VOL (6) NO:2
2024

JOURNAL OF ADVANCED EDUCATION STUDIES

İLERİ EĞİTİM ÇALIŞMALARI DERGİSİ

BAŞ EDİTÖR - Tuğba Yanpar Yelken

Journal of Advanced Education Studies

Cilt: 6 Sayı:2 Aralık 2024

JOURNAL OF ADVANCED EDUCATION STUDIES

Cilt: 6 Sayı:2 Aralık 2024

İÇİNDEKİLER

EJAES

JOURNAL OF ADVANCED EDUCATION STUDIES

İleri Eğitim Çalışmaları Dergisi

6(2): 1-26, 2024

THE EFFECT OF PHİLOSOPHY FOR CHİLDREN'S (P4C) APPROACH ON PRİMARY SCHOOL STUDENTS' ATTİTUDE TOWARDS SCİENCE AND PROBLEM-SOLVİNG SKİLLS[1]

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Geliş Tarihi/Received: 10.07.2024 Elektronik Yayın / Online Published: 15.12.2024

DOI: 10.48166/ejaes.1513792

ABSTRACT

This study investigated the effect of the Philosophy for Children (P4C) Approach, one of the most effective ways to help children who enjoy thinking and questioning from an early age, gain thinking skills, and make sense of what they think, on primary school students' attitudes towards science and problem-solving skills. The Philosophy for Children implementation process was carried out for 7 weeks and 3 hours in each lesson, 21 hours in total, with the experimental and control groups selected from 4th grade students studying in a public school in Haliliye district of Şanlıurfa province. This process was conducted using a mixed-methods research method. This study preferred to use the explanatory sequential mixed research method, as it collected qualitative data after analyzing quantitative data. The study employed a quasi-experimental design in the quantitative dimension, incorporating a pretest-posttest control group. The qualitative dimension of the study employed a case study for in-depth data analysis. The variables related to the effect of the Philosophy for Children approach on primary school students' attitudes towards science and problem-solving skills were carefully examined, and the findings were interpreted. The findings concluded that the Philosophy for Children Approach, positively influenced the 4th grade students' attitudes towards science and problem-solving skills through its activities and practices.

Keywords: Thinking, philosophical thinking, philosophy for children, attitude toward science, problem solving

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ÇOCUKLAR İÇİN FELSEFE (P4C) YAKLAŞIMININ İLKOKUL ÖĞRENCİLERİNİN FENE YÖNELİK TUTUM VE PROBLEM ÇÖZME BECERİSİNE ETKİSİ

ÖZET

Bu çalışmada küçük yaşlardan itibaren düşünmek ve sorgulamaktan zevk alan çocuklara düşünme becerisi kazandırma, düşündüklerini anlamlandırmalarını sağlayan en etkili yollardan biri olan Çocuklar İçin Felsefe (P4C) Yaklaşımının ilkokul öğrencilerinin fene yönelik tutum ve problem çözme becerisine etkisi araştırılmıştır. Çocuklar için Felsefe uygulama süreci, 7 hafta ve her derste 3 saat olmak üzere toplamda 21 saat şeklinde, Şanlıurfa ili Haliliye ilçesinde bir devlet okulunda öğrenim görmekte olan 4. sınıf öğrencilerinden seçilen deney ve kontrol grubu ile gerçekleştirilmiştir. Bu süreç karma araştırma yöntemi kullanılarak yürütülmüştür. Bu araştırmada nicel veriler toplanıp analiz edildikten sonra nitel veriler toplandığı için açıklayıcı sıralı karma araştırma yönteminin kullanılması tercih edilmiştir. Araştırmanın nicel boyutunda, ön test-son test kontrol gruplu yarı deneysel desen kullanılmıştır. Araştırmanın nitel boyutunda, verilerin derinlemesine analizi yapılacağı için durum çalışması kullanılmıştır. Çocuklar için Felsefe yaklaşımının ilkokul öğrencilerinin fene yönelik tutum ve problem çözme becerisine etkisine ilişkin değişkenler özenle incelenmiş ve bulgular yorumlanmıştır. Elde edilen bulgular sonucunda Çocuklar için Felsefe Yaklaşımının öngördüğü etkinlikler ve uygulamalar kullanılarak yürütülen öğretimin, 4.sınıf öğrencilerinin fene yönelik tutum ve problem çözme becerisini olumlu yönde etkilediği sonucuna ulaşılmıştır.

Anahtar Kelimeler: Düşünme, felsefi düşünme, çocuklar için felsefe, fene yönelik tutum, problem çözme

1. INTRODUCTION

Philosophical thinking and philosophical perspective play an important role in people's relationships with the external environment and making sense of life. In a period when philosophical thinking is so important, we need to start to gain a philosophical perspective in childhood, when our imagination is most effective (Öğüt, 2019). It is an inevitable fact that philosophical school education should start at an early age (Çayır, 2015; Direk, 2008; Öğüt, 2019). Karl Jaspers first emphasized the idea of philosophy for children in 1953. "Philosophy for Children" is the English term for the concept, known as "Kinderphilosophie" or "Philosophie für Kinder" in German. Philosophy for Children". Turkish translators translated this concept as "children's philosophy" or "philosophy for children" (Karakaya, 2006). Matthew Lipman laid the foundation of philosophy for children in the USA in 1960 (Soysal & Pullu, 2020). Lipman found it appropriate to name it "Philosophy for Children-P4C." Those who say that philosophy can be done more with children have used the concept of "Philosophy with Children" (Mutlu, 2010). Philosophies for kids aim to help them think independently (Lipman, Sharp, & Oscanyan, 1980). The goal of Lipman, the founder of the Philosophy for Children approach, was not to turn children into philosophers or philosophy learners, but rather to make children think more, criticize more, and reflect what they think (Karakaya, 2006). Philosophy for Children Studies, which are one of the most effective ways of teaching children thinking skills, are of great importance (Direk, 2008). Matthew Lipman and Ann Sharp introduced the Philosophy for Children approach in the 1970s, and it evolved into an educational program under this name in the following years. There are many

studies on philosophy for children's education in Turkey and around the world (Çayır & Akkoyunlu, 2016; Direk, 2008; Petek-Boyacı, Karadağ, & Gülenç, 2018). Öğüt (2019) emphasized that many philosophers, such as Catherine McCall, Gareth Matthews, and Ekke Martens, have made significant contributions to this field by applying their own methods. The Philosophical Society of Turkey produced the first important work in the field of philosophy for children's education in Turkey came from the Philosophical Society of Turkey. In 1993, the Philosophical Society of Turkey established a philosophy unit for children. In the following years, it was argued in a symposium that a "Philosophy for Children" course should be given in primary schools (Öğüt, 2019).

Philosophy for Children is an approach that positively develops children's thinking skills and contributes to how they learn rather than what they learn. This approach, which adopts the principle of learning to think, aims for students to learn by discussing, questioning, and making observations in groups (Fisher, 2008). Children's philosophy education develops their problem-solving skills, critical thinking skills, ability to establish cause-and-effect relationships, and sense of discovery. In this way, children will be able to look at things from a different perspective and think more effectively.

With the implementation of student-based approaches in education, students' mental activities have come to the forefront in the education and training process (Tuncer & Kaysi, 2013). The Philosophy for Children approach, which focuses on critical thinking and reasoning skills, emerged in the 1960s, based on Matthew Lipman's view of teaching children to think (Brandt, 1988). The Philosophy for Children approach focuses on the idea that children can develop thinking and critical thinking skills from an early age. This approach, which directs children to think and develops their reasoning skills, has been implemented in many countries (Petek-Boyacı, Karadağ, & Gülenç, 2018). The first study in the field of philosophy for children in Turkey was conducted by Nuran Direk, who tried to develop philosophy programs for primary school students. The books Filozof Çocuk and Küçük Prens Üzerine Düşünmek were written by Nuran Direk (Direk, 2008). Philosophy skills that should be acquired by primary school students are essential for individuals throughout their lives (Fisher, 2008). To help them acquire this skill, appropriate training should be provided in early childhood. It is important for children in this age group to solve philosophical problems well in order to be able to solve social and personal problems that they may encounter at later ages (Erdaş, Aksüt, & Aydın, 2015).

The science curriculum identifies engineering skills, life skills, and science process skills as specific goals that individuals should have (Aslan, Ertaş-Kılıç, & Kılıç, 2016). The science curriculum lists life skills as analytical thinking, reflective thinking, teamwork, creative thinking, entrepreneurship, and communication (MoNE, 2018). In the science curriculum, scientific process skills include prediction, classification, experimentation, reaching conclusions, induction, and deduction. By working like a scientist, the student questions and investigates scientific knowledge and makes sense of the results by structuring them (Aslan, Ertaş-Kılıç, & Kılıç, 2016).The goals that the science curriculum wants to achieve and the goals provided by philosophy for children's education are compatible with each other.

When some studies on philosophy for children are examined, Şahin (2023), in his study titled "Investigation of the Effect of Philosophy for Children Pedagogy on Fourth Grade Students' Critical Thinking and Problem-Solving Skills, " concluded that philosophy for children pedagogy improved students' critical thinking and problem-solving skills. Similarly, Alabaz (2022), in his study titled "On philosophy education for children, "examined the studies aiming to raise children who have acquired creative thinking skills, thinking, and questioning by providing children with philosophical thinking. The study emphasized the importance of introducing the Philosophy for Children approach at an early age. Akan (2022) concluded that the Philosophy for Children Approach activities in the life science course had a significant impact on the experimental group students' creative thinking skills. In his study, Acar (2022) worked with gifted students. As a result of the study, he concluded that the Philosophy for Children Approach significantly impacted the critical thinking skills of gifted students; however, it did not make a numerically significant difference on English speaking skills. Kayaalp (2021) conducted an investigation into the implementation of philosophy for children practices in a second grade Turkish lesson in primary school. At the end of the research, it was concluded that children had some problems while doing philosophical inquiry practices in the Turkish lesson, but since the lesson was differentiated, the students listened carefully to the lesson. Turhan (2021) examined the effect of philosophy education for children on primary school 3rd grade students. As a result of the research, he emphasized that students who received philosophy education for children showed positive development in their questioning skills, critical thinking skills, and creative thinking skills. Upon reviewing the research, we found no previous studies that investigated the impact of the philosophy for children approach on the attitudes and problem-solving abilities of 4th grade science students. This study will contribute to the field by explaining how Philosophy for Children activities influence 4th grade students' attitudes towards science and problem-solving skills.

2. METHOD

2.1. Research Design

This study was conducted to determine the effect of the Philosophy for Children (P4C) approach on elementary school students' attitudes towards science and problem-solving skills by using an explanatory sequential design within the scope of the mixed method. The mixed method involves collecting qualitative and quantitative data and combining both designs (Creswell, 2008; Johnson & Christensen, 2004). The mixed method, which combines quantitative and qualitative data, provides a clearer understanding of the research problem than either design alone (Creswell, 2008). In the explanatory sequential mixed research method, the collection of qualitative data occurs after the analysis of quantitative data. The discussion section combines and interprets the separately analyzed quantitative and qualitative data (Creswell, 2008). The study employed a quasi-experimental design in the quantitative dimension, incorporating a pretest-posttest control group. The most commonly used design in educational research is the quasi-experimental design, mainly when all variables are difficult

to control. In a quasi-experimental design, control and experimental groups are formed through random assignment (Balcı, 2001; Büyüköztürk, 2007). The pre-tests aid in understanding the similarities between the experimental and control groups prior to the application, and they also aid in interpreting the results of the post-test administered at the conclusion of the application. Then, the activities whose effectiveness is to be measured are applied to the experimental group. Traditional methods are applied to the control group (Özmen & Karamustafaoğlu, 2019). The study's control group implemented the 4th grade science curriculum's prescribed activities using the constructivist approach. The experimental group implemented teaching methods and activities that measured the effectiveness of the Philosophy for Children (P4C) Approach. In the qualitative dimension of the study, a case study was preferred since the data obtained will be examined in depth and analyzed in detail. In-depth analysis of one or more situations is the most important and effective feature of a case study (Stake, 1995; Yin, 2014). A case study collects multiple datasets, enabling in-depth research examination and more systematic data collection (Chmiliar, 2010). The primary benefit of a case study is the collection of data using various methods, which yields comprehensive and detailed information. A case study provides the researcher with the opportunity to use data collection tools such as observation, interview, and document analysis effectively (Yıldırım & Şimşek, 2016). In this study, the researcher's and the students' diaries about the lesson served as documents after the interviews with the students.

2.2. Study Group

In order to form the study group, the Problem Solving Scale and Attitude towards Science Scale were applied to five 4th grade classes in a public school located in Haliliye central district of Şanlıurfa province in the 2022-2023 academic year before the application started. The pre-test results identified the 4/B and 4/E classes as the study groups due to their similar characteristics. The control and experimental groups were determined by lottery, with 4/B class as the control group and 4/E class as the experimental group. The constructivist approach guided the implementation of the 4th grade science curriculum's prescribed activities in the control group. In the experimental group, The experimental group implemented teaching methods and activities based on the Philosophy for Table 1 provides numerical information about the control and experimental groups in the study.

Table 1. Frequency and percentage distributions of experimental and control groups

Group	f	%
Experimental group	22	48
Control group	24	52
Total	46	100

2.3. Data collection tools

The study employed mixed research methods, utilizing different data collection tools for the quantitative and qualitative sections. The quantitative part of the study collected data using attitude towards science scales and problem-solving inventories. Zcan and Koca (2020) prepared the Science Attitude Scale, which consists of 36 items organized as a 5-point Likert scale. (Cronbach Alpha)

reliability coefficient was calculated to generate data for the reliability test of the 36 items in the scale. We determined the Cronbach alpha reliability coefficient to be.93 for all 36 items on the scale. There are four different sub-factors in the scale. We found the reliability coefficients of these factors to be.91 for the liking factor,.74 for the trust factor,.76 for the utility factor, and.72 for the interest factor. The problem-solving inventory used in the study was prepared by Serin, Serin-Bulut, and Saygılı (2010) and consists of 24 items and is organized on a 5-point Likert scale. In the 24-item scale, there are three factors, namely "trust" (12 items), "self-control" (7 items), and "avoidance" (5 items). The Cronbach alpha reliability coefficient of the whole scale was calculated at 0.80. The study employed observation, document analysis, and interview techniques as data collection tools in its qualitative dimension. According to Creswell (2008), qualitative researchers utilize interviews, documents, observations, and audio-visual information sources instead of collecting data from a single source. Merriam (2013) stated that data collected using two or more data collection methods (interview, document, and observation) by the triangulation method is effective in achieving more reliable and accurate results.

2.4 Research Process

The research was planned for 7 weeks in the 2022–2023 academic year in accordance with the curriculum within the scope of the "Our Food" unit of the 4th grade science course in primary school. The first week involved applying problem-solving inventory and attitude towards science scales to both the control and experimental groups. The control group applied the 4th grade science curriculum's prescribed activities in accordance with the constructivist approach for five weeks. The experimental group prepared philosophy activities and daily plans for the acquisitions in the "Our Food" unit of the 4th grade science course. Children's philosophy activities complemented the lessons conducted throughout the research. While determining the philosophical stories, stories that encourage children to question in cooperation were used. In the last week, post-tests were administered and the 7-week process was completed. Table 2 shows the stories used and concepts addressed.

Table2. Stories and Concepts Used

Story	Concept
Frog and Toad	Our nutrients
Rainbow Foods of the Sea	Water and Minerals
Carrot Brotherhood	Healthy Nutrition
The Error of the Meow	Balanced Nutrition
Green Health with Life	Healthy Nutrition
Chocolate Cake	Rules

2.5. Data Analysis

In the first stage of the study, in order to form the control and experimental groups, the attitude towards science scale and problem-solving inventory were applied to all classes one week before the application. According to the pre-test results, the 4/B and 4/E classes were determined to be the study groups since they showed similar characteristics. One week after the application, post-tests were applied to the control and experimental group students. The SPSS 22.0 package program was used to determine

whether there was a significant difference in attitude towards science and problem-solving skills between the control and experimental groups.

The researcher used the content analysis method in the qualitative part of the study to analyze data from observation results, student application diaries, and semi-structured interviews. The content analysis approach creates codes by interpreting the sentences used by the researcher and students. The codes are brought together using an inductive approach, and themes are reached (Yıldırım & Şimşek, 2016). In this study, expert opinions were taken regarding the content of the interview conducted in order to reach clear results. To prevent data loss, we recorded all interviews using a voice recorder. The data obtained as a result of the interviews was directly quoted and included in the qualitative findings section.

3. FINDINGS

3.1. Findings Related to the Quantitative Dimension

The findings relate to the PSTS of both the Control and Experimental Group students. Before the planned applications were carried out, the scale of attitude towards science was applied to the students in the control and experimental groups. An independent sample t-test was applied to determine the statistical significance between the mean scores of the study groups.

Table 3. Independent Groups T-Test Results of Control and Experimental Group Students' PSTS Pre-Test Scores

Groups	N	x	S	df	t	p
Experiment	22	92.09	7.45	44	1.963	0.162
Control	24	86.75	10.57			

The independent sample t-test results from Table 3 show that the students in the control group, who followed the science curriculum's prescribed activities, had an arithmetic mean of 86.75 for their pretest scores. The experimental group, which applied the activities prescribed by the Philosophy for Children Approach, had arithmetic mean pretest scores of 92.09. The findings indicate that there is no significant difference between the mean pretest scores of the students in the control and experimental groups ($t = 1.963$, $p > 0.05$). Analysis of the PSTS pre-test scores before the application revealed that the study groups were on par with each other. Before and after the applications, the attitude scale towards science was applied to the control group students. To determine whether there was a significant difference between the pre-test and post-test scores of the students in the control group, dependent sample t test results were examined.

Table 4. Dependent Groups T-Test Results of Control Group Students' FYTÖ Pre-Test and Post-Test Scores

Groups	N	x	S	df	t	p
Experiment	24	130.66	14.49	23	4.651	.00
Control	24	142.25	21.08			

According to the dependent samples t-test results obtained from Table 4, when the pre-test and post-test scores of the study group students in the control group are examined, it is seen that the arithmetic mean of the PSTL pre-test scores of the students in the control group, in which the activities stipulated by the Science curriculum were applied, is 130.66 and the arithmetic mean of the post-test scores is 142.25. According to the findings, it can be said that there is statistical significance between the pre-test and post-test mean scores of the students in the control group in favor of the post-test ($t = 4.651$, $p<0.05$). Based on this finding, it can be said that the activities foreseen by the science curriculum in the control group positively affected attitudes towards science.

Attitudes towards the science scale were applied to the experimental group students before and after the applications. In order to determine whether there was statistical significance between the pre-test and post-test scores of the students in the experimental group, the results of the dependent sample t test were examined. Table 5 presents the findings from the data.

Table 5. Dependent Groups T-Test Results of Experimental Group Students' FYTÖ Pre-Test and Post-Test Scores

Groups	N	x	S	df	t	p
Experiment	22	137.81	10.90	21	6.007	.00
Control	22	160.13	14.61			

According to the data obtained from the dependent samples t-test results obtained from Table 5, when the pre-test and post-test scores of the study group students in the experimental group are examined, it is seen that the arithmetic mean of the PSTL pre-test scores of the experimental group students, to whom the activities envisaged by the Philosophy for Children Approach were applied, is 137.81 and the arithmetic mean of the post-test scores is 160.13. According to the findings, there is statistical significance between the pre-test and post-test mean scores of the students in the experimental group in favor of the post-test ($t = 6.007$, $p<0.05$). Based on this finding, it can be said that the activities envisaged by the Philosophy for Children Approach in the experimental group had a positive effect on their attitudes towards science.

After the application, the attitude towards science scale was applied to the experimental group and control group students. In order to determine whether there was statistical significance between the pre-test and post-test difference scores of the students in the experimental group and the control group, independent sample t test results were examined. Table 6 presents the findings from the data.

Table 6. Independent Groups T-Test Results of Experimental Group and Control Group Students' PSTS Pre-Test-Post-Test Difference Scores

Groups	N	x	S	df	t	p
Experiment	22	23.00	16.18	44	2.649	0.011
Control	24	12.08	11.56			

Examining Table 6, we find that the control group's PIT Pre-test-Post-test Difference Scores have an arithmetic mean of 12.08, whereas the experimental group's PIT Pre-test-Post-test Difference Scores have an arithmetic mean of 23.00. The results showed that there was statistical significance in

favor of the experimental group between the difference scores of the experimental group on the pretest and posttest and the difference scores of the control group on the pretest and posttest ($t = 2.649$, $p<0.05$). This discovery revealed that the Philosophy for Children Approach's activities and practices, when used in teaching, influenced students' attitudes towards science differently than the activities mandated by the 4th grade science curriculum. It can be said that the instruction carried out using the activities and practices stipulated by the Philosophy for Children Approach, which had a more significant effect on the PSTQ scores than before the implementation, was effective in developing positive attitudes towards science. In addition, the result of the independent sample t-test analysis provides information about whether there is statistical significance between the pre-test and post-test scores but does not provide information about the degree of significant difference. Therefore, the effect size was calculated separately. The effect size is obtained by dividing the difference between the means of the control and experimental groups by the combined standard deviation (Green & Salkind, 2005). The test result led to the calculation of the effect size at 0.78. Green & Salkind (2005) define an effect size value above 1 as quite large, 0.8 as a large effect, and 0.5 as a medium effect. The fact that the obtained value is close to 0.8 indicates that the difference between the groups is significant.

3.2. Findings Related to PCE of Control and Experimental Group Students

Before the application, the Problem Solving Inventory was applied to the students in the control and experimental groups. Independent samples t-test was applied to the students in order to determine the statistical significance between the mean PSI scores of the groups. The findings are presented in Table 7.

Table 7. Independent Groups T-Test Results of PCI Pre-Test Scores of Control and Experimental Group Students

Groups	N	x	S	df	t	p
Experiment	22	92.09	7.45	44	1.963	0.56
Control	24	86.75	10.57			

The independent sample t-test results from Table 7 show that the arithmetic mean of the PCI pre-test scores was 86.75 for the students in the control group, who followed the science curriculum's prescribed activities, and 92.09 for the students in the experimental group, who followed the philosophy for children approach's prescribed activities. The findings indicate that there is no statistical significance between the PCI pre-test mean scores of the students in the control and experimental groups ($t = 1.963$, $p > 0.05$).

Analysis of the PSI pre-test scores before the application revealed similarity between the groups. The Problem-Solving Inventory was administered to the control group students before and after the intervention. In order to determine whether there was statistical significance between the pre-test and post-test scores of the students in the control group, the results of the dependent sample t test were examined. Table 8 presents the findings from the data.

