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

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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.

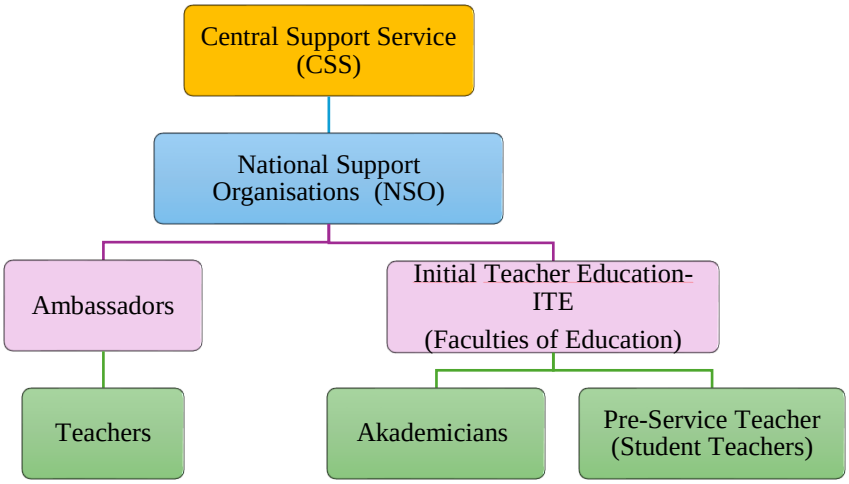

Figure 1. eTwinning Management Chart

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.

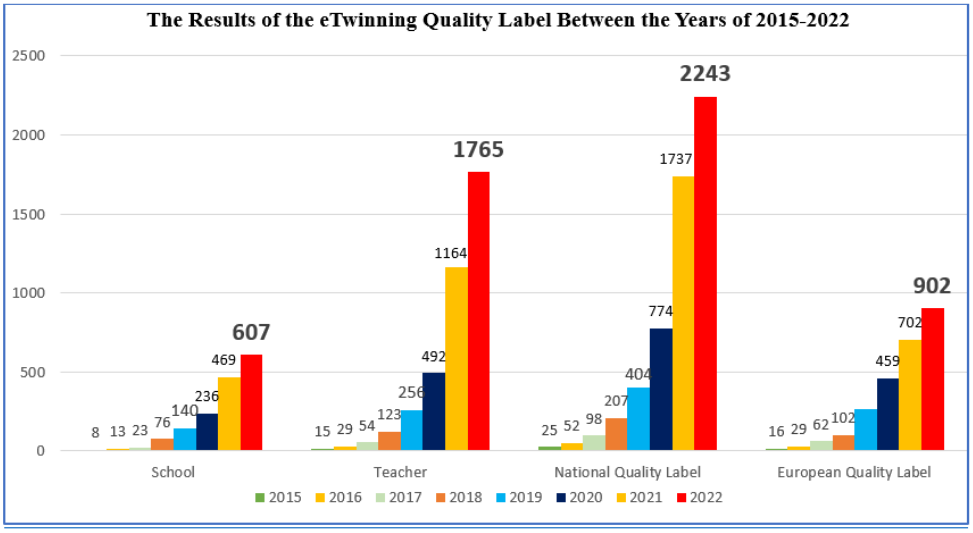

Figure 2. The Results of the eTwinning Quality Label Between the Years of 2015-2022

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).

