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Pedagogical Perspective

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Investigation of the effect of project-based teaching on the distance education process[1]

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Abstract

eTwinning projects, which have been implemented in Europe since 2005 and in Turkey since 2009, are considered a project-based teaching practice where cooperation, communication, and teamwork are prioritized. In eTwinning Projects initiated with founding partners from Europe, teachers share their project activities with national and international partners via the Twinspace portal. The purpose of this research is to examine the effect of project-based teaching on the distance education process. The effects of the contributions of eTwinning projects, which are project-based teaching practices, before and during the distance education studies that were compulsorily carried out online during the COVID-19 pandemic, were examined. In this study, a case study design was used within the scope of the qualitative research approach. The study group was determined using criterion sampling, one of the purposive sampling methods, and consists of thirty-two high school teachers from various disciplines working in Gaziantep during the 2020-2021 academic year. These teachers were selected based on specific criteria, including having implemented at least two eTwinning projects and having received at least one European Quality Label certificate. The research data were collected through a semi-structured interview form. The interview questions were developed by the researcher and refined with feedback from experts. The data were analyzed using content analysis. Based on the research findings, the impact of project-based teaching on the distance education process was examined. The findings reveal that eTwinning projects, as an example of a project-based learning approach, provide meaningful contributions to teachers' professional development in the areas of daily lesson planning, development of instructional content, and assessment and evaluation stages during the distance education process.

Keywords: eTwinning, Project-based teaching, Distance education.

Introduction

Education is the process of transferring society's culture and values, knowledge, skills, and experience to new generations, and the activities of carrying out this process in designated institutions. Changes in the technological field and sociocultural life that occur with globalization and the prioritization of individual differences have greatly affected education and training environments, processes, and curricula. Today, where traditional education and training methods are inadequate, project-based teaching aims to keep students at the center of the

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teaching process and help them gain higher-level thinking skills. Kuhns (1977) mentioned the importance of the student's active participation in the learning process for permanent learning. Research in the field has revealed that students permanently learn when they are at the center of the learning process and acquire knowledge as participants (Candan & Başaran, 2023; Birgili et al., 2021; Yıldırım & Şimşek, 2016; Ransdell & Gaillard-Kenney, 2009).

The project-based teaching method was developed as an alternative method to move education and training environments away from traditionalism. It is one of the methods that places the student at the center of the teaching process. At the center of the project-based teaching method are the projects prepared by the students themselves. Blumenfeld et al. (1991) define a project as the work done by students freely, in groups or individually, to solve a problem related to the acquisition of a concept or skill by the student. One of the basic features of project-based teaching is that students decide what method they will follow to solve the determined problem and in what order they will apply the problem-solving steps (Kubinova et al., 1998). In this way, students try to solve problems, occasionally working individually and sometimes in groups. During project work, students create products, organize discussions, express their ideas, organize the results, graph the obtained data, make predictions, examine questions, and answer them (Blumenfeld et al., 1991). Projects carried out through the eTwinning portal are one of the most current examples of project-based teaching. Projects are created by determining goals, teaching processes, and activities to solve the identified problems. The Portal is a website with 33 language options that offers teachers collaborative working tools and services to create partnerships and projects on many subjects. eTwinning projects implemented in Europe since 2005 and Turkey since 2009 have been implemented by teachers who adopt the project-based teaching method. eTwinning has been used as the main movement of the European Commission's learning program since 2005, as a platform where teachers, students, principals, and librarians in European countries can communicate through the portal, collaborate within the scope of projects, and develop projects. eTwinning is Europe's largest e-learning platform, where teachers implement projects with students, contribute to their personal as well as professional development, and share experience, knowledge, and skills by working collaboratively. eTwinning is a project implementation method in which students can work collaboratively in face-to-face learning environments as well as in the distance education process.

Since distance education offers individuals the opportunity to learn in their own way, it is more flexible than traditional education practices and can be adapted to different conditions. Thanks to distance education, the limitations can be partially or eliminated and education opportunities can be delivered to wider audiences. It is seen that the definition of the concept of distance education has changed with the use of multimedia tools and presentation systems. In general terms, distance education can be called educational practices structured in separate areas in terms of time and space for the teacher and the student (Clark, 2020). Nowadays, distance education applications are carried out over the Internet using different tools and applications.

Due to the Coronavirus epidemic, which was first seen in China on December 1, 2019, and subsequently affected the whole world, education and training activities in most countries were carried out with synchronous or asynchronous applications in distance education systems. It has become difficult for teachers and students who continue their educational activities with classical methods to adapt to distance education and use the necessary distance education applications. In addition, it has been observed that teachers who implement eTwinning projects

in their courses and the students who take part in these projects state that they can adapt to online courses more easily during the distance education process because they use distance education and web 2.0 tools in their project activities. It has also been noticed that the participants of eTwinning projects continue their eTwinning Projects during the distance education process.