Table 8. Dependent Groups T-Test Results of Control Group Students' PCI Pre-Test and Post-Test Scores

Groups	N	x	S	df	t	p
Experiment	24	86.75	10.57	23	5.318	.00
Control	24	95.00	14.84			

According to the results of the dependent samples t test obtained from Table 8, when the pre-test and post-test scores of the students in the control group are examined, it is seen that the arithmetic mean of the PCI pre-test scores of the students in the control group, in which the activities stipulated by the Science curriculum were applied, is 86.75, and the arithmetic mean of the post-test scores is 95.00. According to the findings, there is a statistical significance between the mean scores of the PCI pre-test and post-test of the students in the control group in favor of the post-test ($t = 5.318$, $p<0.05$). Based on this finding, it can be said that the activities prescribed by the science curriculum in the control group positively affected the problem-solving skills.

The Problem-Solving Inventory was administered to the students in the experimental group before and after the implementation. In order to determine whether there was statistical significance between the pre-test and post-test scores of the students in the experimental group, the results of the dependent sample t test were examined. Table 9 presents the findings from the data.

Table 9. Independent Groups T-Test Results of PSI Pre-Test-Post-Test Difference Scores of Experimental Group and Control Group Students

Groups	N	x	S	df	t	p
Experiment	22	15.31	9.33	44	2.827	0.007
Control	24	8.25	7.60			

When Table 9 is examined, it is seen that the arithmetic mean of the control group's PSE Pre-test-Post-test Difference Scores is 8.25, while the arithmetic mean of the experimental group's PSE Pre-test-Post-test Difference Scores is 15.31. The results showed that there was statistical significance in favor of the experimental group between the experimental group's PSE pre-test and post-test difference scores and the control group's PSE pre-test and post-test difference scores ($t = 2.827$, $p<0.05$). This finding showed that the Philosophy for Children Approach's prescribed activities and practices had different effects on students' problem-solving skills compared to the 4th grade science curriculum's prescribed activities. It can be said that the instruction carried out using the activities and practices prescribed by the Philosophy for Children Approach, which had a greater effect on increasing PSI scores compared to the pre-implementation, was effective in developing problem-solving skills positively. In addition, the result of the independent sample t-test analysis provides information about whether there is statistical significance between the pre-test and post-test scores but does not provide information about the degree of significant difference. Therefore, the effect size was calculated separately. The effect size is obtained by dividing the difference between the means of the control and experimental groups by the combined standard deviation (Green & Salkind, 2005). The test result led to the calculation of the effect size at 0.83. Green & Salkind (2005) define an effect size value above 1 as very

large, 0.8 as a large effect, and 0.5 as a medium effect. The fact that the value obtained is greater than 0.8 indicates that the difference between the groups is large.

3.3. Findings Related to the Qualitative Dimension

In this part of the study, the data obtained at the end of the semi-structured interviews with the students were subjected to content analysis; themes, categories, and codes were determined. Based on the answers given by the students to the interview questions, the answers were analyzed and described. The data obtained from the student diaries kept by the students regularly during every lesson and the lesson observation forms noted by the teacher were used to support the findings of the interviews. The research bases its findings on student confidentiality, so it withholds the names of the participating students, identifying them as T1, T2. The findings were obtained based on the answers to the question, "What are the opinions of the students about the philosophy for children approach in the science course?". Table 10 categorizes the findings.

Table 10. What are the opinions of the students about the Philosophy for Children approach in Science course?

Theme	**Category**	Codes	Frequency
Views on Philosophy Approach for Children.	**Positive Opinion**	Taking responsibility	5
		It's fun	8
		Delightful finding	7
		Immersive	4
		Improving thinking	4
		Reaching different ideas	6
		Comment	3
		Learning to debate	4
		Establishing communication	2
	Negative Opinion	Finding Boring	1
		Contempt	2
		Time consuming	3

When asked about the Philosophy for Children approach in the Science course, students said it was effective, useful, enjoyable, and different from other courses. Some of the participating students expressed the following views on this subject:

"It was the first time we taught science in such a way. I had a lot of fun, and I discussed it with my friends by thinking all the time" (T 1).

"It was very nice to act out the heroes in the stories, to think like them, to learn by having fun" (T 4).

"In our discussions, my friends listened to me and sometimes agreed with what I said. I felt special in this way" (T 2).

"Learning by playing games was very impressive, I wish we could teach all lessons in this way. It was the most beautiful and enjoyable science lesson of my life... " (T 10).

"We were always talking with my friends and teacher, even if we had different ideas, we would make our friends happy by clapping. This practice should always be in science lessons" (T 12).

In Table 10, what are the opinions of the students about the Philosophy for Children approach in the Science course? Based on the question, codes were created under the categories of "positive opinion" and "negative opinion". In the "positive opinion" category, the participant students mentioned positive experiences in terms of having fun (f=7), being enjoyable (f=5), reaching different ideas (f=6); in the "negative opinion" category, they mentioned experiences of being time-consuming (f=3), being dismissive (f=2), and finding it boring (f=1).

The diaries kept by the students after the implementation of the Philosophy for Children approach in the Science course support the above findings. In this regard, some of the participant students included their opinions on the subject in their diaries as follows:

"Our dear daily science lesson has never been so fun and beautiful. I liked the discussions and activities we did very much... It was very nice to know how to do philosophy, it was very interesting to hear different ideas" (T 20).

"I started to like philosophy more and more each time. Even though my friends in my group did not agree with my ideas, it was still nice to do philosophy " (T 16).

"The heroes in the stories have different stories and it was very enjoyable to live like them" (T 13).

"Today, I came home and told my parents that we did philosophy in the science lesson; we did the lesson by discussing and asking questions. They were very surprised" (T 10).

Findings were obtained based on the answers to the question "What are the opinions of the students about the effect of the Philosophy for Children approach on students' attitudes towards science?". The findings obtained are categorized in Table 11.

Table 11. What are the student views on the effect of the Philosophy for Children approach on students' attitudes towards science?

Theme	**Category**	Codes	Frequency
Attitudes Towards Science	**Positive Opinion**	I liked science more	8
		Efficiency	5
		Delightful finding	7
		Immersive	4
		I am happy	4
		It should be like this in other lessons	6
		Comment	3
		Learning to debate	4
		Establishing communication	2
	Negative Opinion	Finding it boring	1
		No change	2
		My homework has increased	3

What are the student views on the effect of Philosophy for Children practices on students' attitudes towards science? Based on the question, responses were received that the students found the sessions effective, that they enjoyed the process, and that the lessons were held quite differently from other lessons. Some of the participant students expressed the following opinions on this subject:

"We had never taught science in this way before, time passed very fast in the lessons. I never wanted the science lesson to end" (T 1).

"The activities and games we did made the lesson more enjoyable" (T 4).

"I understood the subject better thanks to the applications we made in the lessons, I wish the science lesson would always be like this" (T 2).

In Table 11, what are the students' opinions about the effect of Philosophy for Children practices on students' attitudes towards science? Based on the question, codes were created under the categories of "positive opinion" and "negative opinion". In the "positive opinion" category, participant students mentioned positive experiences such as I liked Science Lesson More (f=8), Finding it enjoyable (f=7), It should be like this in other lessons (f=6); in the "negative opinion" category, they mentioned experiences such as My homework increased (f=3), There was no change (f=2), Finding it boring (f=1).

Regarding the opinions of the students about the effect of Philosophy for Children practices on students' attitudes towards science, the diaries kept by the students after the practice support the above findings. In this regard, some of the participant students included their opinions on the subject in their diaries as follows:

" ... The science lesson was so good today that I cannot explain it. The activities we did in the groups we formed with my friends were very enjoyable" (T 3).

"The point I was most happy about was that I understood the science lesson better" (T 5).

"We did philosophy in the science lesson today, the lesson ended very quickly... I liked the lesson very much and I was very happy" (T 6).

The findings were obtained based on the answers to the question "What are the students' opinions about the effect of Philosophy for Children approach on the 4th grade students' problem-solving skills?". The findings obtained are categorized in Table 12.

Table 12. What are the student views on the effect of the Philosophy for Children approach on 4th grade students' problem-solving skills?

Theme	**Category**	Codes	Frequency
Problem Solving Skills	**Positive Opinion**	Recognizing the problem	5
		Finding solutions	6
		Being decisive in the face of problems	7
		To be able to create cause and effect relationship	3
		Creating different solutions	4
		Reaching different ideas	6
		Analysis	2
		Planning for Solutions	3
		Relationship building	1
	Negative Opinion	Failure to produce solutions	3
		Not Recognizing the Problem	1
		Don't be discouraged	2
			1

What are the student views on the effect of the Philosophy for Children approach on 4th grade students' problem-solving skills? Based on the question, responses were received that the students were able to express the problems clearly in the sessions, create solutions to the problems they encountered, and establish relationships between the problems. Some of the participant students expressed their opinions on this issue as follows:

" ... We think by discussing, and as we think, we tell our ideas and solutions to our friends" (T 4).

"I can solve the problems I encounter in daily life like the heroes in the stories we listen to while philosophizing" (T 10).

"At first, it was difficult to find solutions to the problems we faced after the discussions. As time progressed, it became easier to find solutions" (T 12).

"We were able to find different solutions by making plans with my friends in the group" (T 5).

In Table 12, what are the students' opinions on the effect of Philosophy for Children approach on 4th grade students' problem-solving skills? Based on the question, codes were created under the categories of "positive opinion" and "negative opinion". In the "positive opinion" category, our participant students. In the "positive opinion" category, our participant students mentioned positive experiences in terms of Being Determined in the Face of Problems (f=7), Finding Solutions (f=6), Reaching Different Ideas (f=6), Realizing the Problem (f=6); in the "negative opinion" category, they mentioned experiences of Not Producing Solutions (f=3), Being Discouraged (f=2), Not Realizing the Problem (f=1), Not Making Connections (f=1).

The diaries kept by the students after the application regarding the effect of the Philosophy for Children approach on the 4th grade students' problem-solving skills in the Science course support the

above findings. In this regard, some of the participant students included their opinions on the subject in their diaries as follows:

"Dear diary, today, like Frog and Murbaga, I solved my small problems alone... Solving small problems is not a problem for me anymore" (T 4).

" In the activities we did, we tried to find solutions to the problems they experienced by putting ourselves in the shoes of the story heroes, we always respected different solutions, I always answered the questions without any shame " (T 6).

" ... I have no problems in solving the problems I encounter " (T 9).

" ... I can solve my small problems without getting help from anyone " (T 13).

As a result of the interviews with the students and the diaries kept by the students after each session, it is seen that the Philosophy for Children Approach is an effective, beautiful, exciting practice. It was a process in which the stories used in the application could easily lead students to the discussion process and students could deepen the stories. The children tried to produce different solutions and make sense of the process based on the experiences they had in their own world with philosophical questions. Since it was an environment where they could think freely, they participated in the activities without getting bored or tired. Positive changes were observed in both students' attitudes towards science and their problem-solving skills during the sessions.

4. CONCLUSION and DISCUSSION

The aim of the study was to determine the effect of the Philosophy for Children (P4C) approach on primary school students' attitudes towards science and problem-solving skills. For this purpose, philosophy for children applications were prepared and used in the 4th grade science course "Our Food" unit. The variables related to the effect of the philosophy for children approach on primary school students' attitudes towards science and problem-solving skills were examined meticulously, and the findings obtained were discussed with the results of similar studies in the literature.

The study concluded that the Philosophy for Children Approach's prescribed activities and practices, rather than those mandated by the 4th grade science course curriculum, significantly enhanced the students' attitude towards science. In his or her attitude towards science, the individual emphasizes his or her characteristics such as thinking, questioning, criticizing, and curiosity (Munby, 1983). Factors such as teacher characteristics, classroom environment, motivation for success, and method used are all effective in developing students' attitudes towards science (Osborne, 2010). The method used should attract students' attention and encourage them to question and think (Wolfinger, 2000). Nhase (2019) examined similar studies and concluded that practices based on inquiry and philosophical methods increased students' interest in science teaching. In addition, Ventsta (2019) concluded that the Philosophy for Children Approach improved cognitive skills and positively increased students' interest in and attitudes towards the course. It is clear that there was a noticeable change in children's attitudes towards science, especially in the last sessions of the implementation. It was observed that the students

invited the teacher and their friends to the discussions, presented examples contrary to each other's ideas, and made efforts to continue questioning and criticizing. Jones (2016) also produced results that corroborate our findings. In his research on the science and technology course, he found that the philosophy for children approach influenced students' cognitive and social development, heightened their interest in the course, and motivated them to participate more actively. Teachers should develop and implement new techniques to foster positive attitudes among students towards science (Hasan, 1985). In his study on philosophy for children, Kaya (2020) also concluded that students found the course interesting, wanted to participate more, and developed positive attitudes towards the course. The study demonstrated the effectiveness of the Philosophy for Children Approach, a new practice in our country, in enhancing students' attitudes towards science.

The study concluded that using the activities and practices prescribed by the Philosophy for Children Approach was more effective in increasing problem-solving skills than using the activities prescribed by the 4th grade science curriculum. It is very important for children to acquire problem-solving skills in preschool and primary school. Education aimed at developing problem-solving skills will also improve students' mental skills (Kesicioğlu, 2015). In the process of gaining problem-solving skills, the student is in a position of active thinking, questioning, and criticizing (Özyürek, Çetin, Şahin, Yıldırım, & Evirgen, 2018). Therefore, the finding that the Philosophy for Children Approach positively influences problem-solving skills is significant. Upon examination of the literature supporting our findings, Tok and Sevinç (2010) concluded that their thinking skills training program significantly enhanced the problem-solving skills of prospective preschool teachers. Gillies, Nichols, and Burgh (2011) concluded that the collaborative philosophy for children approach improved reasoning and problem-solving skills. In addition, Seifi, Shaghagni, and Kalantari (2011) concluded that the Philosophy for Children Approach affected students' self-esteem and problem-solving skills in their study with middle school students. Erfani, Karimi, Shobeiri, and Atar (2014) conducted an experimental study at the middle school level and concluded that the Philosophy for Children Approach significantly influenced students' problem-solving skills and creativity. Gur and Kocak (2018) applied the thinking education program they prepared to children in the 5–6 age group. ThThe results of their thinking training program for children showed a positive impact on students' social problem-solving skills, which aligns with our own findings. addition, Erkol, Saralar-Aras, and Akan (2022) found that the Philosophy for Children Approach had positive results on students' problem-solving skills. According to Çoban (2014), problem-solving skill is the ability to produce solutions to problems encountered by the individual based on past experiences. Genç (2012), Özsoy and Kuruyer (2012), and Yeşilova (2013) described the problem-solving process as the individual's realization of the problem, entering the discussion process to determine the solutions, and determining the most appropriate solution. These conditions required for problem-solving skills are also among the achievements and objectives of the Philosophy for Children Approach (Lipman, 1988; Matthews, 2000). Examining the science curriculum reveals that students use their experiences to produce solutions to the problems they encounter. "They

apply the most appropriate solution by comparing the solutions" (M.E.B., 2018). Here, practices that will enable children to acquire the process of solving the problems they encounter in their daily lives and in their relationships with their friends are aimed at. In addition, science, questioning, reasoning, and logic, which are the basic functions of the science course, are also included in the subjects of philosophy (Çayır, 2021). The Philosophy for Children Approach achieves these outcomes by encouraging correct thinking, capturing differences in problem-solving, reasoning, and making generalizations (Lipman, Sharp, & Oscanyan, 1980).

The primary goal of using the Philosophy for Children Approach in education is to capture certain inferences by identifying similarities and commonalities with actions such as reading, understanding, questioning, and discussion (Direk, 2008). The philosophical education to develop thinking skills includes correct thinking, logical reasoning, generalizations, and communicating (Lipman, 1988). The child who discovers the ability to communicate will gradually increase his or her self-confidence and begin to overcome problems on his or her own (Bingham, 2004). When an individual begins to solve problems, he or she may seek specific guidance and environments where he or she can cooperate while implementing the solution process he or she has designed in his or her mind (Britz, 1993). The Philosophy for Children Approach also includes group activities that students need while using their reasoning skills, a free environment where they can have discussions, and most importantly, practices that keep their sense of curiosity alive (Cevizci, 2012). As a result of Philosophy for Children education, students have realized that thinking is not a difficult process, that it is different from scientific inquiry, that there is no single answer, that everyone can philosophize freely, and that they can find answers to all their questions without any coercion. In addition to all of these, Philosophy for Children education also contributes significantly to the development of students' higher-order thinking skills and their ability to think abstractly (Worley, 2019). It can be said that the Philosophy for Children approach, in which applied activities are carried out, is effective in developing students' problem-solving skills as well as other higher-order thinking skills. As a matter of fact, it can be said that Philosophy for Children practices are effective in developing students' characteristics such as asking questions and curiosity, thinking by making connections, questioning, result-oriented thinking, and developing higher-order thinking skills (Acar, 2022; Akıncı-Demirbaş, 2022; Akan, 2022; Gürdal, 2022; Taş, 2017; Mıllet & Tapper, 2012; Taş, 2017).

4.1. Recommendations

- The study concluded that the philosophy for children approach had a positive impact on students' attitudes towards science. Therefore, further studies can be conducted to examine its effect on student attitudes in different courses.
- The study concluded that the philosophy for children approach significantly enhanced students' problem-solving abilities. In order to generalize this result, studies can be conducted in different courses and at different grade levels.

- The study confines itself to the "Our Food" unit within the science course. However, when the results of the PBTS, PSI, and qualitative analysis are examined, it can be suggested to apply the philosophy for children approach in different units of the science course.
- Examining the literature reveals a scarcity of mixed studies comparable to this one. The number of mixed studies to be conducted for the presence of the philosophy for children approach in the education process should be increased.
- The study examines the effect of the Philosophy for Children (P4C) approach on primary school students' attitudes towards science and problem-solving skills. The study examines the impact of the Philosophy for Children approach on language and communication skills in Turkish lessons, responsibility and equality in life science lessons, and the concepts of rights and law in social studies lessons.
- Applications such as creating concept maps, story completion, thought experiments, and evaluation with facial expressions can be beneficial for researchers. Let's engage in these activities and evaluate their effectiveness.
- The philosophy for children approach can be combined with the curricula of various courses, or it can be implemented as a single course.
- The philosophy for children approach can be used to develop problem-solving skills in primary schools.

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GENİŞLETİLMİŞ TÜRKÇE ÖZET

ÇOCUKLAR İÇİN FELSEFE (P4C) YAKLAŞIMININ İLKOKUL ÖĞRENCİLERİNİN FENE YÖNELİK TUTUM VE PROBLEM ÇÖZME BECERİSİNE ETKİSİ

GİRİŞ

Kişilerin dış çevreyle olan ilişkilerinde, yaşamı anlamlandırmalarında felsefi düşünme ve felsefi bakış açısına ulaşma önemli bir yere sahiptir. Felsefi düşünmenin bu denli önemli olduğu bir dönemde, felsefi bakış açısı kazandırmaya hayal gücümüzün en etkili olduğu dönem olan çocukluk döneminde başlamamız gerekmektedir (Sormaz-Öğüt, 2019). Felsefi okul eğitiminin küçük yaşlarda başlaması gerektiği kaçınılmaz bir gerçektir (Akkocaoğlu-Çayır, 2015; Direk, 2008; Sormaz-Öğüt, 2019). Çocuklar için Felsefe düşüncesi ilk kez 1953 senesinde Karl Jaspers tarafından vurgulanmıştır. Alman dilinde ‘’Kinderphilosophie’’ veya ‘’Philosophie für Kinder’’ olarak kullanılan kavram İngilizcede ‘’ Philosphy for Childer’’ olarak söylenmiştir. Bu kavram Türkçeye ise; ‘’çocuk felsefesi ‘’ ya da ‘’Çocuklar için Felsefe ‘’ olarak aktarılmıştır (Karakaya, 2006). Çocuklar için felsefenin temeli ise 1960’ da ABD de Matthew Lipman tarafından atılmıştır (Soysal ve Pullu, 2020). Lipman “Philosophy For Children-P4C” olarak isimlendirmeyi uygun görmüştür. Felsefenin daha çok çocuklarla yapılabileceğini söyleyenler ise “Philosophy With Children-PwC”(Çocuklar ile Felsefe) kavramını kullanmışlardır (Mutlu, 2010). Çocuklara tek başlarına nasıl düşünebileceklerini öğretmek ve bu konuda onlara yardımcı olmak, çocuklar için felsefenin ana amaçları arasında yer alır (Lipman, Sharp, ve Oscanyan, 1980).Çocuklar için Felsefe yaklaşımının kurucusu Lipman’ın hedefi çocukları birer filozof ya da felsefe öğrenen bireylere dönüştürmekten ziyade; çocukları daha çok düşünen, daha çok eleştiren ve düşündüklerini yansıtabilen bireyler haline getirmektir (Karakaya, 2006).Çocuklara düşünme becerisi kazandırmanın en etkili yollarından biri olan Çocuklar için Felsefe çalışmaları büyük öneme sahiptir (Direk, 2008).

Fen bilimleri öğretim programı mühendislik becerileri, yaşam becerileri ve bilimsel süreç becerilerini kişinin özelde sahip olması gereken özel hedefler olarak belirler (Aslan, Ertaş-Kılıç, ve Kılıç, 2016). Yaşam becerileri fen bilimleri eğitim programında; analitik düşünme, yansıtıcı düşünme, takım çalışması, yaratıcı düşünme,girişimcilik ve iletişim olarak sıralanmıştır (MEB, 2018). Bilimsel süreç becerileri ise fen bilimleri öğretim programında; tahmin, sınıflama, deney yapma, sonuçlara ulaşma, tümevarım ve tümdengelimdir. Öğrenci bir bilim adamı gibi çalışarak bilimsel bilgiyi sorgular, araştırır ve ulaştığı sonuçları yapılandırarak anlamlandırır (Aslan, Ertaş-Kılıç, ve Kılıç, 2016).Fen bilimleri öğretim programının ulaşmak istediği amaçlarla Çocuklar için Felsefe eğitiminin sağladığı amaçlar birbiriyle uyuşmaktadır.

Yapılan araştırmalar incelendiğinde 4. sınıf fen bilimleri dersinde Çocuklar için Felsefe yaklaşımının tutuma ve problem çözme becerisine etkisini inceleyen çalışmalara rastlanmamıştır. Bu araştırma Çocuklar için Felsefe etkinliklerinin 4.sınıf öğrencilerinin fene yönelik tutum ve problem çözme becerisine etkisini açıklayarak alana katkı sağlayacaktır.

