Total	112	100
Age	20-40	56	50
	41 and older	56	50
	Total	112	100
Professional Seniority	0-20	63	56.2
	21 and above	49	43.8
	Total	112	100
State of Education	Associate Degree	27	24.1
	Undergraduate and Postgraduate	85	75.9
	Total	112	100

As seen in Table 1, 60.7% of the 112 classroom teachers participating in the research are female and 39.3% are male teachers. The ratio of teachers in the 20-40 age group is 50%, while the ratio of teachers in the age group of 41 and above is 50%. Considering the years of professional seniority of the classroom teachers, the rate of teachers with professional seniority in the range of 0-20 years is 56.2%, and the rate of teachers with professional seniority of 21 and above is 43.8%. 24.1% of the teachers are at associate degrees, and 75.9% of them are at undergraduate and postgraduate levels.

Data Collection Tool

To determine the digital profiles of classroom teachers, the "Digital Native, Digital Immigrant, and Digital Hybrid Teacher Scale" developed by (Şad & Donmuş, 2017) was used. The participant in this scale was asked to check the relevant box on a 7-point rating scale that was situated between two opposite poles. The three sub-dimensions of the 17-item scale include communication with parents and students, personal and professional development, and the arrangement of learning environments. The sub-dimension of communication with parents and students is related to the type of communication they prefer in the process of communicating with students and parents inside and outside the classroom, while the sub-dimension of the arrangement of learning environments is related to whether teachers use traditional methods or digital tools more in the teaching process and in preparing learning environments. It was discussed if the teachers get help from printed materials or digital environments in the sub-dimension for personal and professional development.

The scale's Cronbach Alpha coefficients are .76, .66, .62 for each of the sub-dimensions, and .80 overall. There are no negative items on the scale, and items 7, 9, 10, 11, 13, 14 and 15 measure how the learning environment is organized; items 4, 5, 12, 16 and 17 measure contact with parents and students; items 1, 2, 3, and 6 measure preferences for personal and professional growth. The questions collected under the three dimensions explained 43.5% of the overall variance, according to analyses conducted to determine the validity of the scale. Validity values from confirmatory factor analysis were determined as follows: RMSEA=.06, GFI=.92, SRMR=.07, NFI=.91, NNFI=.92, AGFI=.90, CFI=.94, IFI=.94, ve $\chi^2/sd=3,4$ (Şad & Donmuş, 2017). This study was approved by the Inonu University Ethics Committee with its decision dated 14.01.2021 and numbered 2021/2-4.

Data Collection

Necessary permissions were obtained from Malatya Provincial Directorate of National Education and İnönü University Social and Human Sciences Scientific Research and Ethics Committee. The "Digital Native, Digital Immigrant, and Digital Hybrid Teacher" scale was applied to 112 primary school teachers employed in private primary schools in the Malatya province's Battalgazi and Yeşilyurt districts in order to gather data in the 2020–2021 academic year. The teachers received the appropriate explanations before to the application so that they would understand the scale and be prepared for any issues that might arise. Researchers took part in the process and spent time in the application environments in order to thoroughly comprehend the questions.

Data Analysis

The SPSS program was used to convert the data from the "Digital Native, Digital Immigrant, and Digital Hybrid Teacher Scale" to digital media. The personal characteristics of the participants were identified using the personal information form, and the frequency and percentage distributions of these data were identified as well. Chi-square analysis was conducted to determine whether there is a significant difference according to primary school teachers' digital profiles (digital immigrant, digital native, digital hybrid) and their relationships with gender, age, professional seniority, and educational status.

Cases where the predicted value of fewer than five pores exceeded 20% in the study's analysis of two variables using the chi-square test. Combining was carried out to resolve this issue and increase the amount of observations (Büyüköztürk, 2017, pp. 158-159). The age variable was created in four categories: 20–30, 31–40, 41–50, and 51 and above, during the data collection phase. However, it was found that more than 20% of the total number of pores had predicted values below five. By re-coding and combining the age groups 20-30 and 31-40 with 41-50 and 51 and above, the age variable was determined as 20-40 and 41 and above. As a result, the percentage of pores with an expected value of less than five was below 20%.