There are studies on the eTwinning practises in the literature. Αλεξίου (2019) analyzed the relationship between the implementation of eTwinning projects and the development of basic mathematical skills. A study conducted in Poland (Gajek, 2021) investigated the relationship between eTwinning projects and cooperative blended learning and teaching. Kefis and Xanthopoulou (2019) assessed the use of eTwinning projects in primary education. As with the previous studies, it is seen that there are studies in the literature that investigate the effects of eTwinning projects in different contexts. However, it has been determined that there is a lack of research in the literature examining the contributions of using the eTwinning portal as a project-based teaching system to the distance education process. Therefore, with the current research, the contributions and effects of the eTwinning projects, a project-based teaching implementation, on the distance education process, which was mandatory due to the coronavirus outbreak, were examined.

Aim of the study

The current research aims to reveal the contributions of teachers who implement eTwinning projects, one of the project-based teaching methods, to the distance education processes of their experiences in the project implementation process. For this purpose, the answer to the following question was sought in the current research: “How do the experiences of teachers who implement eTwinning projects, one of the project-based teaching methods, contribute to the distance education process?”.

Method

The research was designed as a qualitative case study and "single case study" was used as a sub-method. In qualitative research, perceptions and events are revealed realistically and holistically by using qualitative data collection techniques such as observation, interview, and document analysis (Yıldırım & Şimşek, 2016). According to Creswell (2012), the case study is the process of the researcher obtaining a large data set by conducting face-to-face interviews and observations and examining various sources as reports or documents, to reach comprehensive and detailed results. Working with this approach provides a close collaboration process between the researcher and participants and allows research participants to tell their own stories in more detail (Crabtree & Miller, 1999). As indicated, the case study allows researchers to examine in depth the subject, action, event, or process that they have discussed, to define it, to clarify the events and situations, and to observe and analyze them from different aspects. This research examines the impact of project-based teaching in the distance education process in a specific context, through a single case. The "case" here is the project-based distance education application implemented during the pandemic. The research aims to provide a comprehensive understanding by conducting a detailed analysis of this specific situation with participant views.

Participants and procedure

In the current research, the criterion sampling method, one of the purposeful sampling methods,

was used. The basis of the criterion sampling study is to implement the study on situations that meet the criteria determined before the research. The criteria created by the researcher or pre-prepared criteria can also be used by the researcher (Yıldırım & Şimşek, 2016, p. 140). instruments and procedures, data analysis, and the issues of validity, reliability and ethics.

Participant criteria were determined as follows: working in different branches in high schools in Gaziantep, having implemented at least two eTwinning projects, and receiving at least one European Quality Label Certificate. Since it was determined to collect data with the interview form, teachers working in Gaziantep were preferred. Teachers at the high school level were chosen because teachers working in high schools had more communication with their students during the distance education process. Teachers who implemented at least two eTwinning projects were chosen because teachers who implemented two projects experienced the logic and method of eTwinning projects better. Table 1 shows the demographic information of the participants.

Table 1 Demographic characteristics of the participants

Gender	Subject	Experience (year)	Number of eTwinning Projects Implemented	Number of eTwinning Quality Labels
Female	History	25	4	3
Female	English	8	6	5
Female	English	9	5	1
Male	Maths	6	2	1
Male	Maths	6	2	1
Male	English	9	2	2
Female	English	5	23	14
Female	English	6	2	1
Female	English	16	5	1
Female	Religious culture and morality	5	8	1
Female	English	11	2	1
Female	English	14	12	3
Male	Turkish language and literature	15	3	2
Female	English	15	2	3
Female	English	19	6	2
Female	Turkish language and literature	13	2	3
Female	English	12	6	4
Female	Religious Culture and Morality	4	2	2
Male	English	6	2	2
Female	English	11	3	2
Female	English	12	5	2

Data collection

In the qualitative descriptive research process, the researchers try to collect as much data as possible to make sense of all the parts that make up the events. During the data collection phase, the researcher looks for answers to "who, what, and where.". The fundamental nature of situations is kept in focus (Sandelowski, 2000). Since the current research is a study conducted to make sense of the existing situation, the data was collected with the semi-structured interview

form prepared by the researcher to teachers and students. Thus, the aforementioned questions were answered.

In the data collection process, the researchers contacted the teachers selected within the scope of the determined criteria. Researchers obtained institutional permissions and interviewed participants. The interview questions were structured to reveal teachers' perceptions of the impact of eTwinning projects on their professional development, teaching-learning processes and students. Following the pilot study, the implementation process was initiated and the participants were asked questions such as; “General information about the eTwinning Project, which is a project-based teaching approach? , What are your reasons for taking part in eTwinning Projects? , Which Web tools do you often use when implementing eTwinning Projects?” , through a semi-structured interview form. After 32 teachers were interviewed within the scope of the research, it was determined that the data obtained reached the saturation level. It is clear that after researchers collect data for a certain period, the data obtained from observations and interviews begin to repeat themselves (Morse, 2016; Shenton, 2004).