YÖNTEM

Bu araştırma Çocuklar için Felsefe (P4C) Yaklaşımının ilkokul öğrencilerinin fene yönelik tutum ve problem çözme becerisine etkisini belirlemek amacıyla karma yöntem kapsamında olan açıklayıcı sıralı desen kullanılarak yürütülmüştür. Karma yöntem; nitel ve nicel verilerin toplanarak her iki desenin birlikte kullanılmasıdır (Creswell, 2008; Johnson ve Christensen, 2004). Araştırmanın nicel boyutunda; ön test-son test kontrol gruplu yarı deneysel desen kullanılmıştır. Araştırmanın nitel boyutunda; ulaşılan verilerin derinlemesine incelenmesi ve detaylı bir şekilde analizi yapılacağı için durum çalışması kullanılması tercih edilmiştir. Çalışmada karma araştırma yöntemi kullanıldığından nicel ve nitel bölümlerde farklı veri toplama araçları kullanılmıştır. Çalışmanın nicel kısmında veri toplamak amacıyla fene yönelik tutum ölçeği ve problem çözme envanteri kullanılmıştır. Araştırmanın nitel boyutunda veri toplama araçları olarak gözlem, doküman incelemesi ve görüşme teknikleri kullanılmıştır. Creswell (2008)'e göre nitel araştırma yapanlar, kullanacağı verileri tek bir kaynaktan toplamak yerine mülakat, doküman, gözlem ve sesli-görsel bilgi kaynaklarından yararlanırlar. Merriam (2013) ise güvenirliği sağlamada; üçgenleme yöntemi yapılarak iki ya da daha fazla veri toplama yöntemi kullanılarak toplanan verilerin (görüşme-doküman-gözlem), daha güvenilir ve daha kesin sonuçlara ulaşabilmede etkili olduğunu belirtmiştir. Araştırma 2022-2023 eğitim-öğretim yılı içinde ilkokul 4. Sınıf Fen Bilimleri dersi "Besinlerimiz" ünitesi kapsamında öğretim programına uygun olarak 7 hafta olarak planlanmıştır. İlk hafta kontrol ile deney gruplarına; problem çözme envanteri ve fene yönelik tutum ölçekleri uygulanmıştır. Beş hafta boyunca ise; kontrol grubunda 4. Sınıf Fen Bilimleri dersi öğretim programının ön gördüğü etkinlikler yapılandırmacı yaklaşıma uygun olacak şekilde uygulanmıştır. Kontrol ve deney grupları arasında fene yönelik tutum ve problem çözme becerileri arasında anlamlı bir fark olup olmadığını belirleyebilmek amacıyla SPSS 22.0 paket programı kullanılmıştır.

Araştırmanın nitel bölümünde araştırmacının gözlem sonuçlarından, öğrencilerin tutacağı uygulama günlüklerinden, öğrencilerle yapılacak olan yarı yapılandırılmış görüşmelerden elde edilecek olan verilerin analiz edilmesinde içerik analizi yöntemi kullanılmıştır.

SONUÇ ve ÖNERİLER

Araştırmada Çocuklar için Felsefe (P4C) Yaklaşımının ilkokul öğrencilerinin fene yönelik tutum ve problem çözme becerisine etkisinin belirlenmesi amaçlanmıştır. Bu amaç doğrultusunda çocuklar için felsefe uygulamaları hazırlanmış ve 4. sınıf fen bilimleri dersi "Besinlerimiz" ünitesinde kullanılmıştır. Çocuklar için felsefe yaklaşımının ilkokul öğrencilerinin fene yönelik tutum ve problem çözme

becerisine etkisine ilişkin değişkenler titizlikle incelenmiş ve elde edilen bulgular alan yazında yer alan benzer araştırma sonuçları ile tartışılmıştır.

Araştırmada Çocuklar için Felsefe Yaklaşımının öngördüğü etkinlikler ve uygulamalar kullanılarak yürütülen öğretimin, 4. Sınıf fen bilimleri dersi müfredatının istediği etkinlikler ile yapılan öğretime göre fene yönelik tutumu pozitif yönde arttırmada daha çok etki yarattığı sonucuna ulaşılmıştır. Benzer çalışmalar incelendiğinde; Nhase (2019) yaptığı çalışmasında sorgulamaya ve felsefi yöntemlere dayalı uygulamaların fen öğretimine yönelik öğrencilerin ilgilerinin arttığı sonucuna ulaşmıştır. Ayrıca Ventısta (2019) bilim dersinde uyguladığı çalışmasında Çocuklar için Felsefe Yaklaşımının bilişsel becerileri geliştirdiği ve öğrencilerin derse yönelik ilgi ve tutumlarını olumlu yönde arttırdığı sonucuna ulaşmıştır. Özellikle yapılan uygulamanın son oturumlarında çocukların fene yönelik tutumlarında fark edilebilir bir değişimin olduğu açıktır. Öğrencilerin, öğretmeni ve arkadaşlarını da tartışmalara davet etmeleri, birbirlerinin fikirlerine zıt örnekler sunmaları, sorgulamaya ve eleştirmeye devam etme çabaları gözlenmiştir. Jones (2016) da ulaştığımız sonuçları destekler nitelikte sonuçlara ulaşmıştır.

Araştırmada Çocuklar için Felsefe Yaklaşımının öngördüğü etkinlikler ve uygulamalar kullanılarak yürütülen öğretimin, 4. Sınıf fen bilimleri dersi öğretim programının ön gördüğü etkinlikler ile yürütülen öğretime göre problem çözme becerilerini arttırmada daha çok etkili olduğu sonucuna ulaşılmıştır. Ulaştığımız sonuçları destekler nitelikte literatürde yapılan çalışmalar da incelendiğinde; Tok ve Sevinç (2010) okul öncesi eğitimde yer alan aday öğretmenlerle yaptıkları araştırmada yaptıkları düşünme becerileri eğitim programının problem çözme becerilerini anlamlı olarak arttırdığı sonucunu elde etmişlerdir. Gillies, Nichols ve Burgh (2011) ise yaptıkları çalışmada işbirliğine dayalı Çocuklar için Felsefe Yaklaşımının akıl yürütme ve problem çözme becerilerini geliştirdiği sonucuna ulaşmışlardır. Ayrıca Seifi, Shaghagni ve Kalantari (2011) ortaokul öğrencileriyle yaptıkları çalışmada Çocuklar için Felsefe Yaklaşımının öğrencilerin özsaygı ve problem çözme becerilerini etkilediği sonucuna ulaşmışlardır. Erfani, Karimi, Shobeiri ve Atar (2014) ortaokul düzeyinde yaptıkları deneysel çalışmada Çocuklar için Felsefe Yaklaşımının öğrencilerin problem çözme becerileri ve yaratıcılıkları üzerinde anlamlı bir etki yaptığı sonucuna ulaşmışlardır.

Öneriler

1. Araştırmadan ulaşılan sonuçlar neticesinde çocuklar için felsefe yaklaşımının öğrencilerin fene yönelik tutumlarını olumlu yönde arttırdığı sonucuna ulaşılmıştır. Bundan dolayı farklı derslerde de öğrenci tutumlarına yönelik etkisini incelemek için başka çalışmalar yapılabilir.
2. Yapılan çalışmada çocuklar için felsefe yaklaşımının öğrencilerin problem çözme becerilerini olumlu yönde arttırdığı sonucuna ulaşılmıştır. Bu sonucun genele yayılabilmesi için farklı derslerde ve farklı sınıf seviyelerinde de çalışmalar yapılabilir.
3. Araştırma fen bilimleri dersinin "Besinlerimiz" ünitesi ile sınırlıdır. Ancak FYTÖ, PÇE ve nitel analiz sonuçları incelendiğinde çocuklar için felsefe yaklaşımının fen bilimleri dersinin farklı ünitelerinde de uygulanması önerilebilir.

4. Literatür incelendiğinde yapılan araştırmaya benzer karma araştırmaların az olduğu görülmektedir. Çocuklar için felsefe yaklaşımının eğitim öğretim sürecinde bulunmasına yönelik yapılacak karma araştırmaların sayısı arttırılmalıdır.

EJAES

JOURNAL OF ADVANCED EDUCATION STUDIES

İleri Eğitim Çalışmaları Dergisi

6(2): 27-45,2024

PRIVATE EXPENDITURES OF TEACHER CANDIDATES STUDYING AT MERSIN UNIVERSITY, TÜRKİYE

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Geliş Tarihi/Received:06.10.2024 Elektronik Yayın / Online Published:15.12.2024

DOI: 10.48166/ejaes.1562386

ABSTRACT

Private higher education expenditures constitute one of the factors determining higher education demand. In this study, it is aimed at determining the level and types of teacher candidates' private expenditures, and the factors influencing the probability of making higher private expenditures. The sample of the study was drawn among the students enrolled in Mersin University Faculty of Education in 2013, 2016, 2019, and 2022. A model comprising five factors influencing the probability of making private expenditures higher than the average was developed. In this model, educational background, family background, other cost-related variables, higher education aspirations, and future teaching labor market expectations were included as determining factors. Data were collected by a questionnaire developed by the researcher. The model was estimated by logistic regression analysis. Results show that variables representing all five factors have a significant impact on the probability of making higher private expenditures. It is concluded that the model has the power to explain the problem of the study.

Keywords: Higher education demand, cost of education, teacher training students, financing of higher education.

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ÖĞRETMEN ADAYLARININ KİŞİSEL HARCAMALARI: MERSİN ÜNİVERSİTESİ ÖRNEĞİ

ÖZET

Kişisel eğitim harcamaları, yüksek öğretim talebini belirleyen faktörlerden biridir. Bu çalışmada öğretmen adaylarının kişisel harcamalarının düzey ve türleri ile ortalamadan yüksek kişisel harcama yapma olasılığını etkileyen faktörlerin belirlenmesi amaçlanmıştır. Araştırmanın örneklemi 2013, 2016, 2019 ve 2022 öğretim yıllarında Mersin Üniversitesi Eğitim Fakültesinde öğrenim gören öğrenciler arasından seçilmiştir. Ortalamadan yüksek kişisel eğitim harcaması yapma olasılığını etkileyen faktörlerin tahmin edilmesi için bir model geliştirilmiştir. Bu modelde öğrencinin eğitim geçmişi, aile geçmişi, diğer maliyetle ilişkili değişkenler, yükseköğretim ile ilgili arzular ve gelecekteki öğretmen işgücü piyasasından beklentiler belirleyici faktörler olarak yer almaktadır. Veriler araştırmacı tarafından geliştirilen bir anket aracılığıyla toplanmıştır. Model lojistik regresyon analizi ile tahmin edilmiştir. Sonuçlar beş faktörü de temsil eden değişkenlerin daha yüksek kişisel harcama yapma olasılığı üzerinde anlamlı etkisinin olduğunu göstermektedir. Modelin çalışmanın problemini açıklamada bir gücü olduğu sonucuna varılmıştır.

Anahtar kelimeler: Yükseköğretim talebi, eğitimin maliyeti, öğretmen yetiştirme öğrencileri, yükseköğretimin finansmanı.

1. INTRODUCTION

One of the factors determining students' higher education demand and major choices is private cost of education. Private cost includes direct and indirect costs. Indirect costs are usually defined by forgone earnings during higher education. Direct costs comprise private expenditures on accommodation, transportation, tuition etc. Low-income students need grant aids and credit loans to cover these expenditures. In Türkiye, most of the teacher-training students apply for scholarships and credits provided by the government.

In Western countries changes in cost of higher education have significant effects on students' future wealth and depend mostly on their families' wealth. In the long run college attendance in the USA has been driven by changing real costs and rising earnings premium (Donovan & Herrington, 2019). During the last decades, college costs have increased while college attainment and relative earnings of college graduates have also increased (Jones & Yang, 2016). Many students value consumption amenities such as activities, sports, and dormitories (Jacob et al., 2018). Willingness to pay for these amenities depend on families' socio-economic status (SES). Financial support from parents affects higher education enrollment decisions (Flaster, 2018). Income elasticity of education expenditures greater for low SES families, especially in developing countries (Jenkins et al., 2019). Lower costs and greater geographical distribution were found increasing higher education enrollments of low SES secondary school graduates in Italy (Pigini & Staffolani, 2016).

Tuition fees are one of the most important factors affecting students' decisions regarding higher education. Tuition's impact can be observed on high school graduates and enrolled higher education student for enrollment and degree completion (Bietenbeck et al., 2023). Tuitions are increasing in the USA and UK and many other countries. The reasons include rapid expansion in higher education, increase in costs of institutions and decline in per-student government resources allowed to higher

education institutions. The great share of the increasing costs was born by students in the USA (Dearden et al., 2008). Increases in tuitions have many adverse effects, because many low SES students finance them by loaning. In the USA, it was observed that rising income inequality has increased tuitions and depressed college attendance (Cai & Heathcote, 2022). At the other side of the coin, loan debt has an income inequality effect for college graduates too (Elliott & Lewis, 2015).

Private opportunity cost involves in forgone earnings by attending higher education instead of working for pay and/or self-employment. However, some students still prefer working during enrolment, leading to lower forgone earnings. Student work might be part-time or full-time. Additional grant aids for low-income students may reduce the likelihood of student work (Broton, Goldrick-Rab, & Benson, 2016). Student employment causes a trade-off problem concerning student time spent on working and studying. Student work may affect educational decisions and performance adversely (Neyt et al., 2019). It was shown that increasing financial grants partially offsets student employment (Broton et al., 2016). On the other hand, income derived from part-time work reduces the opportunity cost for higher education students.

After the pandemic, inflationary periods experienced throughout the world caused increases in prices of education goods and services and deterioration in income distribution. An increase in cost of higher education usually leads to an increase in student loans for low- and middle-income students. In recent years four-year college students have experienced such obstacles (Brint, 2022). If not accompanied by an increase in government subsidies gaps in higher education demand and completion rates among different socioeconomic groups may grow to a large extent. For private universities creating alternative financial resources is an important issue, because, otherwise they may lose some of their customers.

In some countries governments seek to charge high tuitions while providing high support and some others do apply low tuitions and support (Jongbloed & Vossensteyn, 2016). Türkiye take place among the latter group. For regular students no tuition is applied since 2010. Evening shift students, open education students and those who are late to complete degree were charged relatively small amounts in public universities. Therefore, tuition does not constitute a big portion of higher education cost in Turkish public university context. However, international students and private university students may face higher tuition fees (Global Academia, 2024). In recent years, country experienced economic troubles characterized by increasing exchange rates with high inflation caused by country's "domestic fundamentals" described by institutional behaviors (Gürkaynak et al., 2023). Under these bad conditions, accommodation and travel costs have risen while real incomes for fixed income groups have declined. As a result, dropping-out tendencies of university students have been increasing (Dündar & Bülbül, 2022).

This study aims to determine the level and types of private educational expenditures of teacher candidates. It also aims at finding out the variables which have impact on the probability of making higher private higher education expenditures. How economic conjectures affected cost of teacher

training in Türkiye can be analyzed within the framework developed in this study. Results of the study might shed light on how private cost of education for prospective teachers during higher education changes over time during 2013 and 2022. In the following section information on the method of the study is presented. Then results are tabulated and discussed. Lastly, some conclusions and recommendations were derived.

2. METHOD

This study is quantitative, descriptive one. It involves in collecting and analyzing data to reveal types, levels and differentiating factors related to teacher candidates studying at seven programs in Faculty of Education. It uses data collected by a questionnaire developed by the researcher. Sample, data collection, variables and data analysis are presented below.

2.1. Model of the Study

The factors influencing this probability of making higher private higher education expenditures were determined as, educational background, family background, cost related factors, higher education aspirations and labor market expectations. Therefore, a model like the Equation (1) below was developed.

(1) $PE_{it} = b_0 + b_1ED_{it} + b_2FM_{it} + b_3PC_{it} + b_4AS_{it} + b_5EE_{it} + e_{it}$

$i = 1, \ldots, n; t = 2013, 2016, 2019, 2022$

In this model, dependent variable (PE) is probability of making private higher education expenditures over average. ED represents students' educational background variables and FM is for family background variables. Influences of PC (other private cost variables), students' higher education aspirations (AS) and future earnings and employment expectations (EE) were also considered.

2.2. Sample of the Study

Sample and population of study comprises first and fourth grade students studying at Mersin University Faculty of Education in 2013, 2016, 2019 and 2022. First fourth grade students were included in the sample because it might allow to analyze differences between two groups. Administration of data collection tool was started in 2012-13 Spring Semester and repeated three times more within a nearly decade long period. Therefore, some first-grade students were probably included in the sample in the following application as fourth graders. However, they were not specifically recognizable, because data were collected anonymously at a voluntary basis. More than half of the targeted population participated in the sample in each application. Numbers of participants by program type and registered students are presented in Table 1.

Table 1. Sample characteristics: Numbers of participated students.

Program	Numbers of Participants			
	2013	2016	2019	2022
(1) Guidance and Psychological Counseling (GPC)	78	97	74	84
(2) English Language Teaching (ELT)	123	109	73	101
(3) Turkish Language Teaching (TLT)	83	84	88	74
(4) Primary Classroom Teaching (PCT)	111	105	86	61
(5) Pre-Primary Teaching (PPT)	138	138	138	100
(6) Primary Mathematics Teaching (PMT)	73	83	99	84
(7) Primary Science Teaching (PST)	61	74	76	70
TOTAL	657	690	624	574
Registered Students	1114	1098	1179	1113
% ((Participated / Registered) x 100)	59	63	53	52

Note: Number of registered students was obtained from Mersin University Registrar and represent the sum of the numbers of first-year and fourth year students who were enrolled in undergraduate programs of Faculty of Education.

2.3. Data and Variables

Data were collected on April 2013, 2016, 2019 and 2022 directly (face-to-face) from voluntary students registered at Mersin University Faculty of Education through application of a questionnaire developed by researcher depending on the literature. Although the questionnaire comprises more questions used for other manuscripts, the categorical variables defined based on the collected data. Variables used in this study are shown in Tables 2, 3, 4, 5 and 6.

Table 2. Educational background variables

Variable	Categories
Registered program	Major type: GPC, ELT, TLT, PCT, PPT, PMT, PST (Table 1)
Grade	I of IV
Shift of education	Day or evening
Type of secondary education completed	Selective general high school, general high school, teacher training high school, vocational high school, private high school, others
University entrance examination	Rank of the program entered in the choice list, number of years to enter the program, exam scores
Academic achievement	Previous semester and cumulative average

Table 3. Family background variables

Variable	Categories
Gender	Female or male
Family residence	Provincial center, district, village
Family size	Number of individuals
Siblings at school	Number of siblings at school
Maternal education level	Higher education, secondary education, below secondary, no education
Paternal education level	Higher education, secondary education, below secondary, no education
Maternal employment status	Employed at public, private, not employed, other
Paternal employment status	Employed at public, private, not employed, other
Family income	Annual family income TL

Table 4. Personal expenditures and other cost related variables

Variable	Categories
Type of expenditure	Clothing, accommodation, food, textbook, activities, tuition, transportation, other
Level of expenditure	Monthly personal expenditure in TL
Student work	Employed for pay? Yes or no
Student work income	If yes how much do you earn per month
Grant and/or loan	Do you receive: Yes or no
Source	Government, university, private, other
Amount of grant and loan	Total monthly amount in TL
Loan for tuition	Do you receive: Yes or no
Application for tuition loan	If no, have you ever applied for?
Source of expenditure	How do you finance your expenditures? Family, work, grant/loan
Willingness to pay tuition for current program	If it was required, how much have you been willing to pay for the program you are currently studying at? Or leave?
Willingness to pay tuition for most wanted program	How much have you been willing to pay If you had been placed at your first choice

Table 5. Higher education aspirations

Variable	Categories
Further education	Are you planning to apply for graduate education
Desire to study at another university	If you had had sufficient grant, at which university do you want to study? At a public university in İstanbul, Ankara, or İzmir; at a private university in İstanbul, Ankara, or İzmir; at the university where I am, other.
Desire to study at another program	If you had had sufficient grant, at which program do you want to study? Business, economics; arts and science; engineering, fine arts and conservatory; program I am studying at; other (medicine, law, counseling (for those who are not in this program), physical therapy and rehabilitation, etc.)

Table 6. Employment and earning expectations

Variable	Categories
Employment expectation	After graduation; as teacher at public schools, private school, other teaching, other than teaching; within a year, next year, later, never.
Monthly earning expectation	At the start of profession; in TL
Annual earning expectation	within the start year, within 5 years, within 10 years

2.4. Data Analysis

Data related to teacher candidates' education expenditures were analyzed by taking averages and percentages. Average education expenditures were computed by attributing mean values and then taking averages. Data related to expenditure types were analyzed by taking percentages. Analysis for revealing factors determining probability of making higher private expenditures carried out by logistic regression. For this non-parametric analysis, observations related to dependent variable taking value higher than mean were assigned 1, and 0 if the value was equal to or less than mean. By doing this conversion, effect of inflation was eliminated in order to make data comparable for different years.

Data were pooled and year dummies were created to find out structural changes among years of data gathering. Dummies were also generated for other monetary variables, i.e., family income, student work income, willingness to pay tuition, and earning expectations. These dummies enabled data pooling but reduced variation in independent variables. Lower variation in data lead to lower goodness-of-fit statistics. However, in logistic regression models R^2 observations are usually lower, because they represent rather relative goodness-of-fit (Christensen, 1990, p. 259). For absolute goodness-of-fit *Hosmer-Lemeshow test* was used. This test has an asymptotic distribution that takes χ^2 probabilities into consideration, and the model was accepted as significant if this probability is lower than 0,05.

3. RESULTS

Level of teacher candidates' higher education expenditures and related statistics over years are shown in Table 7.

Table 7. Teacher candidates' higher education expenditures and related statistics

	2013	2016	2019	2022
Average monthly private expenditure (USD)[1]	166	125	68	39
Student work (%)	15,4	11,9	10,8	12,9
Average monthly income from student work (USD)[1,2]	215	155	88	44
Students receiving scholarship and/or credit (%)	76,7	75,4	74,9	73,5
Students receiving scholarship (%)	41,2	35,7	33,3	37,8
Average monthly scholarship or credit (USD)[1]	161	144	87	110
Financing of personal expenditures (%)				
Family	69,7	63,9	62,2	67,1
Student work	14,0	11,9	10,0	12,5
Scholarship and/or credit	63,8	63,6	65,6	62,4
Willingness-to-pay for the major enrolled (USD)[1,3]	1067	631	317	162
Willingness-to-pay for the major of first choice (USD)[1,3]	462	317	196	93
GDP per capita by current prices (USD)[4]	12.582	10.964	9.208	10.659

Notes: 1) Data were collected in TRY and converted to USD by monthly purchasing rates published by TCMB (2024). 2) Calculated only for working students. 3) Students were asked the maximum amount of tuition they would have willing to pay if it had been charged. 4) Obtained from TÜİK (2024).

Reported levels of monetary variables (Average monthly private expenditures, average monthly income from student work, average monthly scholarship and credit, and willingness to pay tuition) have been rising in TRY units. It was observed that levels of monetary variables have been declining when they are converted in USD units (Table 7). When they are compared to per capita GDP their amounts are very low. Percentages of teacher candidates receiving scholarship and/or credit have been rather stable. Scholarship/credit is an important source of financing teacher training together with family resources. Student work and its contribution to private financing of education is above %10.

Percentages of expenditure types incurred by teacher candidates who ranked the importance of each item are shown in Table 8. The first percentages show the probability of an expenditure type to be

in top five, and percentages in the paratheses are the probability of an item to be most important type of expenditure.