In the study, the seniority variable was divided into three groups throughout the data collection phase: 0–10 years, 11–20 years, and 21 years or above. However, it was observed that the pores with an expected value of less than five exceeded 20% of the total number of pores. The seniority ranges of 0–10 years and 11–20 years were therefore combined, the seniority variable was classed as 0–20 years and 21 years and above, and the proportion of pores with an expected value of less than five was decreased to under 20%.

The variable of education status was formed from four categories as an associate degree, undergraduate, graduate and doctorate at the stage of data collection. In the first analysis, it was observed that the number of pores with the expected value of less than five exceeded 20%. Due to this, the categories of postgraduate and doctorate degrees were re-coded and moved to the undergraduate category, and the education status variable was classified as an associate degree, undergraduate degree, and postgraduate degree. As a result, the anticipated percentage of pores with less than five was under 20%. Table 2 provides the score ranges that were used to interpret the results of the "Digital Native, Digital Immigrant, and Digital Hybrid Teacher Scale."

Table 2. Intervals used in evaluation of data collection tool

Score Interval	Evaluation
-3 and -1	Dijital Immigrant
-0,99 and +0,99	Dijital Hybrid
+1 and +3	Dijital Native

In Table 2, the score ranges used in the interpretation of the scores of the "Digital Native, Digital Immigrant and Digital Hybrid Teacher Scale" are given. A score between -3 and -1 denotes Digital Immigrants,

-0.09 and +0.09 points indicate Digital Hybrids, and +1 and +3 points indicate Digital Natives. The two opposite poles of digital immigration and digital nativeness were established as -3 and +3, respectively, and digital hybridity was established as the midpoint (0) between them due to the fact that the scale's items were developed based on the bipolarity feature of the Semantic Differences scale. The overall score was divided by the number of elements to establish the scoring ranges. The data were analyzed using frequency, percentage, single sample chi-square test, and chi-square testing for two variables.

Findings

In this part of the study, the findings related to the data collected in accordance with the general purpose and sub-purposes are given.

Findings Regarding the Distribution of Digital Profiles of Classroom Teachers

The scores of each participant from the scale were calculated, and the digital profiles of classroom teachers were created within the parameters of the study based on the score ranges in Table 2.

Table 3. Digital profile distribution of classroom teachers

Dijital Profile	f	%
Digital Immigrant	31	27.7
Digital Hybrid	68	60.7
Digital Native	13	11.6
Total	112	100

As seen in Table 3, 31 (27.7%) of the 112 classroom teachers participating in the research are digital immigrants, 68 (60.7%) are digital hybrids and 13 (11.6%) are digital natives. It may be concluded that when classroom teachers are distributed based on their digital profiles, they exhibit mostly the features of digital hybrids.

The single-sample chi-square test was used to assess the digital profile distributions of classroom teachers, and the results are shown in Table 4.

Table 4. Single sample chi-square test results among the sub-categories of digital profile

Digital Profile	Observed Value	Expected Value	Gap
Digital Immigrant	31	37.3	-6.3
Digital Hybrid	68	37.3	30.7
Digital Native	13	37.3	-24.3
Total	112		

$\chi^2 = 42.12$; $sd = 2$; $p = 0.000$

Table 4 shows that 112 classroom teachers were observed, of whom 31 are digital immigrants, 68 are digital hybrids, and 13 are digital natives. The least observed profile is digital native, and the most observed profile is a digital hybrid. It can be shown that there is a considerable and in favour of digital hybrids distribution among the studied digital profile's subcategories ($\chi^2 = 42.12$; $p < 0.05$). The possibility that the χ^2 statistic would be significant was raised by the large difference between the observed and expected values in the digital hybrid. It is seen that primary school teachers show more digital hybrid features than expected (60.7%).

