

Research Article

The role of eTwinning projects on teachers' professional development: A case study

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This qualitative study examines the impact of eTwinning projects on teachers' professional development. To accomplish this, a phenomenological research design was utilized. Participants included nine teachers from various branches working at different levels in the Western Black Sea region. Data collection was conducted using a semi-structured interview form developed by the researcher. An inductive content analysis and a descriptive analysis were performed to analyze the obtained data. According to the research findings, eTwinning projects contribute to the professional development of teachers by enriching their digital competencies, developing the four basic skills in foreign language learning, improving the diversity of materials, and supporting interdisciplinary cooperation, among other things.

Keywords: Professional development, Project, eTwinning, Teacher views

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1. Introduction

Education is a process that is constantly changing and evolving. It is therefore extremely important for the quality of education to increase the professional development of teachers. Professional development refers to the process by which teachers gain the competencies they need to perform their jobs efficiently from the time they enter the profession to the time they retire (Pool et al., 2015). Professional development helps teachers improve their teaching skills by providing them with new techniques and skills. The structure of education is rapidly changing due to the influence of digital technologies. Nowadays, teachers' competencies are more important than ever in an era of customized approaches to meet students' diverse needs. By building relationships based on open communication, teachers with professional development can implement up-to-date pedagogical methods in the classroom, plan lessons using innovative tools, and create unique learning experiences.

In the 21st century, knowledge has been known to reshape societies in all dimensions. Individuals are expected, in the information society, to grasp this problem when they encounter it, to develop creative and critical thinking skills to resolve the problem, and to find rational and effective solutions. The rapid development of knowledge in the information society reveals the importance of individuals learning to learn. This implies that the individual must learn about a subject and control his learning process. In order for individuals to learn, teaching processes should be planned accordingly. A project-based learning approach is effective in improving students' ability to access and use information in this respect (Kokotsaki et al., 2016). A project-based learning method involves students identifying and planning their projects,

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conducting research, and undertaking interdisciplinary studies to solve problems. Project studies have become increasingly important to provide students with an alternative to rote classical methods and to acquire these skills through group work (Arabacı & Akılı, 2020). As a method of learning, project-based learning allows students to think solution-oriented by experiencing the problems they encounter in school differently in their daily lives (Krajcik & Czerniak, 2018). During project-based learning, the teacher guides the student to find individual solutions to the problems he encounters (Aras Saralar, 2020). Learning through project-based learning focuses on long-term, interdisciplinary, student-centered, and integrated learning activities with real-world topics and practices instead of classroom practices that put the teacher at the center. Project-based learning aims to provide students with the ability to discover their learning content and type of learning, as well as to "teach learning" (McCormack, 2019).

The goal of project-based learning is to use knowledge rather than acquire it. By acquiring theoretical knowledge and practical skills, students learn more effectively. Teachers play a key role in implementing this approach. Innovative models such as project-based e-learning can emerge when technology is incorporated. The success of this method depends on the ability of qualified e-teacher staff to understand and implement it correctly, as well as the robustness of the digital infrastructure. Teachers can also develop their professional skills through the project-based learning method. Teachers can develop new skills by using this approach to prepare different and innovative educational materials in the classroom. As digital technologies become more widespread, talented teachers can learn more effectively and improve themselves.

It is a period in which students are required to reveal their cognitive design power, knowledge grows and changes in an incredible way, and technology enters and is used in our daily lives in many ways. It is no longer desired to possess independent particles of information, but rather individuals who can see the connections between them, organize information and create new knowledge, and use the information that they produce to benefit others (Hilton & Pellegrino, 2012). Hence, many of the activities included in project-based learning use technology that is widely used today. Information and communication have been impacted by the rapid development of technology, and education has followed suit. Internet is cited as the most significant change in education by experts (Mohsin & Ryan, 2003). The rapid development in the content of the Internet, the need for technological tools that many people use the Internet, developments, and diffusions have impacted and changed the student structure, the quality of education, as well as the methods and techniques used in education. As a result, the teacher's role and status in the course have changed (Karacaoğlu, 2014). Teachers must use the new technologies brought about by technology, check and verify the new information emerging, and answer students' questions (Gila, 2018).

One of the most innovative examples in Europe is the online learning environment that offers eTwinning projects, project activities, and web-based learning outside of school (Kearney & Velázquez, 2017). Since 2005, the European Commission's learning program has been focused heavily on eTwinning, which was implemented at a conference in Brussels (Avcı, 2021). Teachers need professional development training to meet today's information and technology needs. Teachers can access a variety of training opportunities through the eTwinning community. Many pieces of training are available to teachers through the eTwinning community. Using the eTwinning platform, teachers can attend free professional seminars by experts, participate in professional development activities, and carry out learning activities. Through communication and study with teachers in other countries, teachers get to know different countries and cultures, learn foreign languages, and establish new social relations. In addition to providing international visibility to their institutions and themselves, teachers are recognized for creating a modern educational climate for their schools through these projects (MoNE, 2019).