Table 8. Weights of teacher candidates' expenditure types (%)

Expenditures on	2013	2016	2019	2022
Clothing	80,2 (18,4)	79,0 (17,0)	75,9 (15,6)	76,5 (12,9)
Accommodation	63,6 (37,1)	63,9 (38,7)	63,7 (39,7)	61,5 (34,2)
Food	90,3 (16,0)	90,4 (18,1)	92,4 (24,6)	92,3 (31,5)
Textbook	59,2 (3,3)	73,8 (7,0)	71,6 (6,3)	61,7 (6,5)
Activities	58,8 (3,7)	63,0 (3,3)	56,3 (3,5)	55,4 (3,0)
Tuition	28,9 (7,9)	26,2 (4,5)	18,1 (1,7)	22,5 (1,6)
Transportation	80,2 (12,3)	80,4 (8,8)	76,5 (7,0)	80,1 (8,9)
Other	9,0 (1,4)	13,0 (2,0)	8,6 (1,1)	9,9 (0,1)

Note: Students were asked to mark first 5 important items by the rank of importance. Above figures show probability scores. First percentages show the probability that the item mentioned in top 5. Percentages in parentheses show the probability that the item mentioned first.

It is observed from Table 8 that relative importance of food has been increasing while that of tuition has been decreasing. Importance of clothing has been decreasing to an extent as well. Relative importance of other expenditures types has not been changed to a large extent over the period comprising 2013 to 2022.

The probability of spending higher than average was determined by taking averages of declared private expenditures and generating a dummy variable by assigning 1 to higher-than-average observations and 0 to others. Logistic regression analysis was carried out regressing variables defined in Section 2.3 on probability of making higher private expenditure (PE). The best estimated model obtained by adding significant independent variables is shown Table 9.

Table 9. Logistic regression results for teacher candidates' private expenditures

Probability of higher private expenditure	B	S.E.	Wald	df	Sig.
Constant	-4,112	,256	257,465	1	<,001
PMT Major	-,415	,140	8,785	1	,003
Grade (I-IV, IV=1)	,487	,090	28,994	1	<,001
Gender (male=1))	,749	,096	60,857	1	<,001
Maternal education (high school and higher=1)	,380	,094	16,469	1	<,001
Maternal employment (yes=1)	,317	,132	5,825	1	,016
Family income (higher=1)	,218	,102	4,589	1	,032
Student work (yes=1)	,288	,057	25,139	1	<,001
Earnings from student work (higher=1)	,235	,027	74,106	1	<,001
Family support (yes=1)	,927	,103	80,337	1	<,001
Willingness to pay tuition (higher=1)	,322	,095	11,474	1	<,001
Aspiration for graduate education (yes=1)	,213	,091	5,507	1	,019
Expected monthly earning (higher=1)	,415	,092	20,195	1	<,001
N				2545 (0=1612; 1=933)	
-2 log likelihood				2964,848	
Cox & Snell R square				,139	
Nagelkerke R square				,190	
Hosmer and Lemeshow test				χ^2=19,919; df=8; Sig.=,011	

In Table 9, it is observed that some variables appointed to all five factors (ED, FM, PC, AS, EE) have some contributions to the probability of PE. The model in Table 9 is jointly significant as Hosmer and Lemeshow test indicates. Within ED variables studying in PMT has a negative effect while grade has a positive effect on PE. This means that being a fourth-year student increases, while being a math teaching student decreases the probability of spending more. Gender is considered as a variable related to family cultural capital and included in FM variables. Together with gender maternal education, maternal employment and family income have positive relationship with PE. Therefore, being male, having a high school or more educated mother, having an employed mother, and having a higher-than-average family income increases the probability of PE.

Among other cost related variables (PC), student work and higher-than average income from student work have positive effects on PE. Because of the very low numbers and amounts of tuition applied in Turkish public universities, an alternative variable was considered: willingness to pay tuition. Higher-than average willingness to pay tuition for enrolled program has a positive effect on probability of PE. Among AS variables, aspiration for graduate education has an increasing effect on probability of spending more. Finally, among EE variables, higher-than-average expected monthly earnings in the future increase the probability of PE.

4. DISCUSSION

Turkish economy has experienced increasing exchange rate and inflation dynamics, which caused a substantial increase in living costs (Gürkaynak et al., 2023). Food, accommodation and transportation prices increased substantially, which may have reflections on student behaviors as well. On the other hand, private expenditures of teacher candidates have been observed declining in USD terms (Table 7), although rising in TRY. Some of the decreases might be attributed to increasing exchange rates, while some remaining decreases should have been related to real expenditures. Decreases in real expenditures might be a result of declining household income, as inflation causes decline in low SES families' income. Teacher candidates are typically from low SES families in Türkiye. So decreases in private education expenditures might be a reflection of their comparative disadvantage.

Other studies observed private expenditures of higher education students in Türkiye focused on families' relative burden as well. Private costs might constitute a share in unit costs higher than the share of public (Ekinci, 2009). Increasing cost born by households leads to low profile higher education choices for low SES students (Yolcu, 2011). Because of the financial burdens, students from lower SES families could not enroll in a private university and choose vocational higher education schools instead (Kandemir & Kaya, 2010).

Tuition costs are declining in Türkiye in real terms. However, in some countries contrary trends have been observed. Where tuition increases, it leads to loan increases for low SES students, which have some adverse effects. Increase in cost burden might impair cognitive functioning and cause a decline in grades over time (Destin & Svoboda, 2018). Secondary school students may overestimate cost of higher

education, which may lead to debt fear (Nienhusser & Oshio, 2017). Loan debt fear has affected Japanese mothers' attitudes towards their children's school choice decisions too (Furuta, 2021). Even, framing and labeling loans may reduce high school student aspirations toward higher education (Evans et al., 2019). Providing information on cost of and returns to education did not increase students' intention to apply university (McGuigan et al., 2016). In Germany, providing information to parents on returns to and cost of higher education did not experimentally close the aspiration gap for students with and without parental higher education background (Lergetporer et al., 2021).

There are some non-negative findings related to tuition increase. Findings from a meta-analysis show that tuition-enrolment elasticity is close to zero, meaning that students demand for higher education on the average does not respond to tuition changes (Havranek et al, 2018). In the UK where a large increase in tuition fees were experienced, it was found that teenagers' aspirations were not responsive to changes in higher education financing, instead a reduction in parents' SES aspiration gap was observed (Hassani-Nezhad et al., 2021). This is probably a result of a reform introducing more support and loaning opportunities made available for low SES students. Loan debt fear deterred students from applying university in 2002, and this effect on student behaviors have changed on the average towards 2015, but debt-averse attitudes remained stronger for low SES students (Callender & Mason, 2017). In Germany, imposing tuition fees has increased the study effort and degree completion among already enrolled students, but decreased first-time university enrollment (Bietenbeck et al., 2023). In an experimental study, male participants show higher aspirations when they face a cost constraint to continue further (Page et al., 2007).

In this study, willingness to pay tuition was asked for the enrolled program and most aspired program. The latter is found unrelated to PE while the former has a positive effect on probability f spending more than average. This willingness might be related to family resources for low SES students as well as the level of tuition and credit constraints are so. Therefore, this finding might be interpreted as an indicator of how students might have behaved under a higher tuition policy.

In the countries where tuition costs and student loans are higher financial aids gets extremely important especially students from low SES. However, financial aid does not cover all the expenses of students. In the USA, tuition costs have been increasing, state funding for higher education has been declining and mean family income has also declined or stagnated since the turn of the 21st century (Adrews, 2021). Increase in costs has leaded high levels of student debt and obstacles for low SES students (Brint, 2022). These financial conditions have changed college students' credit card using behavior and lowered likelihood of completing bachelor's degree (Andrews, 2021). In an experimental study, financial education was found ineffective on consumer behaviors of students (Beckker et al., 2021). Constraints on government student loans may increase use of private loans which are sensitive to credit risk. (Ionescu & Simpson, 2016). Higher government borrowing limits increase college investment, and an increase in tuition subsidies reduces private default rates as well (Ionescu & Simpson, 2016).

In many countries, student grants, tuition fees, and subsidized loans depend on parental income and mainly benefit high-ability students (Dur et al., 2004). Students from low SES background typically dependent on these kinds of supports. Income-Contingent Loans (ICL) was introduced in USA as a means to finance higher education by the income earned by graduates afterwards (Shireman, 2017). Later, it was used in European countries to increase the student contribution to financing of higher education (Vandenberghe & Debande, 2008). Giving loans to South African female students have increased their enrollment in higher education (Gurgand et al., 2023). Findings of a natural experiment showed that need-based aids have increased the college persistence including, lower drop-out rates, increased attendance, and higher grades (Bettinger, 2015). Need-based aids might be more preferable by students (Heo, 2023). In Jamaica need-based aids improved educational performance of students, while early labor market outcomes were negative (Wright, 2021). However, selecting among low SES secondary school students for eligibility to gain government support might be inefficient as their likelihood of enrollment in college is low (Lee et al., 2021). In addition, low-cost intervention may be insufficient to provide completion for near graduating students (Bettinger et al., 2022). Merit-based aids might not have a positive effect on attendance and attainment, either (Gurantz & Odle, 2022). However, in the long run merit-based aids have positive effects on degree completion, house ownership and annual earnings (Scott-Clayton & Zafar, 2019). Student support eligibility has substantial long run effects on adults' annual earnings and employment (Lavecchia et al., 2020).

In this study, it was reported by teacher candidates that about ¾ of them have received scholarship and or credit. Those who received scholarship is between 30 and 40%. They also reported that their expenditures have been declining in USD terms, as financial resources to meet them, namely family income, amount of scholarship/credit and income from student work have declining during the period while this research has been conducted. Teacher candidates receive similar amounts of scholarship and/or credits. Probability of student work has not been increasing, probably as a result of high rates of youth unemployment in Türkiye. These results imply that higher dependency on student loans, family income and student work will be necessary for teacher candidates to secure them from student poverty.

5. CONCLUSION AND RECOMMENDATIONS

In this study, variables included in educational background, family background, other cost related factors, higher education aspirations and future labor market expectations were all found related to higher probability of teacher candidates' private expenditures. Sources of funding for expenditures, family income, scholarship/credit, and student work were all related to spending higher-than average. Results also show that teacher candidates private expenditures have been declining over time. Moreover, composition of expenditures has also been changing, expenditure on food gets relatively more important and clothing and tuition get relatively less important. Higher family income was related to higher-than-average private spending, while higher student work income and higher student loan/scholarship were

not related. The reason for that might be relatively similar levels of scholarship/credits and low probability of student work. These findings imply that wealth of families of teacher candidates have been declining and lowering private higher education expenditures. As most of the teacher training students in the sample are considered coming from low SES families, it can be concluded that lower financial resources might have narrowed the private expenditures. Willingness to pay tuition seems to be related to family SES too.

A policy recommendation depending on the results of the research could be increasing the levels and availability of family resources for teacher candidates. Otherwise, student poverty can be expected to be more prevalent among teachers of future. Another policy recommendation could be introduction of merit-based supports. A recommendation for future research is that as level and types of expenditures change more attention must be given to transportation cost. In this study family settlement was asked. The proximity or distance of the family settlement might also be asked in detail.

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GENİŞLETİLMİŞ TÜRKÇE ÖZET

ÖĞRETMEN ADAYLARININ KİŞİSEL HARCAMALARI: MERSİN ÜNİVERSİTESİ ÖRNEĞİ

Giriş

Eğitimin kişisel maliyeti öğrencilerin yükseköğretim talebi ve program tercihleri üzerinde etkisi olan faktörlerden biridir. Kişisel maliyetler doğrudan ve dolaylı maliyetleri içerir. Doğrudan maliyetler içinde kişisel harcamalar yer alır. Bunlar barınma, ulaşım, öğrenim ücreti vb. şekillerde ortaya çıkar. Düşük gelirli öğrenciler bu harcamalarını karşılamak için burs ve kredi şeklinde desteğe ihtiyaç duyar. Batılı ülkelerde yükseköğretimin harcamaları artış eğilimindedir. Bunun en önemli nedenlerinden biri öğrenim ücretlerindeki artıştır. Yükselen öğrenim ücretleri özellikle düşük SES ailelerden gelen öğrenciler için daha fazla burs ve kredi ihtiyacı anlamına gelmektedir. Vazgeçilen kazançlar ise dolaylı maliyetleri oluşturur. Öğrenci işgücü sonucu elde edilen kazançlar vazgeçilen kazançları düşürür. Enflasyonist süreçler eğitimin maliyetini artırıcı etkiye sahiptir. Türkiye'de de enflasyonist bir süreç yaşanmaktadır. Öte yandan, devlet üniversitelerinde okuyan öğrenciler için öğrenim ücretleri çok düşüktür. Düzenli öğrenciler öğrenim ücreti ödememektedir. Diğer kişisel harcamalar ise ekonomik koşullardan etkilenmektedir.

Bu araştırmada, öğretmen adaylarının kişisel harcama düzeyleri ve harcama türleri ile, ortalamadan yüksek kişisel harcama yapma olasılığını etkileyen değişkenlerin belirlenmesi amaçlanmaktadır. Çalışmanın sonuçları geleceğin öğretmenlerinin kişisel harcamalarının ekonomik gelişmeler karşısında nasıl bir gelişim gösterdiğinin anlaşılması açısından önemlidir.

Yöntem

Bu çalışmada nicel veri analizine dayalı betimsel bir araştırma yöntemi benimsenmiştir. Araştırma kapsamında Mersin Üniversitesi Eğitim Fakültesinde 2013, 2016, 2019 ve 2022 yıllarında öğrenim gören öğretmen adaylarından çalışma kapsamında geliştirilen bir anket aracılığıyla veri toplanmıştır. Çalışmaya 2013'te 657, 2016'da 690, 2019'da 624, 2022'de 574 olmak üzere toplam 2545 öğretmen adayı katılmıştır. Katılım oranı yıllara göre %52 ile %63 arasındadır. Araştırmada öğretmen adaylarının harcama düzey ve türlerini belirlemek için ortalama ve yüzdeler alınmıştır. Öğretmen adaylarının ortalamadan yüksek kişisel harcama yapma olasılığını etkileyen faktörleri tespit etmek için bir model geliştirilmiştir. Bu modelde yüksek kişisel harcamalar bağımlı değişken olarak; eğitim geçmişi, aile geçmişi, diğer maliyet değişkenleri, yükseköğrenim arzuları ve gelecekteki işgücü piyasası beklentileri belirleyici faktörler olarak ele alınmıştır. Bu faktörleri açıklamak için bir dizi değişken kullanılmıştır. Bu değişkenlerin anlamlı katkıda bulunduğu en iyi model lojistik regresyon analizi ile belenmiştir.

Bulgular

Araştırmadan elde edilen bulgulara göre kişisel eğitim harcamaları ve diğer parasal değişkenlerin ortalama değerleri Türk Lirası (TRY) cinsinden artış göstermiş olsa da Amerikan Doları (USD) cinsinde düşüş göstermektedir. Aile geliri, burs/kredi geliri ve öğrenci işgücünden elde edilen gelirlerin ortalamaları kişisel harcamaların finansman kaynağı olarak görülmektedir ve üçünün de eğitim harcamaları ile birlikte USD cinsinden düşüş gösterdiği gözlenmiştir. Burs veya kredi alan öğretmen adayı oranı %75 civarındadır. Karşılıksız burs alanları oranı ise yıllara göre %33 ile %41 arasında değişmektedir. Türkiye'de uygulanan devlet üniversitelerinde sıfır öğrenim ücreti politikası nedeniyle anlamlı bir öğrenim ücreti verisinden söz etmek mümkün değildir. Bu çalışmada, bunun yerine alternatif bir değişken olarak öğrenim ücreti ödeme rızası geliştirilmiştir. Hem devam edilen programda hem de en çok arzulanan programda öğrenim ücreti ödeme rızası yıllar içinde düşüş göstermiştir. Öğretmen adaylarının harcama türleri incelendiğinde, harcamalar içinde yiyeceğin göreli öneminin arttığı, giyecek ve öğrenim ücretinin göreli öneminin azaldığı gözlenmiştir.

Enflasyonun veri üzerindeki etkisinden kaçınmak için veri toplanan her bir yıl için ayrı ayrı olmak üzere ortalamadan yüksek harcama beyan edenler için 1 diğerleri için 0 değerini alan bir kukla değişken elde edilmiştir. Bu değişkene ortalamadan yüksek kişisel harcama yapma olasılığı adı verilmiştir. Bu değişkenin bağımlı olarak ele alındığı lojistik regresyon sonuçlarına göre araştırma modelinde yer alan her bir faktör kapsamına giren bazı değişkenlerin yüksek harcama yapma (PE) olasılığını etkilediği gözlenmiştir. İlköğretim Matematik Öğretmenliği programına kayıtlı olmanın PE olasılığını olumsuz etkilediği ortaya çıkmıştır. Dördüncü sınıf olmak birinci sınıf olmaya göre PE olasılığını artırmaktadır. Erkek olmak da PE olasılığını olumlu etkilemektedir. Anne eğitim düzeyi, anne istihdam durumu ve aile geliri PE olasılığını artıran diğer aile geçmişi değişkenlerindendir. Öğrenci işgücü ve bundan elde edilen gelirlerin ortalamanın üstünde olması PE üzerinde olumlu etkiye sahiptir. Finansman kaynaklarından aile desteği pozitif etkiye sahipken, öğrenci çalışması gelirleri ve burs ve kredi gelirlerinin PE olasılığı üzerinde anlamlı etkisi yoktur. Kayıt olunan bölümde öğrenim ücreti ödeme rızası, lisansüstü eğitim görme arzusu ve gelecekte beklenen ortalama aylık ücretin ortalamanın üstünde olması PE olasılığını artırmaktadır.

Tartışma

Kişisel yükseköğretim harcamaları başka ülkelerde artarken bu araştırmada elde edilen bulgulara göre öğretmen adayları için düşüş eğilimindedir. Öğretmen adaylarının kişisel harcamaları ağırlıklı olarak aile gelirlerinden karşılanmaktadır. Dolayısıyla aile gelirindeki değişikliklere duyarlıdır. Türkiye'de yaşanan enflasyonist süreç aile gelirlerindeki daralma nedeniyle öğrenci harcamalarını USD bazında düşürmüştür. Başka ülkelerde ise enflasyonist süreç eğitim maliyetlerindeki artış nedeniyle gerçekleşen yüksek öğrenim ücretleri kişisel harcamaları artıran en önemli neden olmaktadır. Türkiye için yapılan başka araştırmalar da aile kaynaklarının yükseköğretim harcamalarının finansmanındaki önemini vurgulamaktadır.

Öğrenim ücretlerindeki artış başka ülkelerde özellikle düşük SES ailelerden gelen öğrencilerin borç yükünün artmasına neden olmuştur. Borç yükünün artması öğrenciler üzerinde bazı psikolojik etkilere sahiptir. Başarı üzerindeki etkisinin yanında öğrencilerin arzuları ve beklentileri de borç yükünden olumsuz etkilenmektedir. Türkiye'de ise aile gelirinin daralmasının yanı sıra borçlanma ve burs elde etme olanaklarının kısıtlı olması bir takım olumsuz etkilere sahip olmuş olabilir. Öğrencilerin kredi kartı kullanımındaki artış, harcama kompozisyonunun değişmesi gibi etkiler de söz konusudur.

Aile gelirindeki daralmanın yanı sıra burs ve kredi olanaklarının genişlememesi, öğrenci çalışmasının da yüksek genç işsizlik oranları nedeniyle artmaması öğretmen adayları açısından artan bir öğrenci yoksulluğu tehdidinden bahsedilebileceğini anlamına gelmektedir.

Sonuç ve Öneriler

Bu araştırmadan elde edilen sonuçlar, kişisel harcamaların, özellikle de öğrenim ücretlerinin diğer bazı Batılı ülkelerde artış eğilimindeyken öğretmen adaylarının için düşüş eğiliminde olduğu yönündedir. Bunun temel nedeninin aile gelirlerindeki düşüş olduğu sonucuna varılmıştır. Öğretmen adaylarının büyük ölçüde düşük SES ailelerden gelmiş olması ailelerin SES'lerinin düşüş eğiliminde olduğu anlamına gelmektedir. Öğretmen adaylarının yoksulluğunun önüne geçilmesi için öncelikle aile gelirini artırıcı politikalara ihtiyaç olduğu bir öneri olarak öne çıkmaktadır. Bursların ve kredi desteğinin benzer düzeyde olması, bunların kişisel harcamalar üzerinde ayırt edici olmamasına yol açmıştır. Bu nedenle başarı temelli öğrenci desteklerinin başlatılması bir başka politika önerisidir. Gelecekte yapılacak araştırmalar için ise, ailenin yerleşim yerinin okula olan uzaklığının bir maliyet unsuru olarak göz önünde bulundurulması bir öneri olarak düşünülmektedir.

EJAES

JOURNAL OF ADVANCED EDUCATION STUDIES

İleri Eğitim Çalışmaları Dergisi

6(2):46-78,2024

EXAMINATION OF TEACHERS' ATTITUDES TOWARDS THE USE OF TECHNOLOGY IN EDUCATION IN ETWINNING PROJECTS[1]

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Geliş Tarihi/Received: 07.11.2024 Elektronik Yayın / Online Published: 15.12.2024

DOI: 10.48166/ejaes.1581312

ABSTRACT

eTwinning, which was initiated as the main movement of the European Commission's e-learning program and later supported within the scope of the Erasmus+ program, is carried out in our country by the General Directorate of Innovation and Educational Technologies of the Ministry of National Education.eTwinning, an activity where teachers and students in 46 countries come together in an online environment to create projects and develop their personal and professional development, encourages the use of information technologies and the use of innovative teaching methods and techniques.In this study, it was investigated whether there was a significant difference between the attitudes of teachers who are new to eTwinning and teachers who receive the eTwinning National Quality Label in terms of using technology in education.The study was conducted using the causal comparison model, which is one of the quantitative research methods, and a demographic information form and an attitude scale regarding the use of technology in education were used. The Mann Whitney U test was used to examine whether there was a significant difference between the attitudes and sub-dimensions of teachers who received and did not receive the eTwinning quality label towards the use of technology in education. As a result of the analysis of the data, it was found that; It was observed that there was a significant difference in the attitudes towards the use of technology in education in the whole scale and in the sub-dimension of self-development in the use of technology in education, which is one of the three sub-dimensions. It is seen that eTwinning projects contribute positively to teachers' attitudes towards using technology in education, and those who receive the National Quality Label have a higher attitude level than those who are new to eTwinning.