Findings Related to Gender Variable of Digital Profiles of Classroom Teachers

Distribution of digital profiles of classroom teachers according to gender variable was analyzed with a chi-square (χ^2) test for two variables, and the findings are given in Table 5.

Table 5. Chi-Square test results of classroom teachers' digital profiles by gender variable

Gender	Digital Profile			Total	
	Digital Immigrant (DI)	Digital Hybrid (DH)	Digital Native (DN)		
Female	n	19	46	3	68
	%	27.9	67.6	4.4	100
Male	n	12	22	10	44
	%	27.3	50.0	22.7	100
Total	n	31	68	13	112
	%	27.7	60.7	11.6	100

$\chi^2 = 9.095$; $sd = 2$; $p = 0.011$

According to Table 5, digital profiles of classroom teachers show a significant distribution by gender ($\chi^2 = 9.095$; $p < 0.05$). The digital immigration rate of female teachers is 27.9%, the digital hybrid rate is 67.6% and the digital native rate is 4.4%. The rate of digital immigrants of male teachers is 27.3%, the rate of digital hybrids is 50% and the rate of digital natives is 22.7%. These results demonstrate that the majority of classroom teachers, both male and female, have a digital hybrid profile. Despite similar percentages for the digital immigrant qualities, it is clear that male teachers significantly outnumber female teachers in terms of the digital nativeness characteristic.

Findings Regarding the Age Variable of Digital Profiles of Classroom Teachers

The distribution of digital profiles of primary school teachers according to the age variable was analyzed with the chi-square (χ^2) test for two variables, and the findings are given in Table 6.

Table 6. Chi-Square test results of classroom teachers' digital profiles by age variable

Age	Digital Profile			Total	
	Digital Immigrants (DI)	Digital Hybrids (DH)	Digital Native (DN)		
20-40	n	11	33	12	56
	%	19.6	58.9	21.4	100
41 and older	n	20	35	1	56
	%	35.7	62.5	1.8	100
Total	n	31	68	13	112
	%	27.7	60.7	11.6	100

$\chi^2 = 11.97$; $sd = 2$; $p = 0.003$

When Table 6 is examined, 19.6% of classroom teachers in the 20-40 age group have a digital immigrant profile, 58.9% have a digital hybrid profile, 21.4% have a digital native profile, while 35.7% of classroom teachers in the age group of 41 and above show digital immigrant features, 62.5% show digital hybrid features, 1.8% have digital native profile. The distribution of digital profiles of classroom teachers according to age variable shows a significant difference ($\chi^2 = 11.97$; $p < 0.05$). This distribution is in favour of teachers who are 41 years of age or older in digital immigration (35.7%) and digital hybridity (62.5%), also in the age range of 20-40 in digital nativism (21.4%).

Findings Related to Professional Seniority Variable of Digital Profiles of Classroom Teachers

The distribution of digital profiles of primary school teachers according to the variable of professional seniority was analyzed with the chi-square (χ^2) test for two variables, and the findings are given in Table 7.

Table 7. Chi-Square test result of classroom teachers' digital profiles by professional seniority variable

Professional Seniority	Digital Profile			Total
	Digital Immigrant (DI)	Digital Hybrid (DH)	Digital Native (DN)	
0-20 years	n	12	39	63
	%	19.0	61.9	100
21 years and above	n	19	29	49
	%	38.8	59.2	100
Total	n	31	68	112
	%	27.7	60.7	100

$\chi^2 = 10.77$; $sd = 2$; $p = 0.005$

Table 7 shows that 38% of classroom teachers with a professional seniority of 21 years and above are digital immigrants, 59.2% are digital hybrids, and 2% are digital natives, while 19% of classroom teachers with 0–20 years of professional experience are digital immigrants, 61.9% are digital hybrids, and 19% have a digital native profile. There is a considerable difference in the distribution of digital profiles of classroom teachers based on the variable of professional seniority ($\chi^2 = 10.77$; $p < 0.05$). While this distribution favours teachers with professional seniorities of 21 or more years and digital immigrants (38.8%), it favours teachers with professional seniorities of 0–20 years among digital hybrids (61.9%) and digital natives (19%).