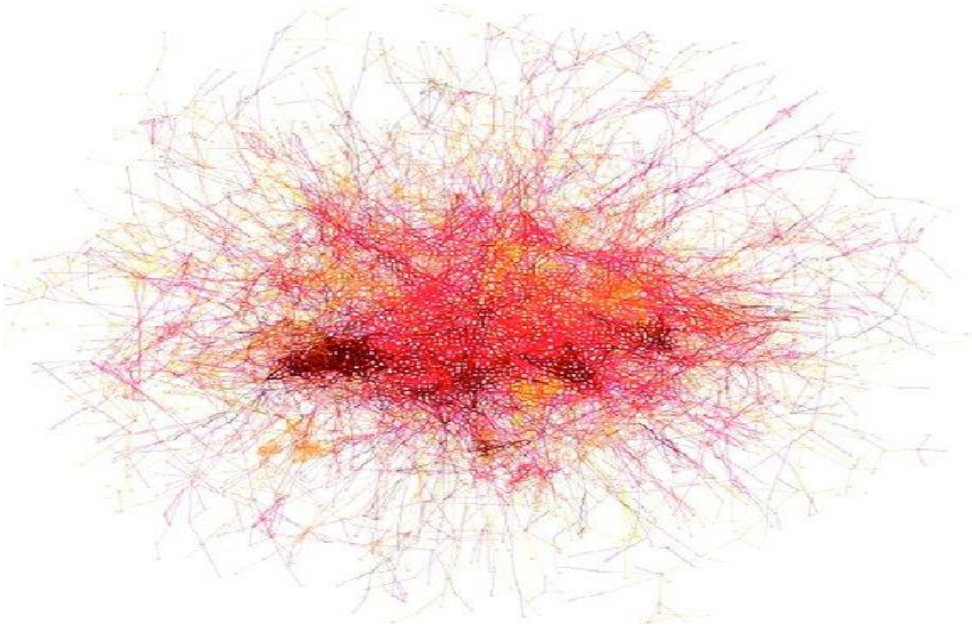

Figure 5. Visualization of eTwinning Teacher Network (Breuer et al., 2009)

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.

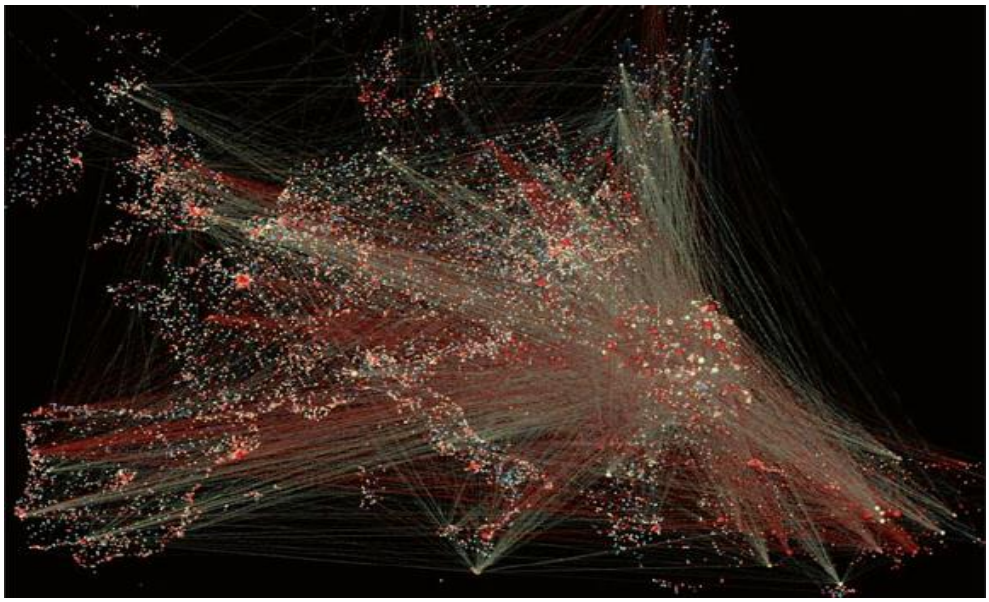

Figure 6. eTwinning Teacher Network (Pham et al., 2012)

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).

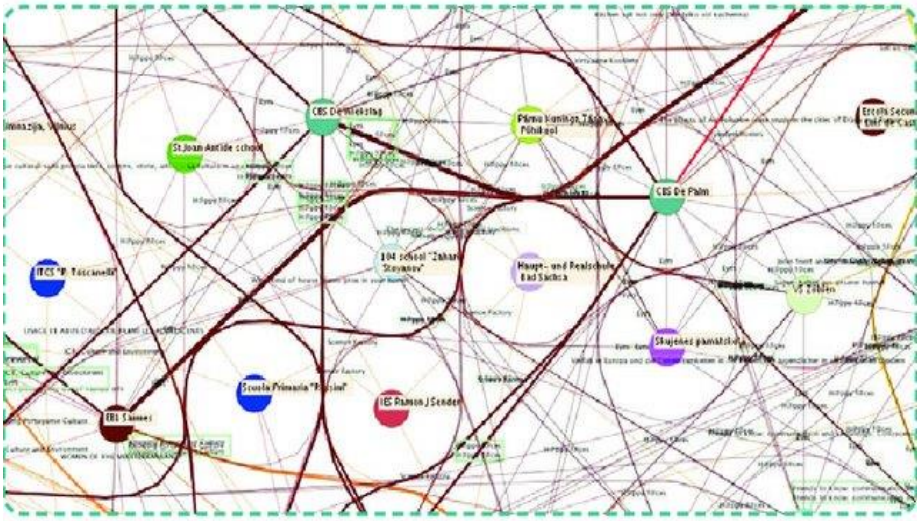

Figure 7. eTwinning Project Network (Pham et al., 2012; Vuorikari et al., 2012)

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