Keywords: Technology use in education, eTwinning, technology integration, attitude towards the technology use in education, national quality label

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ETWINNING PROJELERİNDEKİ ÖĞRETMENLERİN EĞİTİMDE TEKNOLOJİ KULLANIM TUTUMLARININ İNCELENMESİ

ÖZET

Avrupa Komisyonunun e-öğrenme programının ana hareketi olarak başlatılan, sonrasında Erasmus+ programını kapsamında desteklenen eTwinning, ülkemizde Milli Eğitim Bakanlığı Yenilik ve Eğitim Teknolojileri Genel Müdürlüğü tarafından yürütülmektedir. 46 ülkedeki öğretmen ve öğrencilerin çevrim içi ortamda bir araya gelerek proje oluşturdukları, kişisel ve mesleki gelişimlerini geliştirdikleri bir faaliyet olan eTwinning, bilişim teknolojileri kullanımını artırmayı, yenilikçi öğretim yöntem ve tekniklerinin kullanımını teşvik etmektedir. Bu çalışmada, eTwinning'e yeni başlayan öğretmenler ile eTwinning Ulusal Kalite Etiketi alan öğretmenlerin eğitimde teknoloji kullanım tutumları arasında anlamlı bir fark olup olmadığı araştırılmıştır. Çalışma, nicel araştırma yöntemlerinden nedensel karşılaştırma modelinde gerçekleştirilmiş ve demografik bilgi formu ile eğitimde teknoloji kullanımına ilişkin tutum ölçeği kullanılmıştır. eTwinning kalite etiketi alan ve almayan öğretmenlerin eğitimde teknoloji kullanımına yönelik tutumları ve alt boyutları arasında anlamlı bir fark olup olmadığı Mann Whitney U testi ile incelenmiştir. Verilerin analizi sonucunda Ulusal Kalite Etiketi alan ve almayan öğretmenler arasında; eğitimde teknoloji kullanımına ilişkin tutumlarının, ölçeğin tamamı ile üç alt boyutundan biri olan eğitimde teknoloji kullanımında kendini geliştirme alt boyutunda anlamlı bir fark olduğu görülmüştür. eTwinning projelerinin, öğretmenlerin, eğitimde teknoloji kullanım tutumlarına olumlu yönde katkı sağladığı ve Ulusal Kalite Etiketi alanların, eTwinning'e yeni başlayanlara göre daha yüksek tutum düzeyine sahip oldukları görülmektedir.

Anahtar kelimeler: Eğitimde teknoloji kullanımı, eTwinning, teknoloji entegrasyonu, eğitimde teknoloji kullanımına yönelik tutum, ulusal kalite etiketi

1. INTRODUCTION

There are many studies and reports in the literature on the integration of technology into education. With the development of technology, it is stated that the needs of teachers and students for the use of information and communication technologies (ICT) in the educational environment have increased, succinctly, new studies on this subject have emerged at national and international level. According to Gültekin and Anagün (2006), the majority of technology integration activities in education within the European Union (EU) focus on creating e-learning environments, educational portals, and school networks. The authors also highlight the importance of prioritizing the creation of a multilingual and multicultural Europe.

According to Akkoyunlu (2002), the use of computers in the education system in Türkiye has taken its place in technology integration studies since 1984 and accordingly technology usage for educational purposes has become an important issue in Türkiye with the Sixth Five-Year Development Plan. In these studies, it is seen that the use of technology is an important, necessary and has gained priority among the educational goals of Türkiye (Ministry of National Education [MoNE], 2014). One of the most important one among these goals is "to encourage teachers and students to improve their use of information technologies, integrate technology into the curriculum they implement and use innovative teaching methods and techniques" (MoNE, 2014, p.56).

Within this context, it can be said that eTwinning projects, which offer education and learning opportunities with digital technologies, can contribute to the achievement of these goals of MoNE because they encourage both teachers and students to use ICT (Küçüktaşçı, 2022). It can be seen different descriptions of the term, eTwinning in Erasmus+ guidelines published by the European Union every year. First of all, in Erasmus+ 2017 guideline, eTwinning is described as a secure platform open to teachers and also a community of teachers from pre-school level to high school ones. Secondly, in 2020 guideline, eTwinning is also described as a platform where : "Participants can take part in a range of activities, such as carrying out projects with other schools and classrooms, discussions with colleagues and developing professional networks, and taking advantage of various professional development opportunities (online and face-to-face)" (Erasmus+, p.113). Moreover, it is also set forth as an online network expected to be used by both students and teachers in Erasmus+ projects, is particularly recommended for virtual collaboration and dissemination activities (Erasmus+, 2022). In conclusion, this platform will continue to produce support materials for Erasmus+ activities and facilitate the exchange of information and as such in intensive cooperation between all schools involved during and after staff mobility is also encouraged (Erasmus+, 2022).

1.1. eTwinning

The word eTwinning is a combination of the words "e" and twinning derived from "twin" and stands for electronic twinning. Started in 2005 as the main action of the European Commission's e-learning Program, eTwinning has been supported since 2014 under the 2nd Main Action of the Erasmus+ program, the EU Education, Training, Youth and Sport program (Erasmus+, 2022). eTwinning is coordinated by the eTwinning Central Support Service (CSS) based in Brussels, Belgium. It works in 46 countries in cooperation with National Support Organization (NSOs).

eTwinning enables schools in 46 countries; to create shared virtual classrooms and carry out projects with other schools, engage teachers in discussions and exchanges with colleagues, and participate in various professional development opportunities (eTwinning, 2024).

As it is stated before, this program of the European Commission provides a platform for schools to communicate, collaborate and carry out projects with two or more schools in different countries in Europe via internet (Pratdesaba, 2014). Additionally, it also provides a flexible platform for teachers to realize collaborative pedagogical school projects (Konstantinidis, 2012). In a nutshell, eTwinning platform can be defined as a large online teachers' room.

The management scheme of eTwinning is shown in Figure 1 and as it is seen, the activity has a bidirectional flow from the center to the inside and from the inside to the center. In Türkiye, eTwinning activities are carried out by the National Support Organization (NSO) within the General Directorate of Innovation and Educational Technologies of the Ministry of National Education.

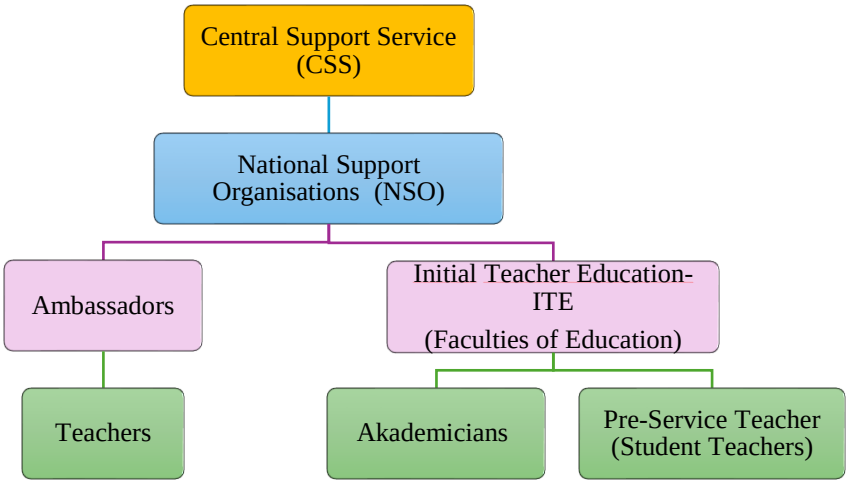

Figure 1. eTwinning Management Chart

eTwinning Ambassadors organize trainings with teachers in their cities and provide support for the activity. They also carry out the reporting process, official works and procedures of the activities in their cities. The NSO carries out its activities across the country with 84 ambassadors in 81 cities (eTwinning Türkiye, 2022).

Since 2018, academicians in the Faculties of Education of universities and their students have also been included in this community. At the end of 2020, in the summary monitoring report published at the end of 2020, the importance of integrating eTwinning into teacher education was highlighted, and it was emphasized that some countries have already included it in their curricula (Licht et al., 2020). In Türkiye, according to 2021 data, 102 academics and 1044 prospective teachers from 39 different universities are involved in this program (eTwinning Türkiye, 2022). The activity processes of teachers involved in eTwinning are given in Table 1.

Table 1. eTwinning Activity Process

Registration	Registering and confirming the registration in eTwinning Portal
Project creation process	Creating a project by two teachers from two different countries in the role of founders and approving the project, or participating in an already created project in the role of a partner
Project initiation process	Planning the subject of the project, objectives, activity contents, association with the curriculum, project duration and collaborative work(s)
Project execution	Realization of the planned works by all project members simultaneously with their students and uploading images, videos, files, etc. into Twinspace
Project closure processes	Completion of all activities in line with the project plan; completion of evaluation and dissemination activities; application for the national quality label

The eTwinning platform is expressed as one of the most effective and safe virtual learning environments for teachers, prospective teachers and students, especially in preparing them for the fast and ever-changing needs of the 21st century (İzgi Onbaşılı vd., 2022). The aim of eTwinning is to create

a friendly environment for encouraging teachers to replace traditional teaching methods with collaborative and project-based teaching (Gajek & Poszytek, 2009). Indeed, in the MoNE activity report (2015, p.111): "Within the scope of eTwinning, a community has been established where teachers can communicate online, share knowledge and experience, participate in online and face-to-face trainings, and realize projects that are compatible with curricula and use technology effectively and efficiently, involving teachers and students from all over Europe". In the same report: "eTwinning is a secure, pedagogic, web-based social network for teachers and students in Europe that encourages teachers and students to integrate technology into the curriculum and use innovative teaching methods and techniques by improving their use of information technologies" (MoNE, 2015). Compared to other projects that encourage collaboration among teachers, the most important feature of eTwinning is not having a bureaucratic aspect and is conducted online without financial obligations or contracts (Gülnar & Yatağan, 2014; Gülnar, 2015). Other important features of an eTwinning project are the teacher's ability to use technology and collaborate with other teachers (Gajek & Poszytek, 2009), while presenting subjects to students in a more interesting way and enabling individuals to increase their personal competencies by participating in different activities using information technologies (Döğer, 2015).

On top of them, it is seen that eTwinning projects, which do not require advanced technological infrastructure, knowledge and skills, withal offer an important opportunity especially for teachers who are new to using technology in the classroom (Bozdağ, 2017).

1.2. National Quality Label

Teachers can apply for an eTwinning quality label award at the end of the project carried out during an academic year. Quality Label is a kind of rewarding system that increases teachers' recognition and over and above contributes to their professional development (Ulutan, 2020). The NSO in eTwinning countries evaluates the applications done by teachers. In order to evaluate an eTwinning project, the project must have some prerequisites; They are;

-having common aims and a common plan,

-already completed or is about to be completed,

-making a significant contribution to the project by each teacher,

-cooperation between the project partners and,

-visible project results.

Once all of these five requirements are met, the project can be assessed for the Quality Label. In the Quality Label evaluation rubric, there are five criteria taken into consideration by the evaluators and they are;

- Cooperation between Partner Schools
- Technology Use
- Pedagogical Innovation
- Integration with Curriculum

- Results, Impacts and Documentation (eTwinning Türkiye, 2022):

Each criterion is evaluated on a scale of 1-5 points in accordance with the published rubric. Project founders receive an additional 5 points. Teachers who work according to these criteria and score above a certain number of points can receive the quality label for 2021 and are rewarded with the National Quality Label (NQL). This award is presented to the teacher's school and students as well.

Mersin has the characteristics of a city which is ranked first in Türkiye several times in terms of the numbers of eTwinning quality labels between 2015 and 2022, as well as being a city where eTwinning activities are conducted intensively and ranked high in the country in general according to data of NSO and Mersin Provincial Directorate of National Education , The eTwinning Mentoring scheme, which was first launched in a district in Mersin in 2019 and then expanded to span the entire city, has further increased the eTwinning success of the city. Teachers who are new commers to eTwinning are brought together after basic training and information with experienced teachers who have received NQL, referred as mentors. In this process, each mentor is assigned to a group of people up to 10 and provides eTwinning guidance to the teachers in this group. The project is created and executed in unison. Throughout the whole process, including the quality label application, mentor teachers support their groups up close and personal. With this method, which has been applied 5 times, one of which was a pilot, the professional bond between teachers working in the same province and district is strengthened and they can easily overcome the difficulties of the process through peer learning. As a matter of fact, the results of the Mersin NQL show the positive results of these studies conducted with this method. As seen in Figure 2, Mersin shows an exponential increase in the quality of eTwinning activities every year.

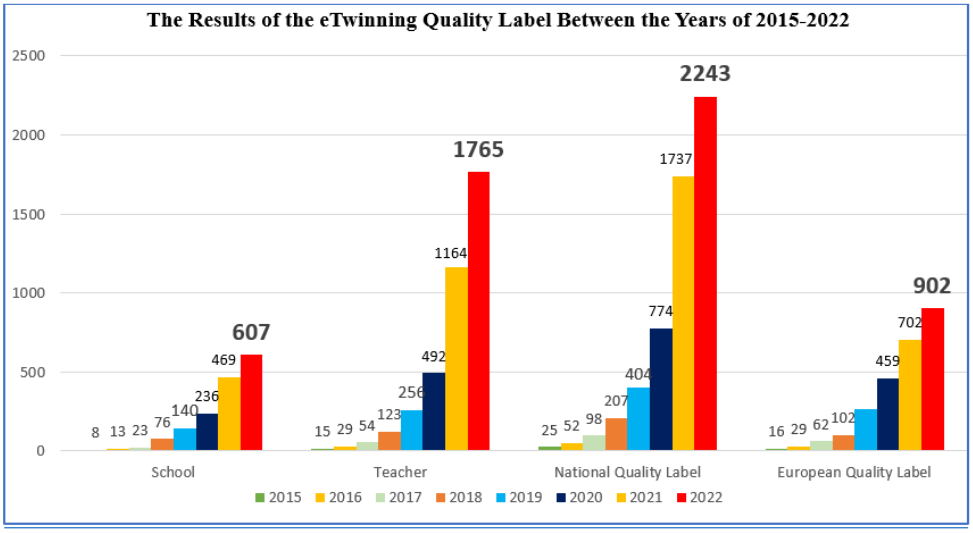

Figure 2. The Results of the eTwinning Quality Label Between the Years of 2015-2022

The NQL is awarded to teachers who have very well-qualified eTwinning projects and indicates that the project has prove out a certain quality level in educational standards in their country (eTwinning, 2022). An example of a NQL is shown in Figure 3.

Figure 3. National Quality Label

1.3. European Quality Label

If teachers from different countries are involved in the project, it is referred as a European project and teachers from the other countries are assessed with the same rubric by their own NSO. If a project has received NQL from at least two countries and is above a certain score, it is recommended by the NSO to CSS. The projects considered appropriate after the evaluation by CSS are awarded with the European Quality Label (EQL). This award is given to all the teachers in the project who have received the NQL. The EQL indicates that work has been carried out in line with European Education standards. Figure 4 shows an example of the EQL.

Figure 4. European Quality Label

The Quality Label confirms that a teacher, within the scope of the project activities, works with his/her students in a way that meets the criterion of use of technology together with the other 4 criteria.

In this respect, what is expected from this criterion in the evaluation is the use of ICT tools and the safe use of technology can be seen apertly. This criterion focuses on the integration of technology into projects and therebye into the classroom as a factor that enables interaction and collaboration between partners as well as content creation (eTwinning Türkiye, 2022).

1.4. eTwinning Practices in Europe and Their Evaluation

Galvin et al. (2006), in a study on the reflections of eTwinning one year after its foundation, stated that eTwinning aims to involve a large number of students in European cooperation in order to improve the quality of education, promote cultural exchange and increase innovative developments.

In the scope of the national conference held in Italy in 2007, studies and examples of projects related to eTwinning were published. Biondi (2007) stated that although eTwinning is characterized by the use of new technologies, it is not limited to the integration of ICT into teaching or the strengthening of foreign language skills in the introduction of his study. Manfredini (2007), on the other hand, stated that eTwinning offers the opportunity for students to learn meaningfully and for teachers to motivate a different and innovative approach to their professions. It is also a chance to show how Europe itself can be a subject, a tool and an environment for learning.

Gajek and Poszytek (2009) presented the phenomena observed in the eTwinning program based on the Polish case in a book and they also stated that eTwinning projects are not limited to the development of ICT competences of teachers and students, but also include competences and skills required by the knowledge-based society.

Kampylis, Bocconi and Punie (2012) conducted a study with 98 teachers from 20 countries who participated in a two-week online learning activity on the eTwinning portal. In this study, two online and anonymous questionnaires, a pre-survey and a post-survey, were conducted to the teachers on the contribution of eTwinning to the development of creative educational practices in the use of ICT in the classroom. In this study, which examined the effects of eTwinning on technology integration, participants reported that they recognized eTwinning activities as a concrete example of ICT-enabled innovation for learning and as providing opportunities for self-improvement.

Holmes (2013), in his doctoral dissertation with teachers who participated in a learning activity carried out on the eTwinning portal as one of the professional development activities, figured out that online learning communities enable teachers reflect on their experiences and be a good alternative to traditional teacher education by means of collaborating with their peers across regions and countries. In 2013, the European Commission Directorate-General for Education, Youth, Sport and Culture (DG-EAC) conducted an impact analysis study "Examining the impact of eTwinning on participatory students, teachers and schools" to examine the impact of eTwinning on teachers, students and schools. The impact study lasted for 21 months and all the months round data and evidence were collected through a literature review, data and document review; completion of 24 school case studies in 13 countries, and a general survey of 5956 registered eTwinning users in 25 languages. It was noted that the majority of participatory teachers had realistic, positive expectations of eTwinning and these

expectations were largely fulfilled through their eTwinning experiences. Moreover, it was also noted that eTwinning provided development of teaching skills by the improvements in personal knowledge, competence and skills. According to the survey results, 5 main benefits of eTwinning for teachers were listed as in the following (DG-EAC, 2013):

- Making new friends and networking across Europe (64%);
- Acquiring new or improved ICT skills (60%);
- Have a positive impact on their students' skills or motivation to learn (55%);
- Creating a sense of participation in an international teaching community (55%);
- Improving foreign language skills (54%).

Breuer, Klamma, Cao, and Vuorikari (2009) visualized this large network by conducting a social network analysis (SNA) of 45,000 schools involved in eTwinning activities (Figure 5).

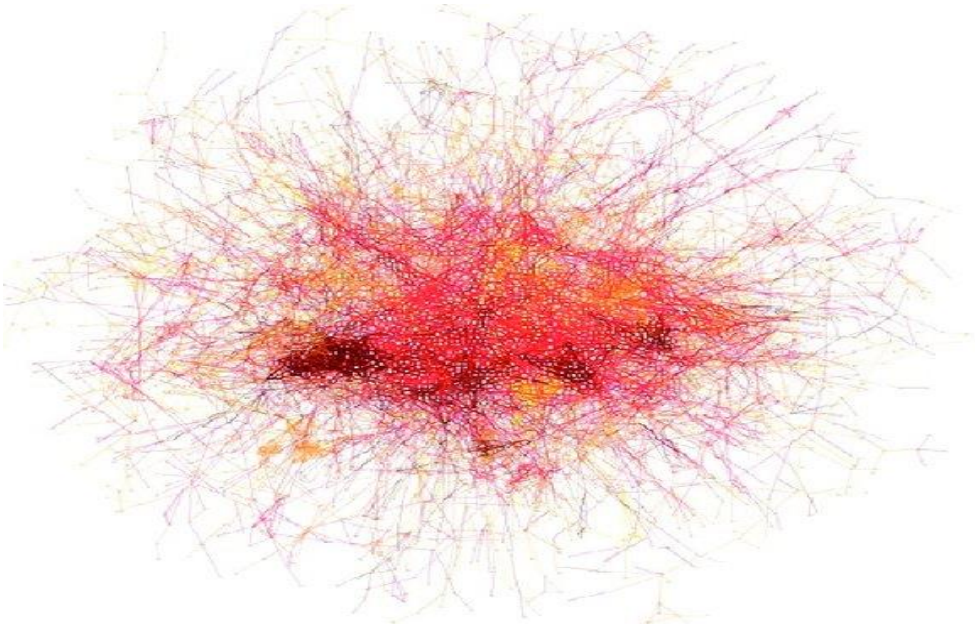

Figure 5. Visualization of eTwinning Teacher Network (Breuer et al., 2009)

Pham, Cao and Klamma (2012) further developed this image based on data from the eTwinning portal at the end of 2011. Each dot represents an eTwinning teacher and the connection between them indicates the project collaboration (Vuorikari et al., 2012). Figure 6 clearly shows how the projects connect schools across Europe.

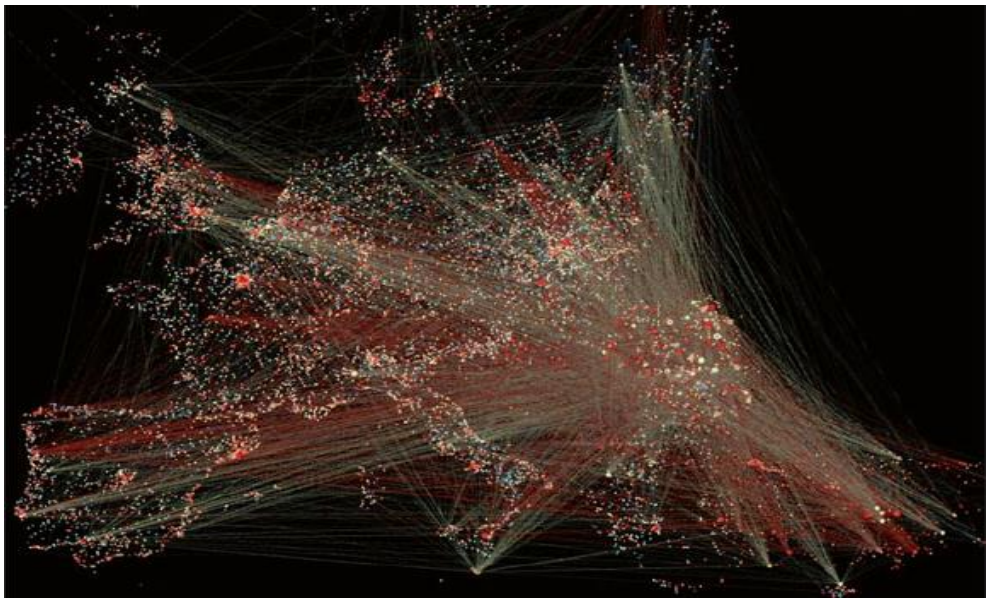

Figure 6. eTwinning Teacher Network (Pham et al., 2012)

Figure 7 shows the nodes in the eTwinning project network. Each node represents a teacher working in an eTwinning school, colors represent countries, and the lines represent project collaborations. This image is a close-up of figure 6 (Pham et al., 2012; Vuorikari et al., 2012).