Findings Regarding the Educational Status Variable of Digital Profiles of Classroom Teachers

Distribution of digital profiles of classroom teachers according to the variable of educational status was analyzed with the chi-square (χ^2) test for two variables, and the findings are given in Table 8.

Table 8. Chi-Square test result of classroom teachers' digital profiles according to the variable of educational status

Educational Status	Digital Profile			Total
	Digital Immigrant (DI)	Digital Hybrid (DH)	Digital Native (DN)	
Associate Degree	n	15	12	27
	%	55.6	44.4	100
Undergraduate and Postgraduate	n	16	56	85
	%	18.8	65.9	100
Total	n	31	68	112
	%	27.7	60.7	100.0

$\chi^2 = 15.67$; $sd = 2$; $p = 0.00$

Table 8 reveals that 55.6% of primary school teachers with an associate degree education are digital immigrants and 44.4% are digital hybrids, while there are no teachers with a digital native profile in this education situation. 18.8% of individuals with undergraduate and postgraduate degrees are "digital immigrants," 65.9% are "digital hybrids," and 15.3% are "digital natives" among this group. The distribution of digital profiles of classroom teachers according to their educational status shows a significant difference ($\chi^2 = 14.63$; $p < 0.05$). This distribution favours teachers who have an associate degree in digital immigration (55.6%), undergraduate and postgraduate degrees in digital hybridity (65.9%), and digital natives (15.3%).

Conclusion and Discussion

The aim of the research was to identify the digital profiles of classroom teachers working in private schools in regard to their perceptions of the digital culture. To do this, the digital profiles of these teachers were analyzed concerning the following variables: gender, age, professional seniority, and educational status. According to the research, a significant majority of classroom teachers who use technology are digital hybrid teachers who can adapt to the digital environment while still favouring traditional approaches. According to Menşan's research (2019, p. 38), classroom teachers make up 23.2% of digital immigrants, 73.4% of digital hybrids, and 3.4% of digital natives. While the percentage of classroom teachers who were digital natives was

3.4% in 2019, it was 11.6% in the research that was done in 2021. With the Covid-19 pandemic, it can be said that the distance education era (Yamamoto & Altun, 2020) and teleworking models, which allow educational resources to be presented in an electronic environment in a time and space independent and flexible manner, have been effective in the change in the digital profiles of primary school teachers. In this period, the use of already existing technology-based online education models has increased tremendously. It is thought that the use of digital resources over the internet instead of printed resources in daily life, the widespread use of virtual libraries instead of physical libraries, the use of virtual meetings instead of face-to-face seminars, and the replacement of traditional shopping with online shopping are effective in the transformation of digital immigrant characteristics into digital hybrid and digital native characteristics. It can be claimed that the compulsory use of digital resources not only in education but also in daily life occurred at the same time as the classroom teachers got used to digital education. However, the 21st century society should have the knowledge and skills to both use technology and carry it forward (Şenel & Gençolu, 2003, p. 47). Teachers and technology are the two main aspects that determine students' achievement. To fulfil the demands and expectations of their digital native students, however, digital immigrant instructors must be competent and continue to grow (Arabacı & Polat, 2013, pp. 12–16). As a result of the research, it can be said that the number of digital native teachers (3.4%) is quite low and should be increased. The high number of digital immigrant teachers (23.2%) shows that the average age of teachers working in private schools is high according to Prensky (Prensky, 2001a). The high number of digital migrant teachers can be considered as a disadvantageous situation for private schools in terms of adaptation to digital working methods and communication with digital native students.