The main purpose of the eTwinning platform is to facilitate communication and project implementation in European school networks through a digital platform. Teachers can collaborate using the eTwinning platform, which provides e-learning opportunities and enables the use of information communication in their activities. Through the eTwinning platform, teachers from many parts of Europe collaborate on long- and short-term projects. In addition, it promotes different cultures, raises awareness about education in other European countries, and encourages the use of foreign languages and projects that increase the motivation of teachers and students, whose web technologies provide many educational benefits (MoNE, 2017).

Kearney (2016) analyzed eTwinning practices and found that teachers' experiences with using information and communication technologies in education are crucial to understanding eTwinning practices. The activities of eTwinning projects have provided opportunities for teachers who make collaborative movements to learn and use new tools, as well as to learn new teaching strategies. In other studies, online

tools that teachers learned through eTwinning projects contributed to their professional development in e-learning projects (Gheorghe, 2008).

Due to the significant participation of teachers from Türkiye in the projects carried out in the community, the importance of the eTwinning community in the Turkish educational environment is growing. According to December 2022 data, it is one of the countries with the highest participation and successful projects in Türkiye with 56771 schools, 331139 teachers, and 61103 projects (MoNE, 2022). Parallel to this, the literature shows that recent years have seen an increase in eTwinning research in the country. Hence, it is vital to assess the contribution of eTwinning project practices to teacher professional development. In this study, we examine how eTwinning projects contribute to teachers' professional development. To this aim, answers the following research questions were sought:

RQ 1) How have eTwinning projects benefited teachers' digital skills?

RQ 2) What benefits have teachers derived from collaboration with national and international teachers in eTwinning projects?

RQ 3) How have eTwinning projects enhanced teachers' ability to communicate in foreign languages?

RQ 4) How have eTwinning projects contributed to the diversity of teachers' preparation of course materials?

RQ 5) How have eTwinning projects contributed to teachers' thinking skills?

2. Method

2.1. Research Design

This study, which aims to investigate how eTwinning projects enhance school cooperation in Europe, is a qualitative study utilizing phenomenology to analyze the impact on teachers' professional development. Using the case science pattern, Creswell (2017) describes qualitative research as focusing on well-known but poorly understood phenomena. Patton (2018), emphasizes the importance of reaching the depth of the participants' experiences. Since the purpose of this study is to examine teachers' experiences participating in eTwinning projects, this pattern was chosen. Participants were asked to interpret their project experiences based on their perspectives.

2.2. Participants

The study group includes nine teachers working at different levels in the Western Black Sea in the 2022-2023 academic year, selected through purposeful sampling. Three volunteer teachers from each of primary, secondary and high school levels participated in the research. Table 1 shows the distribution of study groups by school and branch.

Table 1
Distribution of the participants by Schools and Branches

<i>Branches</i>	<i>Primary School</i>	<i>Secondary School</i>	<i>High School</i>	<i>Science and Art Center</i>	<i>Total</i>
Classroom teacher	2			1	3
Advisory teacher				1	1
Mathematics teacher		1			1
Turkish Language and Literature teacher			1		1
Music teacher		1			1
English teacher		1	1		2
Total	2	3	2	2	9

There are nine members of the study group: three classroom teachers, one guidance counselor, one mathematics teacher, two Turkish language and literature teachers, one music teacher, and two English teachers. The objective is to provide maximum diversity by taking into account different types of schools and branches. Researchers participated in the research through volunteerism, and interviews took place in schools.

2.3. Data Collection

Data were collected through semi-structured interviews. A semi-structured interview form was prepared to analyze in depth the impact of eTwinning projects on teachers' professional development. Literature reviews

were conducted to create the questions in the interview form. A faculty member who is an expert in qualitative research reviewed the semi-structured interview form. Following the expert opinion, the form was modified and arranged accordingly, and a pilot application with a teacher was conducted to test the items' functionality. Through e-Twinning projects, the interview questions are designed to determine the effect of digital skills, foreign language competencies, pedagogical innovations, and creativity on teachers' professional development.

Interviews lasted approximately half an hour and were recorded with a voice recorder. Sounding questions were asked during the interview, and guiding statements were avoided to ensure reliability.

2.4. Data Analysis

The process of qualitative data analysis involves finding the desired information, organizing and reporting the results obtained (Bogdan & Biklen, 1992). To analyze the data, descriptive analysis and inductive content analysis techniques were combined.