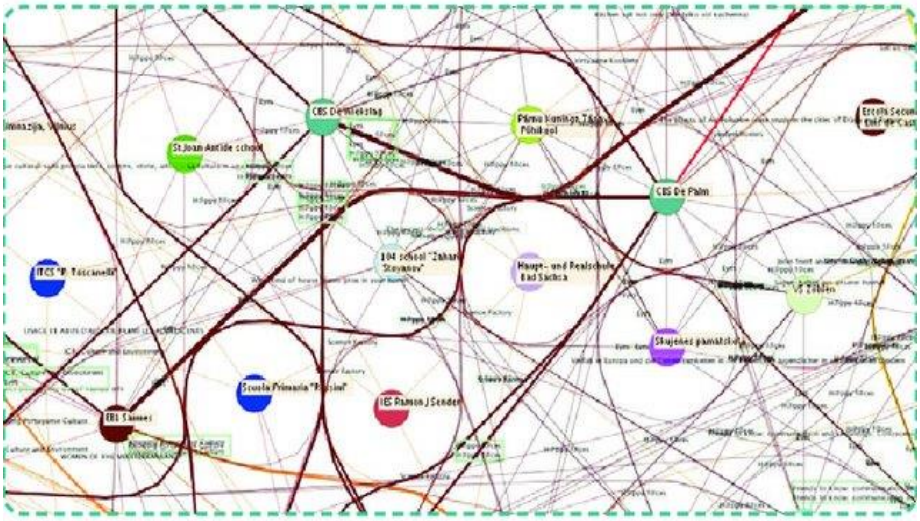

Figure 7. eTwinning Project Network (Pham et al., 2012; Vuorikari et al., 2012)

Pratdesaba (2014) extrapolated that eTwinning provides teachers and students with an appropriate environment in which they acquire new ICT skills with the opportunity to teach and learn content in a foreign language in collaboration with colleagues/peers besides students become more confident and autonomous. In addition, eTwinning is a promising pedagogical tool in teacher education (Paz-Albo & López, 2017).

Qualitative and quantitative researches have been conducted by CSS since the early years of eTwinning. These researches take the form of case studies, summary monitoring reports, full monitoring

reports, presentation of good practices, books on annual themes, etc. and have been published on the eTwinning homepage. The monitoring reports stand out among them as they reflect the state of the community.

In 2014-2015, a two-part monitoring study conducted by CSS which was consisting of a large-scale quantitative survey of eTwinners' teaching practices, professional development activities and needs, and a piloting of a small-scale qualitative methodology to monitor the progress of teachers' pedagogical and digital competence development (Kearney and Gras-Velázquez, 2015).

This method allowed, on the one hand, a large-scale monitoring of a sample of eTwinning users and, on the other hand, a deeper exploration of the conditions behind certain trends. After the results of the first part were published, the qualitative findings were reported at the end of 2016. Around 6000 teachers from 42 countries - 840 teachers from Türkiye - participated in this eTwinning research process (Kearney and Gras-Velázquez, 2017). According to the results of this longitudinal study, eTwinning had a significant impact on students' motivation and learning practices, as well as on teachers' individual skills and educational practices. The findings also confirm that eTwinning is an important tool for promoting innovative practices in schools. More than 90% of the teachers stated that the skills that eTwinning has influenced are cross-curricular skills (teamwork, creativity, problem solving and decision making, etc.) and project-based learning skills. Likewise, more than 90% of the teachers stated that eTwinning had a positive impact on increasing students' motivation and developing collaborative work among students. Around 80% of respondents reported their beliefs in the particularly positive impact of eTwinning on improving relationships between students and teachers (Kearney and Gras-Velázquez, 2017).

Once more, in the 2019 summary report, the results of the survey conducted on 10349 people supported the findings of the 2014 and 2016 reports and revealed that eTwinning, by its very nature, encourages teachers to use technology as a tool rather than an end (Gilleran, 2019). The teachers who participated in this study pointed out that;

- 75% of them use technology to collaborate in group work and project work,
- 68% use technology to learn at their own pace,
- 68% of them use ICT/multimedia/internet during lessons,
- 64% use ICT/multimedia/internet for homework,
- 61% play digital games for learning purposes (Gilleran, 2019).

Monitoring activities between 2017-2020 included quantitative methods for professional development activities and needs, qualitative methods for self-assessment of teacher competence, and mixed methods for eTwinning school analysis. Finally, in the Qualitative Monitoring Report published in 2021, the impact of eTwinning on countries' national education policies, professional development, integration into the curriculum and innovative pedagogies were examined and our country was also included in this report (Mouratoglou, Scimeca, & Gilleran, 2021).

Teachers who have received the National Quality Label (NQL) for their eTwinning projects are considered to have used technology effectively according to the second article of the Quality Label evaluation criteria. Teachers who do not receive the NQL but are running an eTwinning project are also expected to work according to these criteria and submit an application for the quality label. Although the contribution of eTwinning activities to teachers in terms of professional development, cooperation and communication skills, and the application of different teaching methods and techniques, as well as ICT skills, has been demonstrated by studies in the literature, it is still a problem that the majority of teachers do not know or understand its importance sufficiently. There is a need to demonstrate the benefits of eTwinning activities for teachers and students in many ways, its importance and necessity for institutions. Regarding the use of technology in education, which has become more important especially during the pandemic process, the question of whether eTwinning projects have an effect on teachers' attitudes towards the use of technology in education or not comes to mind.

In this study, it was aimed firstly to determine the attitudes towards the use of technology in education of teachers working in public and private education and training institutions in Mersin province, who were involved in eTwinning activities and received ICT, and teachers who were newcomers in eTwinning and did not receive ICT yet, secondly to determine whether there is a significant difference between them or not and finally to decide whether eTwinning projects affect teachers' attitudes towards technology use or not.

The research question and sub-questions of this study are as in the followings: Is there a significant difference between the attitudes of teachers who have received the eTwinning NQL and teachers who are newcomers in eTwinning towards the use of technology in education?

- Is there a significant difference in the sub-dimension of the reflection of technology use in education on teaching processes?
- Is there a significant difference in the sub-dimension of self-improvement in the use of technology in education?
- Is there a significant difference in the sub-dimension of technology use in education and classroom management?

2. METHOD

In this section, information about the research method chosen in accordance with the research problem, participants, data collection tools and data analysis are given under subheadings.

2.1. Research Model

This study was conducted in the causal comparison model, which is one of the quantitative research types. Causal comparison studies aim to determine the causes and consequences of differences between groups without intervention on conditions and participants (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz & Demirel, 2018). It is tried to find out the causes of the event or situation that has

emerged in some way and, what is effective, the results of the variable or effect (Büyüköztürk et al., 2018). In this study, without any intervention of the researcher, it was examined whether there was a significant difference between the technology use attitudes of the teachers in the groups that received NQL, and the ones did not receive it.

2.1. Participants

The population of the study consists of teachers working in public and private education institutions in Mersin province and involved in eTwinning.

Criterion sampling method, one of the purposeful sampling methods, was used in the study. The basic understanding of criterion sampling, which is defined as the creation of the sample from people, events, objects or situations with the qualities determined in relation to the problem (Büyüköztürk, 2012) is to study situations that meet a set of predetermined criteria (Yıldırım & Şimşek, 2006). In the study, based on the criterion of being enrolled in eTwinning, 450 teachers participated in the study; 201 of them received NQL between the years 2015 and 2021 and 249 of them were involved in eTwinning but had not received NQL yet.

2.2. Data Collection Tools

The data collection tool used in the study consists of 2 different components. In the first one, a form created by the researcher aimed at to reach the demographic information of the participants was used. In the second one, a five-point Likert-type scale consisting of 39 items developed by Öztürk (2006), named as "Attitude Scale on the Use of Technology in Education" was used.

While 15 of the items in the scale are positive, 24 of them consist of negative sentences. The scoring of positive and negative items in the scale is in the opposite direction. In positive items, the expression "strongly agree" was evaluated as 5 points, while the same expression in negative items was evaluated as 1 point. Table 2 shows the statements and their scores (Öztürk, 2006). Negative items were reverse coding during data analysis.

Table 1. Scores of Positive and Negative Items in the Scale

	Positive Items	Negative Items
Strongly Agree	5 points	1 point
Agree	4 points	2 points
Neutral	3 points	3 points
Disagree	2 points	4 points
Totally Disagree	1 point	5 points

(Öztürk, 2006)

2.3. Validity and Reliability

Cronbach's Alpha coefficient was calculated to determine the reliability of the scale. Cronbach's Alpha coefficient is expressed as a general form of the KR20 formula used in the calculation of the

reliability of items where more than one answer is possible and not scored as true or false (Fraenkel, Wallen, & Hyun, 2012). Öztürk (2006), the developer of the attitude scale used in this study, determined the Cronbach's Alpha coefficient as 0.88 over 60 items in the test form of the scale. Then, after the items were selected and reduced to 39 items, Cronbach's Alpha coefficient was recalculated and found to be 0.90. This result shows that the scale is reliable (Öztürk, 2006).

When the reliability coefficient of the attitude scale was examined during this research, it was calculated as 0,769 in the sub-dimension of reflection of teaching processes of technology use in education: 0,769; in the sub-dimension of self-development in educational technologies: 0,918; in the sub-dimension of technology use in education and classroom management: 0,875; and in the whole attitude scale: 0,92. This coefficient indicates the consistency of the scores of the items with the total test scores (Büyüköztürk et al., 2018). As a matter of fact, Ergin (1995) stated that high reliability coefficient indicates high internal consistency.

2.4. Data Analysis

Statistical analysis of the data obtained in the study was carried out using the SPSS 26 package program. While evaluating the study data, descriptive statistics were calculated (Frequency, Percentage, Mean, Standard deviation) and kurtosis and skewness coefficients were used to check whether the distribution was normal or not. Normality was also tested with the Kolmogorov-Smirnov test. The distribution is not normal in the whole scale and in the sub-dimensions of the scale ($p<0.05$). The Mann-Whitney U test, one of the nonparametric tests, was used to look at the mean scores of the participants in the total scale and in each sub-dimension.

Two-factor ANOVA test was used to determine whether the attitudes of teachers who received and did not receive ICT differed towards the use of technology in education. ANOVA is resistant to normality violation. ANOVA is used for repeated measures of the simultaneous effects of more than one factor on a dependent variable (Büyüköztürk, 1997; Büyüköztürk et al., 2018).

Results were evaluated at 95% confidence interval and significance at $p<0.05$ level. It was examined whether the assumptions of two-way ANOVA analysis (normality, homogeneity of variances, independence of data) were met. Levene's test was used to determine whether the data obtained from the measurement tool met the homogeneity assumption. As a result of the test, it was seen that each significance level was greater than .05, that shows there was no significant difference between the variances of the scores and the variances were homogeneous.

3. FINDINGS

In this section, the results of the analysis of the data obtained from the attitudes towards the use of technology in education scale developed by Öztürk (2006) and applied to the participants are presented. The demographic information of the participants, whether there was a difference between the

attitudes of the teachers who received and did not receive NQL in the whole attitude scale and in each sub-dimension were evaluated and the findings were presented in tables according to the sub-problems. Statistics about the sample are given in Table 3.

Table 3. Statistics on Teachers Participated the Research

		Number	Percentage
Quality Label	Yes	201	44,7
	No	249	55,3
Gender	Female	376	83,6
	Male	74	16,4
Branch	German	2	0,44
	Physical Education	6	1,33
	Information Technology	17	3,78
		Number	Percentage
Branch	Biology	4	0,89
	Geography	2	0,44
	Religion and Morals	1	0,22
	Science	13	2,89
	Physics	1	0,22
	Art	7	1,56
	English	65	14,44
	Chemistry	2	0,44
	Math	23	5,11
	Vocational Education	21	4,67
	Music	1	0,22
	Pre-School Teacher	52	11,56
	Special Needs Education	17	3,78
	Psychological Counselor	12	2,67
	Health Education	1	0,22
	Primary School Teacher	167	37,11
	Social Studies	7	1,56
	History	3	0,67
	Technology and Design	6	1,33
	Turkish Language and Literature	22	4,89
Age	20-35	111	24,7
	36-45	255	56,7
	46 and over	84	18,7
The level of the computer usage	Beginner	28	6,2
	Elementary	330	73,3
	Intermediate	92	20,4

As it can be seen in Table 3, 55.3% of the participants were teachers who did not receive NQL. Regarding gender, 83.6% of the participants were female and 16.4% were male. It is a common situation that the number of female participants is considerably higher than the number of male participants in the samples of the studies conducted on eTwinning activities. In this study, a distribution similar to the samples of other studies was observed. The age range of the participants was 56.7% between 36-45 years. It is seen that the branch with the highest rate of participation in the research (37.11%) is primary school teachers. When the level of computer usage is analyzed, it is seen that 73.3% of the participants are at an intermediate level. 76.4% of the teachers work at the basic education level (pre-primary, primary and secondary school). Participants from all districts of Mersin province were included in the study. Table 4 presents descriptive statistics on teachers' attitudes towards technology use.

Table 4. Descriptive Statistics Related to the Scale

	Number	Min	Max	Average	S. Deviation	Skewness		Kurtosis	
						C.S	S. Error	C.K	S.Error
RPE	450	16	80	75,46	5,89	-3,93	0,12	27,83	0,23
SA	450	14	70	59,43	9,17	-1,38	0,12	3,15	0,23
CA	450	9	45	40,09	5,72	-1,62	0,12	3,54	0,23
Attitude	450	39	195	174,98	16,80	-2,12	0,12	10,23	0,23

The lowest score that can be obtained from the scale is 39 and the highest score is 195. The average score is 174.98. In general, it can be said that the attitudes of the teachers participated in the study towards technology are high. The distribution is skewed to the left in the whole scale and its subscales. Since the study was conducted with teachers involved in eTwinning, it is expected that the distribution is skewed to the left.

Normality was tested with the Kolmogorov-Smirnov test. Normality test results are given in Table 5.

Table 5. The Results of the Normality Test

	Value	Sd	p
Scale 1. Sub-Dimension (Reflection on the Process of Education-RPE)	0,22	450	0,00
Scale 2. Sub-Dimension (Self-Actualization -SA)	0,12	450	0,00
Scale 3. Sub-Dimension (Class Management -CM)	0,20	450	0,00
The Whole Attitude Scale	0,12	450	0,00

The distribution in the whole scale and in the sub-dimensions of the scale is not normal ($p<0.05$). In the study, Mann-Whitney- U test was conducted to analyze at the averages of the scores of the teachers who received IST and those who did not receive NQL in the total scale and in each subscale.

Table 6 shows the mean scores of the teachers in total and each subscale of the scale without being divided into any group. Considering that the highest score that can be obtained from the scale is 195, it is seen that the average scores of the teachers participating in this study are high.

Tablo 6. Participants' Average Score for the Whole Attitude Scale and its Sub-Dimensions

	N	Average
Scale 1. Sub-Dimension (Reflection on the Process of Education -RPE)	450	75,4600
Scale 2. Sub-Dimension (Self-Actualization -SA)	450	59,4267
Scale 3. Sub-Dimension (Class Management -CM)	450	40,0911
The Whole Attitude Scale	450	174,9778

Table 7 shows the mean scores of the teachers in the whole scale and each subscale, divided into two groups as the teachers who were awarded with an eTwinning National Quality Label (NQL) or were not.

Table 7. Average Score of the Whole Attitude Scale and its Sub-Dimensions According to the Participants' Status of Getting NQL or Not

		N	Average	Std. Deviation
Scale 1. Sub-Dimension RPE	Awarded with NQL	201	75,5920	,42912
	Not awarded with NQL	249	75,3534	,36349
	Total	450		
Scale 2. Sub-Dimension SA	Awarded with NQL	201	61,3234	,59026
	Not awarded with NQL	249	57,8956	,60300
	Total	450		
Scale 3. Sub-Dimension CM	Awarded with NQL	201	40,4378	,39936
	Not awarded with NQL	249	39,8112	,36547
	Total	450		
The Whole Attitude Scale	Awarded with NQL	201	177,3532	1,20348
	Not awarded with NQL	249	173,0602	1,03794
	Total	450		

3.1. Attitudes Towards the Use of Technology in Education

The results of the mean scores of the attitudes towards the use of technology in education according to the Mann-Whitney-U test of the teachers who received and did not receive NQL are given in Table 8.

Table 8. Average Score of the Participants' Attitudes Towards the Use of Technology in Education According to Receiving NQL or Not

		N	Average	Std. Deviation
The Whole Attitude Scale	Awarded with NQL	201	177,3532	1,20348
	Not awarded with NQL	249	173,0602	1,03794
	Total	450		

The results of the Mann-Whitney U test regarding whether there is a significant difference in the attitudes of teachers who received and did not receive NQL towards the use of technology in education are given in Table 9.

Table 9. The Results of Mann-Whitney U Test for the Participants' Attitudes Towards to the Use of Technology in Education According to Receiving NQL or Not

The Whole Attitude Scale	N	Average of the rank	Total Rank	U	Z	p
Awarded with NQL	201	249,19	50086,50	20263,500	-,3473	,001
Not awarded with NQL	249	206,38	51388,50			

There is a significant difference between the attitudes towards the use of technology in education of teachers who received and who did not receive IST (Z= -,3473, p<.05). The attitudes towards the use of technology in education score of those who received NQL is higher than the ones who did not receive NQL.

3.2. Findings on Whether There is a Significant Difference in the Reflection of Technology Use Sub-Dimension in Education to the Teaching Processes of Teachers who Received NQL or Not

The average score results of the attitudes towards the use of technology in education of teachers who received NQL or not according to the Mann-Whitney U test are given in Table 10.

Table 10. Average Score of Participants' Attitudes Towards the Reflection of Technology Use in Education on Teaching Processes Sub-Dimension According to Receiving NQL or Not

		N	Average	Std. Deviation
Scale 1. Sub-Dimesion RPE	Awarded with NQL	201	75,5920	,42912
	Not awarded with NQL	249	75,3534	,36349
	Total	450		

Mann-Whitney U test results regarding whether there is a significant difference in the attitudes of teachers who received NQL or not towards the reflection of technology use in education on teaching processes sub-dimension of are given in Table 11.

Table 11. Mann-Whitney U Results for the Reflection of Technology Use in Education on Teaching Processes Sub-Dimension According to the Participants' Status of Receiving NQL or Not

Scale 1. Sub-Dimesion RPE	N	Average Rank	Rank Sum	U	Z	p
Awarded with NQL	201	227,99	45826,50	24523,500	-,371	,711
Not awarded with NQL	249	223,49	55648,50			

There is not a significant difference between the attitudes of teachers who received NQL or the one who did not towards the reflection of technology use in education on teaching processes sub-dimension.

3.2. Findings on Whether There is a Significant Difference between Teachers who Received NQL or Not in Self-Actualization Sub-Dimension on the Technology Use in Education

The average score results of the attitudes of teachers who received NQL or Not in Self-Actualization Sub-Dimension on the Technology Use in Education according to the Mann-Whitney U test are given in Table 12.

Table 12. Average Score of the Participants' Attitudes Towards the Self-Actualization Sub-Dimension on the Use of Technology in Education According to Receiving NQL or Not.

		N	Average	Std. Deviation
Scale 2. Sub-Dimension SA	Awarded with NQL	201	61,3234	,59026
	Not awarded with NQL	249	57,8956	,60300
	Total	450		

Mann-Whitney U test results regarding whether there is a significant difference in the attitudes of teachers who received NQL or not towards the Self-Actualization Sub-Dimension on technology use in education are given in Table 11.

Tablo 13. Mann-Whitney U Results for the Self-Actualization Sub-Dimension on the Use of Technology in Education According to the Participants' Status of Receiving NQL or Not

Scale 2. Sub-Dimension SA	N	Average Rank	Rank Sum	U	Z	p
Awarded with NQL	201	254,40	51134,00	19216,00	-4,242	,000
Not awarded with NQL	249	202,17	50341,00			

There is a significant difference in the attitudes of teachers who received NQL or the one who did not towards the sub-dimension of self-actualization on the use of technology in education.($Z= -4,24$ $p<.05$).

The teachers who received NQL had a higher attitude score towards the self-actualization sub-dimension on the use of technology in education than those who did not.

3.3. Findings on Whether There is a Significant Difference between Teachers who Received NQL or Not in Technology Use in Education and Class Management Sub-Dimension

The average score results of the attitudes of teachers who received NQL or not towards the use of technology in education and class management according to the Mann-Whitney U test are given in Table 14.

Table 14. Average Score of Participants' Attitudes Towards the Use of Technology in Education and Classroom Management Sub-Dimension According to Receiving NQL or Not.

		N	Average	Std. Deviation
Scale 3. Sub-Dimension CM	Awarded with NQL	201	40,4378	,39936
	Not awarded with NQL	249	39,8112	,36547
	Total	450		

Mann-Whitney U test results regarding whether there is a significant difference in the attitudes of teachers who received NQL or Not towards the use of technology in education and class management Sub-Dimension are given in Table 15.

Table 15. Mann-Whitney U Results for the Use of Technology in Education and Classroom Management Sub-Dimension According to Participants' Status of Receiving NQL or Not

Scale 3. Sub-Dimesion CM	N	Average Rank	Rank Sum	U	Z	p
Awarded with NQL	201	234,28	47090,00	23260,000	-1,305	,192
Not awarded with NQL	249	218,41	54385,00			

Any significant difference was not found between the attitudes of teachers who received NQL and the ones who did not, towards the sub-dimension of the reflection of technology use in education on teaching processes (Z= -1,305 p>.05).

3.1.2. Self-Actualization on the Use of Technology in Education Sub-Dimension

According to the Mann-Whitney U test, the results of the mean scores of the attitudes of the teachers who received and did not receive NQL towards the subscale of self-actualization in the use of technology in education are given in Table 16.

Table 16. Average Score of the Participants' Attitudes Towards the Self-Actualization Sub-Dimension in the Use of Technology in Education According to Receiving NQL or Not

		N	Average	Std. Deviation
Scale 2. Sub-Dimension SA	Awarded with NQL	201	61,3234	,59026
	Not awarded with NQL	249	57,8956	,60300
	Total	450		

The results of the Mann-Whitney U test regarding whether there is a significant difference in the attitudes of teachers who received NQL and not towards the subscale of self-actualization on the use of technology in education are given in Table 17.

Table 17. Mann-Whitney U Results for the Self-Actualization Sub-Dimension in the Use of Technology in Education According to the Participants' Status of Receiving NQL or Not

Scale 2. Sub-Dimension SA	N	Average Rank	Rank Sum	U	Z	p
Awarded with NQL	201	254,40	51134,00	19216,00	-4,242	,000
Not awarded with NQL	249	202,17	50341,00			

There is a significant difference in the attitudes of teachers who received NQL and who did not receive it towards the subscale of self-actualization on the use of technology in education (Z= -4,24 p<.05). The attitude score of those who received NQL towards the subscale of self-actualization on the use of technology in education is higher than those who did not receive NQL.

4. DISCUSSION and RESULT

It is thought that the usage of technology has gained importance in the field of education as in many fields, especially during the COVID-19 pandemic process. In addition, the spread of innovative practices in schools, changes in the education policies of countries, and increasing expectations from teachers and students confront teachers with a new situation in which they need to take steps for transformation and development in educational environments. eTwinning activity provides teachers with the opportunity to increase their competencies in this sense and aims to facilitate their transition to this new situation (Bozdağ, 2017; Döğer, 2015; Gajek & Poszytek, 2009; MEB, 2015; Mouratoglou, Scimeca, & Gilleran 2021). Some of its strong features include the fact that the activity is completely free of charge, covers all branches, is flexible despite of being official, and has no bureaucratic burden. eTwinning provides teachers with the opportunity to follow pedagogical innovations by increasing their digital skills and provides students with 21st century skills (Tamer, 2023)

Another positive aspect of eTwinning is being a very safe online platform for teachers and students, a field where they work cooperatively and communicate. In this study, the aim was to contribute to the literature in order to reveal the contributions of eTwinning to teachers regarding the use of technology in education in general, and to reveal the qualifications of the teachers who have reached a certain level of qualification in this activity and who have received NQL. The attitudes of teachers towards the usage of technology in education were investigated according to age, gender, computer usage level of the teachers who received and did not receive NQL.