It was determined that the digital profiles of classroom teachers showed a significant distribution according to their gender. Male teachers are at a greater level than female teachers in terms of digital native profile features, although female teachers have more digital hybrid profile features. According to Yazicioglu et al. (2020, p. 281), there were significant gender differences in the digital literacy levels of prospective preschool and classroom teachers. This difference is in favour of male teachers. In this respect, this research is similar to that conducted by Yazıcıoğlu et al. (2020). Many studies in the literature have examined women's perspectives on the digital age, information and communication technologies and the Internet. Fallows (2004, pp.18-19) concluded in his study that men are more tech-savvy than women and that they are more likely to go online than women while doing any activity. Hilbert (2011, p.480) stated that women may be more likely to be technophobic and experience computer anxiety than men. Akça and Kaya (2016, p.309) examined the distribution of computer and internet use by gender in Turkey. According to the study, as of 2015, the rate of computer use in Turkey is 45.6% for women and 64% for men. Internet usage rates are 46.1% for women and 65.8% for men. When we look at the current data of Turkish Statistical Institute (2022) household information technology usage survey, we see that the rate of internet usage in 2022 is 89.1% for men and 80.9% for women. When the research is analysed, it is seen that male teachers use digital resources more frequently than female teachers, which explains why they are more digital native than female teachers. Due to the roles that women and men have been assigned, it is also evident that the traditional structure of Turkish society places many responsibilities on women, particularly in the areas of motherhood and housekeeping, in addition to the working life. Due to this circumstance, it is believed that although male teachers benefit from digital native profile characteristics because of their free time, female instructors have digital hybrid profile features since they spend a significant amount of time to housework in addition to their careers as teachers.

The distribution of classroom teachers' digital profiles according to age variable has been discovered to be significant. Instructors aged 41 and older are more likely to be digital immigrants (35.7%) and digital hybrids (62.5%) than teachers aged 20 to 40 who are more likely to be digital natives (21.4%). The fact that classroom teachers over 40 show digital immigrants is similar to the literature (Prensky, 2001a; Palfrey & Grasser, 2017). The predominance of digital hybrid features among those aged 41 and higher can be seen as a

sign that middle-aged people are accustomed to using both print and digital resources. It is consistent with several research in the literature (Görgün Baran et al., 2017; Prensky, 2001a, 2001b; ad & Donmuş, 2017) that just 1.8% of people in the age bracket of 41 and older identify as digital natives. When the research's data are evaluated, it is found that teachers in the 20–40 age range have a digital native characteristic rate of 21.4%. This circumstance is similar to the results of Karaoğlan Yılmaz & Binay Eyubolu's research (2018, pp. 10-11). The age variable has been discovered to be effective in identifying the digital profiles of classroom teachers in this context. The majority of teachers (58.9%) in the 20–40 age group who were raised with technology and are considered to be digital natives (Prensky, 2001a, p. 2) display digital immigrant features. This can be explained by the fact that, even though people in the 20–40 age range show digital native behaviours in their social interactions, they primarily show digital hybrid behaviours in educational settings as a result of the education they receive, or the educational system used in schools. It may be claimed that educators working with these age groups combine traditional and digital techniques when connecting with parents, exchanging information, using resources, and providing personal growth.

The distribution of elementary school teachers' digital profiles based on their level of experience has been found to be significant. This significant difference is observed to favour teachers with seniority of 21 and above among digital immigrants (38.8%), teachers with seniority of 0–20 years among digital hybrids (61.9%), and digital natives (19%). Similar conclusions about the research were reached by Aksoy et al. (2021, pp. 887-888), while Aksakal et al. (2021, p. 239) found that the characteristics of teachers' digital profiles are unaffected by changes in the number of years of professional experience. It has been observed that teachers with professional seniority of 21 years and above show features of digital immigrants that are also related to their age. We can say that digital immigrants employ printed resources when setting up learning environments and creating measurement tools since they cannot remove printed resources. Additionally, it has been shown that teachers who are with lower professional seniority in their field use digital technology more frequently and more effectively. One could argue that this situation is brought on by the fact that young instructors with less professional seniority years have greater technological and digital tool literacy knowledge and skills.