Initially, the interview records were transferred to an electronic environment and converted to text. In order to analyze the teachers participating in the research, P1 and P2 codes were assigned. Based on the sub-objective questions associated with the research, the findings were interpreted. By describing the obtained information first, and then interpreting it in a cause-and-effect manner, descriptive analysis transfers the information to the reader (Yıldırım & Şimşek, 2011). A method for categorizing data is to code it and then inductively categorize it (Patton, 2018). As part of this technique, researchers interpret relationships between categories by interpreting them as themes and sub-themes. As part of the research process, all interview records were re-evaluated, and whether the code, sub-theme, and theme were appropriate.

2.5. Validity and Reliability

Validity is increased by the researcher's face-to-face interviews with participants and the evidence presented from those interviews. Another important factor in ensuring validity of the research is flexibility of the process according to the course of the research and changes in interview questions. To ensure internal validity, multiple data sources were used, and the information obtained was analyzed based on the conceptual framework.

In order to ensure external validity, the sample is diversified into primary, middle, and high schools. Transcribing raw data from the interviews with the participants and recording them with a voice recorder increase reliability (Creswell, 2017). Moreover, data collected during interpretation of the results were shared directly, and internal reliability was improved.

3. Results

The findings of the research are presented regarding the subproblems of eTwinning projects' contribution to teachers' professional development.

3.1. The Contribution of eTwinning Projects to Teachers' Digital Skills

Table 2 shows the findings regarding the contribution of eTwinning projects to teachers' digital skills.

Table 2

The contribution of eTwinning projects to teachers' digital skills

<i>Theme and codes</i>	<i>Participants</i>	<i>Examples of teacher opinions</i>	<i>f</i>
Digital Literacy			
Gaining digital competence	P1, P3, P5, P7, P8	By maximizing the digital skills of both the teacher and the students, it improves the quality of the lesson. (P1)	5
Getting to know the tools of Web 2	P1, P2, P3, P6, P8	A very boring topic becomes more fun with Web 2 tools. (P3)	5
Being easily accessible	P2, P3, P4, P7, K9	All my work is accessible in seconds with just one click on a link. (P9)	5
Preventing paper waste	P1, P3, P4, P8	Photocopying is not something I do as often as I used to. My students can easily access the subject reinforcement tests when I share the internet address. (P4)	4

According to Table 2, almost two-thirds ($f=5$) of teachers aim to gain digital competence, learn Web 2 tools, and access information quickly. About half of the respondents ($f=4$) prefer it since it prevents paper waste.

3.2. The Contribution of Collaboration in eTwinning Projects to the Professional Development of Teachers

Table 3 summarizes the findings on the contribution of collaborative work processes to the professional development of teachers in eTwinning projects.

Table 3

The contribution of collaborative work in eTwinning projects to teachers' digital skills

<i>Theme and codes</i>	<i>Participants</i>	<i>Examples of teacher opinions</i>	<i>f</i>
Cooperation with national and international teachers			
Gaining cultural awareness	P3, P5, P7, P8, P9	I think the more we get to know different cultures, the better we understand our cultural codes. (P3)	5
Learning about the different school climate	P1, P2, P4, P5	We also learned about their national holidays, religious holidays, classroom environments, school cultures, and values. (P1)	4
Ensuring social interaction	P6, P7, P9	Although we have different cultures, seeing that there is a common youth culture, language, and taste broke our prejudices and brought us closer. (P7)	3
Breaking prejudices	P2,P3,	In general, eTwinners are a collaborative, innovative, creative, and sharing community that loves to produce. (P2)	2

Table 3 shows that *gaining cultural awareness* ($f=5$) is one of the most important benefits of participating in eTwinning projects. Additionally, other codes are said to be beneficial in *learning about different school climates* ($f=4$), *ensuring social interaction* ($f=3$), and *breaking prejudices* ($f=2$).

3.3. The Contribution of eTwinning Projects to Teachers' Ability to Use Foreign Languages

Table 4 provides findings on the ability of teachers to use foreign languages as a result of eTwinning projects.

Table 4

Contribution of eTwinning projects to teachers' ability to use foreign languages

<i>Theme and codes</i>	<i>Participants</i>	<i>Examples of teacher opinions</i>	<i>f</i>
Foreign language proficiency			
Developing the four basic language skills	P1, P3, P4, P5, P6, P9	In online meetings, we spoke foreign languages, listened to them, wrote and read letters in English. We turned every event into an opportunity. (P5)	6
Increasing vocabulary	P2, P8	We had to use the language. Thanks to this, I learned a lot of new words. (P8)	2
Getting a chance to practice	P7, P9	My students and I had the chance to practice with our native-speaking partners. (P7)	2

Based on Table 4, developing the four basic language skills appears to be the element to which it contributes the most ($f=6$). Other teachers stated that *increasing vocabulary* and *getting the chance to practice* ($f=2$) contributed to foreign language use skills.

3.4. The Contribution of eTwinning Projects to Teachers' Ability to Prepare Course Materials

The findings on the contribution of eTwinning projects to teachers' ability to use course material are shown in Table 5.