According to the Mann-Whitney U test, there is a significant difference in the attitude level of using technology in education and the subscale of self-actualization on the use of technology in education when the teachers who have received NQL and the teachers who have just started eTwinning are compared. It is thought that a teacher who has just started an eTwinning process increases his/her knowledge and skills in the period until he/she carries out the process correctly and receives a quality label, and this process positively increases the level of attitude towards the use of technology in education. This result coincides with the finding of Pham et al. (2012) that the project collaboration network of teachers who received the quality label is higher. As Kearney and Gras-Velázquez's (2017) findings show that eTwinning improves teachers' individual skills and accordingly Gözübüyük's (2021) findings also support that eTwinning enables teachers trainings, experience in creating digital content which helped them using online environments to facilitate their transition to the distance education process and advantages. The eTwinning monitoring report also supports the finding that teachers are much more prepared to cope with the pandemic and the sudden emergence of distance education (Mouratoglou, Scimeca, and Gilleran 2021). Bozdağ (2017) states that teachers can use different ICT tools in eTwinning projects depending on the project design and the technological infrastructure of the schools, and additionally especially teachers who are new to using technology in the classroom increase their use of ICT for the first time via eTwinning. Cachia and Punie (2012) also emphasized that teachers are very positive about the use and potential of ICT-supported networks to improve the quality of their work and they also use ICT more widely, especially for collaboration with peers across borders and cultures. Bakır's (2022) finding also support these findings that teachers who are involved in eTwinning have higher mean scores in terms of technology integration and innovative teacher characteristics than those who are not involved in eTwinning. Furthermore, Döğer (2015) states that teachers who participate in eTwinning projects use technology more effectively. The finding also supports that there is a significant positive relationship between the duration of activity in eTwinning and digital literacy on the attitude, technical, cognitive and social sub-dimensions (Gençtürk Erdem et al., 2021). Hellaç Aksu and Reisoğlu (2023) also revealed in their study that the digital competence levels of teachers who received a quality label were higher than those who did not receive a label. After all, Vuorikari, Kampylis, Scimeca, and Punie (2015) state that people who are experienced in eTwinning benefit more from the opportunities of the community and have an increased positive impact.

A part from these findings, there was no significant difference in the reflection of technology use in education on teaching processes and the subscales of technology use in education and classroom management. However, this result does not match with Akdemir's (2017) findings which indicates that eTwinning projects improve teachers' learning and teaching processes. Pratdesaba (2014) stated as well that eTwinning offers teachers and students the opportunity to teach and learn content in a foreign language in collaboration with their colleagues/peers and a suitable environment in which they acquire new ICT skills and students become more self-confident and autonomous. In contrast to findings of this research, Avcı (2021) also reported that technology was used effectively and efficiently in eTwinning activities in the development of teaching-learning processes. Berkant (2013), on the other hand, states that the teacher's positive attitude towards technology increases success in the teaching and learning process.

5.RECOMMENDATIONS

5.1. Recommendations for Implementation

It is believed that eTwinning activities can reach more teachers which enable them to meet with more technology tools and applications, and also reduce the diversity between schools and teachers by increasing the cooperation between them.

The challenges and difficulties that the teachers face can be eliminated with the help of the workings of the teachers in eTwinning activities. Opportunities can be created for these teachers to share their eTwinning experiences with other teachers, too.

Problems related to internet and hardware failures in schools, which is one of the common difficulties encountered in eTwinning activities, can be solved.

eTwinning activities can be spread and offered as an elective course in Faculties of Education. The opportunities can be created for prospective teachers in increasing their personal and professional development while preparing for the profession and working together by communicating with their peers from other universities. Academics involved in eTwinning activities should be supported, too. Trainings can be organized in which these academics and teachers will be in cooperation.

5.2. Recommendations for Researchers

This study is limited to Mersin region so quantitative, qualitative and mixed studies examining different dimensions of eTwinning can be conducted in other cities, too. Research can be conducted on the motivation of teachers in eTwinning activities to continue these activities, which do not require any budget, mobilities to abroad or adequately compensated personal rights (withdrawal of service points etc.). The effects of eTwinning on the processes of students with eTwinning activities in the school level at which they participated in the project to the next level after graduation can be investigated.

The distribution of eTwinning across branches and levels can be studied and the characteristics of this distribution can also be taken into consideration too. Research can be conducted on the reasons and effects why eTwinning is the most crowded country of the community in terms of quality and quantity in Türkiye. The processes and difficulties faced by teachers working in private schools and the substitute teachers regarding eTwinning activities can be examined. How the school administrators' involvement in eTwinning activities affects their management skills and school climate can be investigated. Subject distributions in finished projects in eTwinning can be examined. eTwinning can be included in the curriculum of Faculties of Education and studies can be conducted with prospective teachers. Researches can be conducted on whether eTwinning teachers transfer their experiences to Erasmus+, TUBITAK and other fields, and the connections and contribution of their work in these fields with eTwinning, as well. A study can be conducted with the parents of students regarding eTwinning activities.

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GENİŞLETİLMİŞ TÜRKÇE ÖZET

ETWINNING PROJELERİNDEKİ ÖĞRETMENLERİN EĞİTİMDE TEKNOLOJİ KULLANIM TUTUMLARININ İNCELENMESİ

GİRİŞ

Teknolojinin eğitime entegrasyonu, günümüzde eğitim alanında öncelikli bir konu olarak kabul edilmektedir. Millî Eğitim Bakanlığı'nın (MEB) hedefleri arasında, öğretmen ve öğrencilerin bilişim teknolojileri (BİT) kullanımını artırarak teknolojiyi müfredata entegre etmeleri ve yenilikçi öğretim yöntemlerini kullanmaları yer almaktadır (MEB, 2014). Bu bağlamda, eTwinning projeleri öğretmen ve öğrencilerin BİT kullanımını teşvik eden önemli bir platform olarak öne çıkmaktadır.

eTwinning, Avrupa Komisyonu tarafından geliştirilen ve okulların Avrupa'nın farklı ülkeleriyle çevrim içi iş birliği yapmasına olanak tanıyan bir platformdur. 2005 yılında başlayan bu girişim, günümüzde 46 ülkede faaliyet göstermekte ve öğretmenlerin işbirlikçi projeler gerçekleştirmesine yardımcı olmaktadır (Erasmus+, 2022). Bu platform, eğitimcilerin meslektaşlarıyla fikir alışverişinde bulunmasını, projeler gerçekleştirmesini ve çeşitli mesleki gelişim fırsatlarına katılmasını sağlamaktadır. eTwinning'in önemi, eğitimde dijital teknolojilerin entegrasyonunu desteklemesi ve uluslararası iş birliğini teşvik etmesidir. Eğitim alanında sağlanan bu tür fırsatlar, öğretmenlerin ve öğrencilerin dijital becerilerini geliştirmelerine katkı sağlamaktadır. eTwinning gibi platformlar, Türkiye'nin eğitim hedeflerine ulaşmasında önemli bir rol oynamaktadır. Bu doğrultuda araştırma sorusu ve alt soruları şu şekildedir: "eTwinning Ulusal Kalite Etiketi alan ve eTwinning'e yeni dahil olan öğretmenlerin eğitimde teknoloji kullanımına yönelik tutumları arasında anlamlı fark var mıdır?"

a. Eğitimde teknoloji kullanımının öğretim süreçlerine yansıması alt boyutunda anlamlı fark var mıdır?
b. Eğitimde teknoloji kullanımında kendini geliştirme alt boyutunda anlamlı fark var mıdır?
c. Eğitimde teknoloji kullanımı ve sınıf yönetimi alt boyutunda anlamlı fark var mıdır?

YÖNTEM

Araştırmanın Modeli

Bu çalışma, nicel araştırma türlerinden nedensel karşılaştırma modelinde gerçekleştirilmiştir. Nedensel karşılaştırma araştırmaları, koşullar ve katılımcılar üzerinde müdahale olmaksızın, gruplar arasındaki farklılıkların nedenlerini ve sonuçlarını belirlemeyi amaçlamaktadır (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz ve Demirel, 2018). Bu araştırmada, araştırmacının herhangi bir müdahalesi olmadan, UKE alan ve almayan şeklinde oluşan gruplarda yer alan öğretmenlerin teknoloji kullanım tutumları arasında anlamlı bir fark olup olmadığı incelenmiştir.

Çalışma Grubu

Araştırmanın çalışma grubunu Mersin ilindeki resmi ve özel eğitim-öğretim kurumlarında görev yapan, 2015-2021 yılları arasında UKE alan 201 öğretmen ile eTwinning'e dahil olup henüz UKE almayan 249 öğretmen olmak üzere 450 öğretmenden oluşmaktadır.

Veri Toplama Aracı

Veriler araştırmacı tarafından oluşturulan katılımcıların demografik bilgilerine ulaşmayı amaçlayan bir form kullanılmıştır. İkinci kısımda ise Öztürk (2006) tarafından geliştirilen beş dereceli likert tipi, 39 maddeden oluşan "Eğitimde Teknoloji Kullanımına İlişkin Tutum Ölçeği" ile toplanmıştır.

Verilerin analizi

Çalışma verileri değerlendirilirken betimleyici istatistikler hesaplanmış ve dağılımın normal olup olmadığına bakmak için de basıklık, çarpıklık katsayıları kullanılmıştır. Kolmogorov-Smirnov testi ile normallik test edilmiştir. Ölçeğin tamamında ve ölçeğin alt boyutlarında dağılım normal değildir ($p<0,05$). Katılımcıların, ölçeğin toplamında ve her bir alt boyutta aldıkları puanların ortalamalarına bakmak için parametrik olmayan testlerden Mann Whitney U testi yapılmıştır. UKE alan ve almayan öğretmenlerin eğitimde teknoloji kullanımına yönelik tutumlarının farklılaşıp farklılaşmadığını belirlemek için iki faktörlü ANOVA testi kullanılmıştır.

BULGULAR

UKE alan ve almayan öğretmenlerin, eğitimde teknoloji kullanımına yönelik tutumları arasında anlamlı bir fark vardır ($Z= -,3473$, $p<.05$). UKE alanların eğitimde teknoloji kullanım tutum puanı, almayanlara göre daha yüksektir. UKE alan ve almayan öğretmenlerin eğitimde teknoloji kullanımının öğretim süreçlerine yansıması alt boyutuna yönelik tutumları arasında anlamlı bir fark bulunamamıştır ($Z= -,371$ $p>.05$). UKE alan ve almayan öğretmenlerin eğitimde teknoloji kullanımında kendini geliştirme alt boyutuna yönelik tutumlarında anlamlı bir fark vardır ($Z= -4,24$ $p<.05$). UKE alanların eğitimde teknoloji kullanımında kendini geliştirme alt boyutuna yönelik tutum puanı, almayanlara göre daha yüksektir. UKE alan ve almayan öğretmenlerin eğitimde teknoloji kullanımının öğretim süreçlerine yansıması alt boyutuna yönelik tutumları arasında anlamlı bir fark bulunamamıştır ($Z= -1,305$ $p>.05$).

TARTIŞMA, SONUÇ ve ÖNERİLER

Araştırmanın bulgularında; UKE alan öğretmenler ile eTwinning'e yeni başlayan öğretmenler karşılaştırıldığında, eğitimde teknoloji kullanım tutum düzeyi ve eğitimde teknoloji kullanımında kendini geliştirme alt boyutunda anlamlı fark olduğu görülmektedir. Bu sonuç Pham ve diğerlerinin (2012) kalite etiketi alan öğretmenlerin proje iş birliği ağının yüksek olduğu bulgusuyla örtüşmektedir. Kearney ve Gras-Velázquez'in (2017), eTwinning'in öğretmenlerin bireysel becerilerini geliştirdiği bulguları; Gözübüyük'ün (2021) ise eTwinning öğretmenlerinin aldıkları eğitimler, dijital içerik oluşturma tecrübeleri, çevrim içi ortamları zaten kullanıyor olmalarının uzaktan eğitim sürecine geçişlerini kolaylaştırdığını, hatta avantaj sağladığı yönündeki bulguları da bu sonucu desteklemektedir.

eTwinning izleme raporunda da öğretmenlerinin pandemi ve aniden ortaya çıkan uzaktan eğitim ile başa çıkma konusunda daha hazırlıklı olduğu bulgusu da bunu desteklemektedir (Mouratoglou, Scimeca ve Gilleran 2021). Bozdağ (2017) ise eTwinning projeleri içinde proje tasarımına ve okulların teknolojik altyapılarına bağlı olarak öğretmenlerin farklı BİT araçları kullanabildiklerini ve özellikle sınıfta teknoloji kullanmaya yeni başlayan öğretmenlerin ilk defa eTwinning yoluyla BİT kullanımlarının arttığını belirtmektedir. Cachia ve Punie (2012) de, öğretmenlerin çalışmalarının kalitesini artırmak için BİT destekli ağların kullanımı ve potansiyeli konusunda oldukça olumlu baktıklarını, özellikle sınırlar ve kültürler arasında akranlarıyla iş birliği için BİT' in daha yaygın bir şekilde kullandıklarını vurgulamıştır. Bakır'ın (2022) ulaştığı, eTwinning'e dahil öğretmenlerin dahil olmayanlara göre teknoloji entegrasyonu ile yenilikçi öğretmen özellikleri yönünden daha yüksek puan ortalamasına sahip olduğu bulgusu da bu sonucu desteklemektedir. Döğer (2015), eTwinning projesine katılan öğretmenlerin teknolojiyi daha etkin kullandığını belirtmektedir. Hellaç Aksu ve Reisoğlu'nun (2023) çalışmasında da kalite etiketi alan öğretmenlerin dijital yeterlik düzeylerinin etiket almayanlara göre daha yüksek olduğu ortaya konmuştur.

eTwinning öğretmenlerin, dijital becerilerini artırarak, pedagojik yenilikleri takip etme fırsatı sunmakta ve öğrencilere 21. yüzyıl becerileri kazandırmaktadır (Tamer, 2023) eTwinning'te aktiflik süresi ile dijital okuryazarlığın tutum, teknik, bilişsel ve sosyal alt boyutları arasında pozitif yönde anlamlı bir ilişkinin olması da bulguyu desteklemektedir (Gençtürk Erdem ve diğerleri, 2021).

Bununla birlikte eğitimde teknoloji kullanımının öğretim süreçlerine yansıması ve eğitimde teknoloji kullanımı ve sınıf yönetimi alt boyutlarında anlamlı bir fark görülmemiştir. Ancak bu sonuç, Akdemir'in (2017) eTwinning projelerinin öğretmenlerin öğrenme ve öğretme süreçlerini geliştirdiği bulgularıyla örtüşmemektedir. Pratdesaba (2014), eTwinning'in öğretmenlere ve öğrencilere, meslektaşları/akranları ile iş birliği içinde bir yabancı dilde içerik öğretme ve öğrenme fırsatı ile yeni BİT becerileri kazandıkları uygun bir ortam sunduğunu, öğrencilerin daha özgüvenli ve özerk hale geldiği sonucuna ulaşmıştır. Avcı da (2021), eTwinning faaliyetlerinde teknolojinin etkili ve verimli kullanıldığı, öğretme-öğrenme süreçlerinin geliştirilmesini sağladığını raporlayarak bu bulgudan farklı bir sonuç ortaya koymuştur. Berkant (2013) ise çalışmasında, öğretmenin teknolojiye yönelik olumlu tutumunun, öğrenme ve öğretme sürecinde başarıyı arttırdığını ifade etmektedir. eTwinning faaliyetinin daha fazla öğretmene ulaşması, öğretmenlerin daha fazla teknoloji araçları ve uygulamaları ile buluşmalarını, okullar arasındaki farklılıkların daha da azalmasını ve aralarındaki işbirliğinin artmasını sağlayabilir. eTwinning faaliyetindeki öğretmenlerinin çalışmaları daha fazla desteklenebilir ve karşılaştıkları zorluklar ve olumsuzluklar giderilebilir. Bu çalışma Mersin ili ile sınırlıdır. Diğer illeri de kapsayan eTwinning'in farklı boyutlarını inceleyen nicel, nitel ve karma çalışmalar yapılabilir.

Anahtar kelimeler: Eğitimde teknoloji kullanımı, eTwinning, teknoloji entegrasyonu, eğitimde teknoloji kullanımına yönelik tutum, ulusal kalite etiketi

EJAES

JOURNAL OF ADVANCED EDUCATION STUDIES

İleri Eğitim Çalışmaları Dergisi

6(2): 79-91, 2024

AN EXAMINATION OF ACADEMIC RESEARCH ON TEACHER BURNOUT

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Geliş Tarihi/Received: 29.11.2024 Elektronik Yayın / Online Published: 15.12.2024

DOI: 10.48166/ejaes.1592056

ABSTRACT

The aim of this study is to examine accessible doctoral and postgraduate theses, as well as articles on teachers' professional burnout in Turkey between 2010 and 2023. In this qualitative research, data were analyzed through content analysis. The study was conducted using 6 doctoral theses and 118 postgraduate theses accessible from the Higher Education Council (YÖK) National Thesis Center and 50 articles accessible from the National Academic Network and Information Center (ULAKBİM). The findings were explained using descriptive analysis tools such as numerical and percentage values. Subsequently, tables were presented to illustrate these studies. According to the results obtained from the study, it was found that the highest number of doctoral theses were conducted in the years 2018, 2019, and 2020, the highest number of master's theses were in 2019, and the highest number of articles were published in the years 2021, 2022, and 2023. In terms of research methods, quantitative methods were predominantly used, while the number of studies conducted using qualitative methods was limited., It is essential to increase the number of studies conducted using mixed and qualitative methods to ensure the comprehensiveness, reliability, and validity of findings regarding burnout.

Keywords: Teacher, burnout, professional burnout.

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ÖĞRETMENLERİN MESLEKİ TÜKENMİŞLİKLERİ ALANINDA YAPILAN AKADEMİK ÇALIŞMALARIN İNCELENMESİ

ÖZET

Bu çalışmanın amacı, 2010–2023 yılları arasında Türkiye'de öğretmenlerin mesleki tükenmişlikleri konusunda yapılan araştırmalardaki eğilimi belirlemektir. Nitel araştırma yönteminin kullanıldığı bu çalışmada veriler içerik analiziyle çözümlenmiştir. Çalışma, Yükseköğretim Kurulu (YÖK) Ulusal Tez Merkezi sitesinden ulaşılabilen 6 doktora tezi ve 118 lisansüstü tezi ve (ULAKBİM) Ulusal Akademik Ağ ve Bilgi Merkezi ulaşılabilen 50 makale üzerinden yürütülmüştür. Elde edilen bulgular betimleyici analiz araçlarından sayı ve yüzde değerleriyle açıklanmıştır. Daha sonra tablolarla bu çalışmalar sunulmuştur. Ulaşılan temel bulgulara bakıldığında; en fazla doktora tezi 2018, 2019, 2020 yıllarında, en fazla yüksek lisans tezinin 2019 yılında yapıldığı ve en fazla makalenin ise 2021,2022,2023 yıllarında yayımlandığı bulunmuştur. Elde edilen verilere göre bu çalışmalarda daha çok nicel araştırma yöntemlerine başvurulurmuştur. Nitel yöntemle yapılan çalışma sayısı çok azdır. Tükenmişlik konusundaki bulguların daha kapsamlı, güvenilir ve geçerli olabilmesi için karma yöntemlerle ve nitel yöntemlerle yapılacak olan çalışmaların artırılması gerekmektedir.

Anahtar Kelimeler: Öğretmen, tükenmişlik, mesleki tükenmişlik.

1. INTRODUCTION

Teachers should guide students' academic and social growth and shape the changing dynamics of education and social expectations. This proud professional community faces numerous challenges arising from the complex interaction of factors such as heavy workloads, student behavior, working conditions, administrative policies, and personal factors. Teachers are facing burnoutdue to a variety of challenges including disciplinary problems, overcrowded classrooms, bureaucratic tasks, difficulties in communicating with parents, lack of materials,role confusion, fear of violence, classroom management issues, and unsupportive administrators. Burnout resulting from these challenges can cause teachers to experience physical, emotional, and cognitive exhaustion, making it difficult to create effective teaching and learning environments in the classroom.

Burnout was first defined by Freudenberger (1974) as a "state of exhaustion" caused by failure, depletion, and wearing out, loss of energy and strength, or unmet internal resource needs. While Pines and Aronson (1988) defined burnout as a loss of enthusiasm, energy, idealism and perspective, Shirom (2003) defined burnout as a loss of purpose and stated that its basic theme is personal. Burnout is defined as a state of inconsistency between what one wants to do and what one has to do, or between the individual and their overall situation (Maslach & Leiter, 2005). According to Maslach (2003), burnout is a psychological syndrome that develops over a long period of time as a reaction to factors that create on-site stress and increase. Burnout is more common among individuals in communication groups that are responsible for conveying information about events. Doctors, nurses, police officers, managers, dentists, hotel staff, nannies, bank employees, psychologists, traffic coordinators, sales representatives, school principals are examples of these professional groups (Dalkılıç, 2014, 17). Due to this problem, burnout is considered a widespread issue among various professional groups as well as employees in

general. Burnout is an important phenomenon related to behaviors within the teaching process and teacher-student relationships (Maslach & Gomes, 2006). Burnout is considered a common condition, especially among professionals, and 80% of the professional population may experience burnout syndrome in their working lives (Işıkhan, 2017). The teaching profession can be considered one of the professional groups at risk of burnout (Işıkhan, 2017). Due to the importance of the teaching profession and the risk of burnout, numerous studies have been conducted on teacher burnout (Akçamete, Kaner, & Sucuoğlu, 2001; Cinay, 2015; Erdemoğlu, 2007; Girgin, 2010; Koralay, 2014).

In this context, the aim of this study is to examine the trends in teacher burnout research by investigating master's theses produced in the field of educational sciences in terms of the context of subject, method, and analysis techniques.

The problem statement and sub-problems of the research are as follows.

Problem Statement

What is the trend in studies conducted between 2010 and 2023 in the field of professional burnout among teachers?

Sub-Problems

1. What is the temporal distribution of the studies?
2. What is the typology of publications in the study?
3. What is the linguistic distribution of the studies?
4. What is the methodological distribution of the studies?