It has been discovered that there is a significant distribution in classroom teachers' digital profiles based on their level of education. This accumulation is in favour of teachers with undergraduate and postgraduate degrees in digital hybridity (65.9%), digital nativism (15.3%), and associate degrees in digital immigration (55.6%). It has been determined that teachers with undergraduate and graduate degrees tend to be more digital hybrid and digital native in terms of the management of learning environments, communication with parents and students, and personal and professional growth. This situation can be interpreted as a sign that teachers' use of digital technology and level of digital literacy increase along with their level of education in their respective disciplines. Additionally, the fact that none of the associate degree teachers is a digital native can be explained by the fact that they place less value on personal growth, which is tied to their education and the use of digital resources in the classroom.

As a result, the research clearly contradicts the classification made only for the age variable as digital immigrant and digital native in the studies of Prensky (2001a, p.4) and Palfrey & Grassler (2017, p. 8). While the research differs from studies conducted by considering different variables (gender, professional seniority, educational status) of teachers' digital profiles, research conducted by Menşan (2019, pp. 81-82), Şad & Donmuş (2017, p. 19) shows similarity in terms of examining digital native, digital immigrant, and digital hybrid characteristics in terms of different variables in the context of the teaching profession. The study reinforces the idea of the "digital hybrid," which Kakırman Yıldız proposed in his research (2012, p. 832), arguing that the digital profile cannot be clearly distinguished from the "digital immigrant" and "digital native" in order to examine the digital profile in terms of various variables. Based on the digital hybrid characteristic of teachers with a seniority of 21 years and above, the research by Görgün Baran et al. (2017, p. 8) shows that

older individuals are not completely digital immigrants due to the high rate of digital technology use by those over 50 who are digital immigrants. In this regard, it may be claimed that examining teachers' digital profiles just based on their age is insufficient and that many other factors are relevant. In actuality, regardless of age or professional seniority, it has been seen that teachers with lifetime learning skills can demonstrate digital native profile features with the efforts and trainings they will take. Teachers play a significant part in the model that describes the people with whom digital natives interact most, according to Palfrey & Grassler (2017, p. 10). Teachers who are digital immigrants should be aware that the conventional approaches that were effective when they were students no longer apply to students who are digital natives. Given that digital natives are less likely to learn using traditional techniques (Prensky, 2001a, p. 3), teachers must improve their digital skills in order to comprehend their students who are digital natives, create an alternative educational strategy, and improve education (Jukes & Dosaj, 2006, p. 38). Teachers must create lessons and assessments that are appropriate for the digital age for their pupils, serve as role models for digital age work and learning, digital citizenship, and responsibilities, and offer professional development as a requirement of the 21st century (International Society for Technology in Education [ISTE]), 2008). Teachers must also use information technology for cultural, social, or professional goals (Ministry of National Education [MEB], 2017). Digital competence is recognized as one of the competences that teachers in the twenty-first century should possess, and they must develop themselves in this area. The mandatory requirements of the Covid-19 pandemic process have caused a change in the teachers' levels of digital proficiency, from digital immigrants to digital hybrids and from digital hybrids to digital natives. Teachers' digital profiles should evolve not just as a result of their obligations, but also as a requirement of lifelong learning. This would allow for a higher level of educational effectiveness and quality.

The research's findings led to the following recommendations: It is possible to identify the digital profiles of the classroom teachers who are actively engaged and develop plans for their more effective use of digital technologies. For better use of digital technologies, teachers with a digital immigrant profile can obtain digital training. It is possible to encourage classroom teachers who have a hybrid digital profile to use digital resources both in their daily lives and in the classroom. Digital platforms which are used in daily life frequently (Whatsapp, Facebook, Zoom, E-Mail, Google, LinkedIn, etc.) can be engaged to communicate with parents and students. Large-scale research can be done to find out what challenges classroom teachers with a digital immigrant profile have when utilizing digital technologies. Training on educational technologies can be conducted with a focus on application for the development of digital profiles of teacher candidates in their pre-vocational training.

Ethics Committee Approval:

This study was approved by the Inonu University Ethics Committee with its decision dated 14.01.2021 and numbered 2021/2-4.

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