Table 5
Contribution of eTwinning Projects to Teachers' lesson material preparation skills

<i>Theme and codes</i>	<i>Participants</i>	<i>Examples of teacher opinions</i>	<i>f</i>
Preparing course material			
Preparing collaborative online collaborations	P2, P5, P6 P8, P9	Together with our foreign partners, we wrote stories, voiced books, prepared animations. (P8)	5
Making the lesson more fun	P1, P8, P9	Online studies, visual materials attract more attention of students and increase the retention of information. (P1)	3
Enriching project outputs	P3, P7	Rich project outputs are expected to receive the quality label. For this reason, we prepare as many different course materials as possible. (P3)	2

According to Table 5, *collaborative online collaborations* are the most important contributors ($f=5$). While some teachers answered *to make the lesson more fun* ($f=3$), other teachers expressed the opinion of "enriching the project outputs" ($f=2$).

3.5. The Contribution of eTwinning Projects to Teachers' Thinking Skills

The findings on the contribution of eTwinning projects to teachers' thinking skills are shown in Table 6.

Table 6
Contribution of eTwinning Projects to Teachers' thinking skills

<i>Theme and codes</i>	<i>Participants</i>	<i>Examples of teacher opinions</i>	<i>f</i>
Thinking skills			
Thinking critically	P2, P3, P5, P7, P8, P9	Using their intelligence, my students approached problem situations with a solution-oriented approach, and started to relate what they learned to other lessons by thinking creatively. (P3)	6
Looking from different perspectives	P1, P2, P4	I realized that I look at things more flexibly, and when we associated the curriculum of my own course with other courses, very enjoyable works emerged. (P4)	3

Table 6 shows that teachers perceive the development of their thinking skills in two dimensions. The first of these is the critical thinking dimension, which is the common view of most teachers ($f=6$). According to some teachers, the projects help them see things from a different perspective.

4. Discussion

Among the first results of the research, eTwinning projects implemented on national and international platforms contribute to teachers' professional development by enhancing their digital skills, allowing them to gain digital competence, access information quickly, prevent paper waste, and learn Web 2 tools. Due to globalization, individuals are expected to be constantly creative, questioning, and thinking brains in the digital information society of the 21st century (Higgins, 2014). As the world changes, new paradigms emerge with lifelong learning. Digital skills have become increasingly important as chalkboards and fixed computers have been replaced by laptops and smart boards. This rapid change has caused the classical web structure to become Web 2 with the new name (Deperlioğlu & Köse, 2010). Web 2 technologies now allow individuals to become content creators rather than consumers. In a collaborative multimedia environment, both teachers and students can make different designs.

In eTwinning projects, cultural awareness has been found to be at the forefront of benefits to teachers' professional development. Other codes include recognizing different school climates, fostering social interaction, and breaking prejudices. Learning in the globalized world is expected to be collaborative, flexible, and dynamic, and learning should extend beyond the classroom. Through collaborative networks, teachers in eTwinning projects are encouraged to innovate (Gajek, 2017). Educating students in joint classes and cooperating between European schools contributes to their self-development and to their sense of belonging to Europe. As well as improving cooperation skills, group work enhances selfless work by breaking down prejudices (Çakır & Yükseltürk, 2010). To contribute to teachers' ability to use foreign languages, eTwinning projects give them codes for developing four basic language skills, expanding their

vocabulary, and practicing with foreign partners. The project studies provide an opportunity to establish social relationships and accelerate foreign language education between teachers and students in different countries (Cansoy, 2018).

eTwinning projects contribute to the diversity of teachers' preparation of teaching materials by facilitating collaborative online collaborations that make lessons more enjoyable and enrich project outcomes. In addition to visualizing abstract concepts, animating difficult experiments, blending multiple disciplines, games with a high conceptual depth, and projects related to real life make up very rich resources (Arabacı & Akıllı, 2020).

Critical thinking and the ability to look at things from different perspectives are two dimensions of the contribution of eTwinning projects to teachers' thinking skills. Teachers benefit from eTwinning activities in terms of interdisciplinary interaction and communication, static classrooms are activated, and students can discover their talents in games based on Web 2.

5. Recommendations

Based on the results obtained and taking into consideration the existing literature, the following suggestions can be made:

- A variety of activities can be conducted to teach teachers how to effectively use Web 2.0 tools in the classroom
- In-service training on foreign language teaching can be organized,
- eTwinning project training can be offered in the faculties of education,
- Workspaces can be created by creating eTwinning rooms,
- Materials and moral support can be provided to create qualified projects,
- Students and teachers from Europe can be mobilized in projects,
- Schools can improve their technical infrastructure and Internet connectivity,
- Innovative and change-resistant teachers can be encouraged to take part in such projects.
- Allowing teachers to spend more time on projects would be beneficial.

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