2. METHOD

2.1. Research Design and Methods

The study aimed to demonstrate the trend of research conducted between 2010 and 2023. A simple content analysis method was used to determine the trend in the studies. Open access master's theses, doctoral dissertations, and articles published between 2010 and 2023 were collected for the study. These studies were coded and tabulated according to sub-problems. This study employed a descriptive survey design. A descriptive content analysis method, deemed suitable for the study's objectives, was utilized. This is because content analysis is inherently interconnected. Content analysis involves bringing together similar data, organizing it within a specific conceptual framework, and presenting it to the reader in a clear and understandable manner (Creswell, 2013). Content analysis is used in four stages to process qualitative research data obtained from documents: (1) data coding, (2) finding themes, (3) organizing codes and themes, (4) ensuring validity and reliability by calculating frequency, and (5) defining and interpreting the results (Denzin and Lincoln, 2011). Both quantitative and qualitative studies were examined and analyzed using descriptive content analysis. General trends in the field were identified (Çalık and Sözbilir, 2014; Selçuk, Palancı, Kandemir, and Dündar, 2014). This study conducted a content analysis of both quantitative and qualitative studies, as well as an examination of

research on teacher burnout. The results of the study were evaluated.

2.2. Scope and Process of the Research

The scope of this study consists of accessible master's theses and articles on teacher burnout published between 2010 and 2023. To identify trends, a particular focus was placed on recent studies. Master's theses on teacher burnout were accessed through The Council of Higher Education Center (YÖK) thesis search engine and Google Scholar using keywords such as "burnout," "teacher," and "professional burnout." The most recently uploaded master's theses, doctoral dissertations, and articles were included in the study. A total of 118 master's theses, 6 doctoral dissertations and 50 articles constituted the study group (documents). There are many independent studies on almost every topic in the literature. While these independent studies provide significant contributions to researchers, it is equally important to evaluate the effect sizes, analyses, identifications, findings and results together. The abundance of studies in the literature can lead to certain problems. While the results obtained may overlap, they can also be contradictory. Therefore, the results of content or meta-analysis based on studies conducted on a specific topic provide significant convenience to researchers. In addition, Çalık and Sözbilir (2014) stated that those who do research on any topic can use their time better and will not have to deal with workloads such as examination and analysis. The studies included in this research consist of those related to teacher burnout. The earliest study in the scope was reached in 2010 and the latest in 2023.

2.3. Data Analysis

Open-access master's and doctoral theses, as well as articles published between 2010 and 2023, were collected. These studies were coded and tabulated according to sub-problems. This study employed a descriptive content analysis method, consistent with its research objectives. 118 master's theses, 6 doctoral dissertations, and 50 articles, were included in this study. Studies conducted between 2010 and 2023 on teacher burnout were examined based on their research methodology (qualitative, quantitative, mixed methods). The number and percentage of studies using each method were tabulated, and the findings were interpreted below each table.

3. FINDINGS

The findings section of the study presents analyses of studies based on various variables and the results obtained. Study findings were analyzed based on sub-problems and research questions. In this context, the distribution according to years, publication type, language and research method was explained, tabulated and interpreted in a separate subsection.

Table 1. Distribution of Accessible Studies on Teacher Burnout Between 2010 and 2023 by Year

Year	Master's Thesis		Doctoral Dissertation		Articles		Sum	
	Number	Percentage	Number	Percentage	Number	Percentage	Sum	Percentage
2010	3	2.5%	0	0%	0	0%	3	1.7%
2011	3	2.5%	0	0%	0	0%	3	1.7%
2012	3	2.5%	1	16.6%	1	2%	5	2.8%
2013	7	5.9%	0	0%	1	2%	8	4.5%
2014	9	7.6%	1	0%	1	2%	11	6.3%
2015	8	6.7%	0	0%	2	4%	10	5.7%
2016	6	5%	0	0%	3	6%	9	5.1%
2017	10	8.4%	0	0%	3	6%	12	6.8%
2018	11	9.3%	1	16.6%	2	4%	14	8%
2019	17	14.4%	1	16.6%	4	8%	22	12.6%
2020	10	8.4%	1	16.6%	6	12%	17	9.7%
2021	8	6.7%	1	16.6%	11	22%	20	11.4%
2022	10	8.4%	0	0%	11	22%	21	12.0%
2023	13	11%	1	16.6%	6	12%	20	11.4%
Sum	118	67%	6	3.4%	50	28.7%	174	

Teacher burnout is a relatively new research area in the literature. As seen in the table, research on teacher burnout in Turkey has emerged in recent years. As shown in Table 1, the highest number of publications, 12.6%, was observed in 2019, while the lowest number of publications, 1.7%, was observed in 2010-2011. As seen in Table 1, out of the total 174 accessible studies, the highest number of publications, 12.6%, was observed in 2019, while the lowest number of publications, 1.7%, was observed in 2010-2011. The distribution of publications was as follows: 2.8% in 2012, 4.5% in 2013, 6.3% in 2014, 5.7% in 2015, 5.1% in 2016, 6.8% in 2017, 8% in 2018, 12.6% in 2019, 9.7% in 2020, 11.4% in 2021, 12.0% in 2022, and 11.4% in 2023. Notably, there were more than 20 studies conducted after 2019.

Table 2. Distribution of Accessible Studies on Teacher Burnout Between 2010 and 2023 by Publication Type

Publication Type	Master's Thesis	Doctoral Dissertation	Articles	Sum
Number	118	6	50	174
Percentage	67.8%	3.4%	28.7%	

According to Table 2, when the distribution of accessible studies on teacher burnout between 2010 and 2023 is examined by publication type, it is observed that out of the total 174 studies, the highest percentage, 67.8%, consisted of master's theses, followed by 28% of articles, and the lowest percentage, 3.4%, consisted of doctoral dissertations. As seen, more than half of the studies were master's theses. Doctoral dissertations constituted the smallest proportion of studies and articles constituted the middle ground.

Table 3. Distribution of Accessible Studies on Teacher Burnout Between 2010 and 2023 by Publication Language

Publication Language	**Master's Thesis (118)**		**Doctoral Dissertation (6)**		**Articles (50)**	
	Number	**Percentage**	**Number**	**Percentage**	**Number**	**Percentage**
English	3	2.5%	2	33%	50	100%
Turkish	118	100%	6	100%	50	100%

It was observed that all accessible publications were in Turkish. The total number of publications in both Turkish and English was 55. English language publications accounted for 55.1% of the total. 2.5% of master's theses were in English, while 100% were in Turkish. 33% of doctoral dissertations were in English, while 100% were in Turkish. All articles were published in both Turkish and English.

Table 4. Distribution of Accessible Studies on Teacher Burnout Between 2010 and 2023 by Research Method

Research Method	**Qualitative Method**		**Quantitative Method**		**Mixed Methods (Qualitative-Quantitative)**	
	Number	**Percentage**	**Number**	**Percentage**	**Number**	**Percentage**
Master's Thesis	17	14%	74	62%	25	21%
Doctoral Dissertation	2	33%	3	50%	3	50%
Article	3	6%	40	80%	7	14%

Descriptive research aims to describe a particular phenomenon as it is, using quantitative, qualitative, or mixed methods. Our content analysis study employed a descriptive research design.

It was observed that 117 studies, representing 67% of the total, were conducted using quantitative methods, 22 studies (12%) employed qualitative methods, and 35 studies (20.1%) utilized mixed methods. When the findings examined, it was seen that quantitative methods were most

frequently used in master's theses, accounting for 62%, while qualitative methods were least common at 14%, and mixed methods were employed in 21% of master's theses. In doctoral dissertations, qualitative methods were the least common, representing 33%, while quantitative and mixed methods were equally distributed at 50% each. For articles, quantitative methods were most frequently used, accounting for 80%, while qualitative methods were least common at 6%, and mixed methods were employed in 14% of the studies.

4. DISCUSSION

There have been many studies on burnout syndrome, which is commonly seen in professions that involve close interaction with people, including the teaching profession. Occupations that involve frequent face-to-face interactions with individuals are at a higher risk of burnout. It can be said that teaching is one of the professions most likely to experience burnout. Teachers are expected to teach students well and to ensure that they can establish a profession with what they have learned in the future. When expectations that do not find a counterpart accumulate against so many demands, the body may react. While this reaction may be acceptable in the early stages, it can lead to burnout over time (Akçamete and Sucuoğlu, 2001). In the 11th Revision of the International Classification of Diseases, published in 2019, the World Health Organization (WHO) categorized burnout as an occupational phenomenon and acknowledged it as a factor affecting health. It has been stated that burnout levels can be reduced by identifying the causes of burnout and eliminating these causes. Bilici (2017) emphasized that burnout is a significant problem for academics and administrative staff working in educational institutions. It has been stated that identifying the factors contributing to burnout is crucial for improving the quality of education. It can be said that research on this topic has intensified significantly since 2010, with a noticeable increase in recent years. Turkey's growing visibility on the global stage in recent years is thought to be related to economic advancements, cultural awareness, rising demand for foreign students, and increased personal mobility.

As in general research on educational management a positivist perspective dominates burnout research. As with positivist positivist quantitative research, burnout research often faces challenges such as "sampling, collecting sufficient data and the validity and reliability of data collection tools" (Yılmaz, 2020). In this context, burnout studies are often confined to numerical data, reducing the complex human experience of burnout to quantitative explanations. Additionally, these studies tend to prioritize methodology and analysis over the nuances of the phenomenon.

5. RESULTS

When the distribution of studies on teacher burnout published between 2010 and 2023 is examined by type, it is found that 118 master's theses were the most common, followed by 50 articles and doctoral theses were the least common. The limited number of doctoral theses compared to master's theses and articles in the studies examined can be attributed to factors such as limited availability of doctoral programs, a lack of academic career goals and the perceived difficulty and length of the doctoral process compared to master's programs.

When examining the distribution of doctoral and master's theses and articles published from since 2010, it is observed that, particularly for master's theses, there has been a significant increase in the number of studies published after 2013. The highest number of publications was observed in 2019. It is believed that the inability to go outside due to the COVID-19 pandemic in 2019 may have influenced research activities. Doctoral theses, on the other hand, exhibit a more normal distribution, which may be due to the smaller number of doctoral studies. The increasing number of master's theses on burnout can be explained by the frequent changes in Turkish education and teaching practices. Due to the increasing prevalence and relevance of burnout in modern society, it is thought that researchers in the education sector are paying more attention to this topic as it has a significant impact on both individualsand society. It is believed that the increase in the number of master's degrees over the thirteen-year period is due to factors such as the proliferation of universities, increased educational level in society, advancements in technology and science, changing human needs and expectations and social status.

When examining the distribution of articles by year, it was observed that the highest number of publications occurred in 2021 and 2022. No publications were found for 2010 and 2011. Moreover, there has been a clear upward trend in the number of publications since 2012. It has been determined that there has been a significant increase in the number of studies on burnout syndrome in educational organizations in recent years.

When examining the distribution of preferred research methods in doctoral and master's theses and articles, it was found that quantitative research and mixed methods were the most preferred methods in doctoral theses, with a preference rate of 50%, while qualitative research was the least preferred method. In master's theses, quantitative research was the most preferred method with a rate of 74%, followed by mixed methods (qualitative-quantitative) with 21%, while qualitative research was the least preferred method with 14%.

It was observed that quantitative research was the most frequently used research method in the examined articles, accounting for 80% of the studies. Qualitative research, on the other hand, was the least common method, representing for only 6%. The high preference for quantitative research in these studies is thought to be due to the belief that numerical data provides a more objective measure of the behaviors being studied. Quantitative methods, especially surveys, enable researchers to gather a larger amount of data and reach a broad population in a shorter period. In today's world, this process has

become even easier with the use of email. It is also time-efficient for the study group to answer ready-made surveys and for these answers to be evaluated statistically. The Maslach Burnout Inventory is a widely used, highly reliable, and easily accessible scale, especially for studying burnout. For this reason, quantitative methods have been preferred in studies. Using qualitative methods in studies is more difficult and time-consuming. For instance, scheduling appointments for interviews is necessary. For a researcher conducting the evaluation, reaching a conclusion from qualitative research is more challenging and time-consuming. Quantitative methods have been used most frequently in theses and articles focusing on burnout syndrome in educational organizations. It has been observed that the number of studies using mixed methods (quantitative-qualitative) is lower. This situation can also be explained by research practices.

When analysing of the language distribution in doctoral and master's theses, it is observed that Turkish is the predominant language in the examined graduate theses, while English is the least used. Although articles are published in both Turkish and English, Turkish remains the primary language of publication. It is a notable finding that researchers conducting studies in foreign languages are predominantly from foreign language departments. The number of studies on burnout syndrome in educational organizations conducted in foreign languages is relatively low.

Recommendations

In view of the research findings, the following recommendations are proposed:

- Since the number of doctoral dissertations on burnout syndrome in educational institutions is quite low compared to other studies, it can be supported to increase the number of studies.
- Research based on content analyses across different time periods could be supported and systematized to explore the evolving trends of burnout syndrome within educational institutions.
- Educational institutions should benefit more from qualitative or mixed methods research to obtain more comprehensive, valid, and reliable findings regarding burnout syndrome.
- A wider range of data collection tools can be used in research on burnout syndrome in educational institutions.
- School counselors should have the opportunity to conduct burnout research.
- It has been observed that research on burnout syndrome in educational institutions has primarily focused on exploring the current state; it is recommended that future studies should adopt a more solution-focused approach.
- The Ministry of National Education's Guidance and Research Center should conduct surveys and organize meetings with teachers and students in educational institutions to identify and address the issue of school burnout syndrome.
- Since the World Health Organization (WHO) classified burnout as an occupational phenomenon in 2020, educational institutions, teachers, and school administrators must prioritize addressing this issue. In-service training and workshops on burnout should be conducted on this topic.

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GENİŞLETİLMİŞ TÜRKÇE ÖZET

ÖĞRETMENLERİN MESLEKİ TÜKENMİŞLİKLERİ ALANINDA YAPILAN AKADEMİK ÇALIŞMALARIN İNCELENMESİ

Öğretmenler öğrencilerin akademik ve sosyal gelişimlerine rehberlik ederken aynı zamanda değişen eğitim dinamikleri ve toplumsal beklentilere de yön vermelidir. Bu gururlu profesyonel topluluk, ağır iş yükleri, öğrenci davranışları, çalışma koşulları, yönetim politikaları ve kişisel faktörler gibi faktörlerin karmaşık etkileşiminden kaynaklanan birçok zorlukla karşı karşıyadır. Öğretmenler; disiplin sorunları, sınıfların kalabalık olması, bürokratik işler, ebeveynlerle iletişimde zorluk, malzeme eksikliği, rol karmaşası, şiddet korku, sınıf kontrolünün eksikliği ve yardımcı olmayan müdürler gibi sorunlarla yüzleşirken tükenmişlik yaşamaktadır. Bu zorluklardan kaynaklanan tükenmişlik, öğretmenlerin fiziksel, duygusal ve bilişsel olarak zayıflamasına neden olarak sınıftaki etkili öğretme ve öğrenme ortamlarını zorlaştırabilmektedir. Tükenmişlik, öğretim sürecindeki davranışlar ve öğretmen-öğrenci ilişkileriyle ilgili önemli bir olgudur (Maslach & Gomes, 2006). Tükenmişlik, özellikle profesyonel kesim arasında yaygın bir durum olarak kabul edilmekte ve profesyonel nüfusun %80'i çalışma hayatında tükenmişlik sendromuyla karşı karşıya kalabilmektedir (Işıkhan, 2017). Öğretmenlik mesleği tükenmişlik açısından risk altındaki meslek gruplarından biri olarak değerlendirilebilir (Işıkhan, 2017). Öğretmenlik mesleğinin önemi ve tükenmişlik riski nedeniyle öğretmen tükenmişliği üzerine birçok araştırma yapılmıştır (Akçamete, Kaner ve Sucuoğlu, 2001; Cinay, 2015; Erdemoğlu ve Şahin, 2007; Girgin, 2010; Koralay, 2014).

Bu doğrultuda çalışmanın amacı, öğretmenlerde mesleki tükenmişlik araştırmalarındaki eğilimi, eğitim bilimleri alanında üretilen lisansüstü tezleri konu, yöntem ve analiz teknikleri bağlamında incelemektir. Araştırmanın problem cümlesi ve alt problemler şu şekildedir.

Problem Cümlesi

Öğretmenlerde mesleki tükenmişlik alanında 2010-2023 yılları arasında yapılan çalışmalarda eğilim nasıldır?

Alt Problemler

1- Çalışmaların yıllara göre dağılımı nasıldır?

2- Çalışmaların yayın türüne göre dağılımı nasıldır?

3- Çalışmaların yayın diline göre dağılımı nasıldır?

4- Çalışmaların araştırma yöntemine göre dağılımı nasıldır?

YÖNTEM

Araştırmanın Deseni ve Yöntemi

Araştırmanın deseninde 2010-2023 yılları arasındaki araştırmaların eğilimini göstermek amaçlanmıştır. Araştırmalardaki eğilimi belirlemek için basit içerik analizi yöntemi kullanılmıştır. 2010-

2023 yılları arasındaki erişime açık yüksek lisans, doktora tezi, makale çalışmaları toplanmıştır. Bu çalışmalar kodlanmış ve alt problemlere göre tablolaştırılmıştır. Bu çalışma tarama modelli bir çalışmadır. Çalışmamızın amacına uygun değerlendirilen betimsel içerik analizi yöntemi kullanılmıştır. Çünkü içerik analizi çalışması birbiriyle bağlantılıdır. İçerik analizi, dokümanlardan elde edilen nitel araştırma verilerinin işlenmesinde dört aşamada kullanılır: (1) Veri kodlama, (2) tema bulma, (3) kod ve temaları düzenleme, (4) geçerlik güvenilirliği sağlayan, sıklığı hesaplama (5) sonuçları tanımlama ve yorumlama. (Denzin ve Lincoln, 2005). Nicel ve nitel çalışmalar betimsel içerik analizi kullanılarak incelenmiş ve analiz edilmiştir. Bu alandaki genel eğilimler tespit edilmiştir (Çalık ve Sözbilir, 2014; Selçuk, Palancı, Kandemir ve Dündar, 2014). Bu çalışmada nicel ve nitel çalışmaların içerik analizi ve öğretmenlerde mesleki tükenmişlik araştırmalarının bir incelemesi yapılmıştır. Çalışma sonuçları değerlendirilmiştir.

Araştırmanın Kapsam ve Süreci

Bu çalışmanın kapsamını 2010-2023 yılları arasındaki Öğretmenlerde Mesleki Tükenmişlik alanında hazırlanmış erişilebilen lisansüstü tezler ve makaleler oluşturmaktadır. Bu yöndeki eğilimi belirlemek amacıyla özellikle son yıllarda hazırlanan çalışmalar seçilmiştir. Öğretmenlerde Mesleki Tükenmişlik alanındaki tezlere anahtar kelimeler ‘tükenmişlik’, ‘öğretmen’, ‘mesleki tükenmişlik’ girilerek YÖK (Ulusal Tez Merkezi) tez tarama ve Google akademi sayfasından ulaşılmıştır. En son yüklenen yüksek lisans, doktora tezi ve makaleler incelemeye alınmıştır. Bu çalışmada kullanılan 118 yüksek lisans ve 6 doktora tezi ile 50 makale çalışma (doküman) grubunu oluşturmaktadır. Araştırmada analiz edilmek üzere kapsama alınan çalışmalar, Öğretmenlerde mesleki tükenmişlik ile ilgili araştırmalardan oluşmaktadır. Söz konusu amaca yönelik olarak ilk çalışmaya 2010, en son çalışmaya 2023 tarihinde ulaşılmıştır.

Verilerin Analizi

2010-2023 yılları arasındaki erişime açık yüksek lisans ve doktora tezleri ile makale çalışmaları toplanmıştır. Bu çalışmalar kodlanmış ve alt problemlere göre tablolaştırılmıştır. Bu çalışma tarama modelli bir çalışmadır. Çalışmamızın amacına uygun değerlendirilen betimsel içerik analizi yöntemi kullanılmıştır. Bu çalışmada kullanılan 118 yüksek lisans ve 6 doktora tezi ile 50 makale çalışma (doküman) grubunu oluşturmaktadır. Öğretmenlerde mesleki tükenmişlik alanında 2010-2023 yılları arasında yapılan çalışmalar araştırma yöntemine göre (nitel, nicel, karma yöntem) incelenmiş sayı ve yüzde oranları ile tablolaştırılmıştır. Her tablonun altına bulgularla ilgili yorumlama yapılmıştır.

BULGULAR ve SONUÇ

Öğretmenlerde mesleki tükenmişlik, alan yazında oldukça yeni bir araştırma alanıdır. Türkiye’deki Öğretmenlerde mesleki tükenmişlik araştırmaları ise görüldüğü gibi son yıllara dayanmaktadır. Tablo 1’de görüldüğü gibi erişilebilen toplam 174 çalışmadan en fazla yayın %12,6 ile 2019 yılında, en az yayın ise 2010-2011 yıllarında %1,7 ile görülmektedir. 2012 yılında %2,8, 2013 yılında %4,5, 2014 yılında %6,3, 2015 yılında %5,7, 2016 yılında %5,1, 2017 yılında %6,8, 2018 yılında %8, 2019 yılında %12,6, 2020 yılında %9,7, 2021 yılında %11,4, 2022 yılında %12,0 ve 2023 yılında

%11,4 olarak görülmüştür. 2019'dan sonra yapılan çalışmaların 20'nin üzerinde olduğu görülmüştür. Öğretmenlerde mesleki tükenmişlik alanında yapılan 2010-2023 arası erişilebilen çalışmaların yayın türüne göre dağılımı incelendiğinde toplam 174 adet çalışmada, en yüksek oranda %67,8 ile yüksek lisans, en az oranda %3,4 doktora tezi, %28 oranında makale yayınlarından oluşmaktadır.

Erişilebilen yayınların tamamının Türkçe yayınlandığı gözlenmektedir. Hem Türkçe hem İngilizce yayınların sayısı 55 olarak görülmüştür. İngilizce yayınlanan 55 araştırma ise genelin %55,1 ine denk gelmektedir. Yüksek lisans tezlerinin %2,5 i İngilizce %100 ü Türkçe yayınlanmıştır. Doktora çalışmalarının %33 ü İngilizce %100 Türkçe yayınlanmıştır. Makale çalışmalarının %100 ü Türkçe ve İngilizce olarak yayınlanmıştır.

Çalışmaların 117 si %67 oranda nicel, 22'si %12 oranda nitel, 35'i %20.1 oranda ise karma yönteme dayalı olarak gerçekleştirildiği görülmektedir. Bulgular incelendiğinde, yüksek lisans çalışmalarında en fazla %62 oranda nicel yöntem, en az %14 oranda nitel yöntem, %21 oranında ise karma yöntem uygulandığı görülmüştür. Doktora çalışmalarında en az %33 oranında nitel yöntem; nicel yöntem ve karma yöntemin %50 oranında eşit dağıldığı görülmektedir. Makale çalışmalarında ise en az %6 oranında nitel yöntem, en fazla %80 oranında nicel yöntem, %14 oranında ise karma yöntem uygulandığı görülmüştür.

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