The planned data collection period was determined as four weeks. It took participants approximately 60 minutes to answer the interview questions. Semi-structured interview questions were also presented to the participants in written form. In this way, they can understand the questions better and review the questions during the answering process. Before the questions were asked to the participants, they were given the necessary information about the process, purpose, and importance of the research. Interviews were held at a time and place deemed appropriate by the teachers.

Data analysis

The data collected from the participants was analyzed using the content analysis method. The data obtained through content analysis is subjected to a deep processing process and with the descriptive approach, concepts and themes that were not noticed at first time are obtained as a result of this analysis. In the content analysis method, similar data are brought together under relevant concepts and themes, organized, and interpreted in a way that readers can understand (Yıldırım & Şimşek, 2016). During the content analysis process, the focus is on the data obtained through analysis. Codes are created by taking into account the events and facts that are frequently repeated in the obtained data set or that are clearly emphasized by the participants. Categories are obtained from the codes obtained, and themes are obtained from the categories. In summary, data that are similar to each other and that are found to be related to each other, in other words, codes, are collected under certain concepts (categories) and themes and interpreted. Content analysis systematically determines the content of participant opinions (Bengtsson, 2016; Crabtree & Miller, 1999; Merriam & Grenier, 2009).

32 interview forms were transferred to the computer by the researchers and the data were tabulated. For convenience during the analysis and to keep their information confidential by ethical principles, the interview forms of the teachers were named "P" to correspond to the expression "participant."

The coding process was carried out by working on the raw data obtained as a result of the content analysis. Frequencies have been determined. The raw data obtained was also analyzed by a second researcher. Consistency between the two analyses was examined. The obtained codes

were compared and correlated with each other to determine common aspects. Expert opinion was taken regarding coding and themes. Necessary arrangements have been made in this regard.

Validity, reliability, and ethical considerations

Validity in qualitative research is defined as the researcher observing the subject he is researching as objectively as possible (Kirk & Miller, 1986, as cited in Yıldırım & Şimşek, 2016). Validity in qualitative research refers to internal and external validity. To ensure the internal validity of the research, an expert review was carried out on all processes, such as the research design, the data obtained, analysis, and reporting. The research was shaped in the light of the feedback given by the expert. To ensure the external validity of the research, the studies on the participants, the data collection process, and the data analysis process were explained in detail in the method section of the research. Direct quotations were made from the participant teachers' opinions, and the purposeful sampling method was used.

Reliability is obtaining the same results when the research is repeated (Merriam, 1998). Since human behavior is variable, it is not possible to repeat research on social situations (Yıldırım & Şimşek, 2016). To ensure the reliability of the current research, expert opinion was taken on the whole of the raw data, the coding made and the results obtained. As a result of the expert's review, necessary adjustments were made to the coding and categories. Following the arrangements, coding was done by a different independent researcher. Consistency between the two coders was examined. Similarity is calculated using the formula $\Delta = C \div (C + \partial) \times 100$. In the formula, Δ: Reliability coefficient, C: Number of topics/terms on which there is consensus, ∂: Number of topics/terms on which there is no consensus (Miles & Huberman, 1994). The value obtained as a result of applying the formula was .82, which is above the accepted value of "80". Participant confirmation was carried out to ensure the reliability of the research. Participant confirmation was tested by sharing the codes determined by the researcher and the comments made by the participants.

Results

In this section, the findings obtained from the analysis of the data collected during the research process are presented separately with the titles of the questions.

General opinions

“What are your general opinions about eTwinning? Could you describe your thoughts in 5 words?” To this question, some teachers indicated their opinion about eTwinning as instructive; a number of participants said it is collaborative work, and a few teachers said it requires a technology-supported working process. It has also been said that it provides motivation, supports professional development, is an innovative application, contributes to permanent learning, supports academic success, contributes to the development of students' high-level problem-solving skills, and eTwinning is interdisciplinary. Table 2 shows the codes and frequencies of expressions describing eTwinning projects.

Table 2 Codes and frequencies of expressions describing eTwinning projects

No	Codes	Frequency
1	being instructive	9
2	supporting collaboration	8
3	being fun	8

4	being technological	8
5	increasing interaction	6
6	contributing to professional development	4
7	increasing motivation	4
8	being innovative	4
9	arousing curiosity	2
10	allowing participation in webinars	1
11	enabling socialization	2
12	allowing making friends	1
13	offering partnership	2
14	providing permanent learning	2
15	increasing academic success	1
16	providing acculturation	1
17	contributing to the development of high-level cognitive skills	1
18	developing problem-solving skills	1
19	helping to make friends	1
20	being perfect	1
21	being informative	1
22	being educational	2
23	contributing to individual development	2
24	being interdisciplinary	2
25	enriching the curriculum	2
26	being student-oriented	1
27	being easily accessible	1
28	increasing cultural interaction	1
29	providing opportunities for cooperation	1
30	being useful	1
31	increasing creativity	1
32	ensuring success	1
33	offering a network	1
34	inspiring	1
35	having a dynamic structure	1

From the findings obtained, it can be said that eTwinning projects contribute to various competencies of teachers, such as problem-solving skills, socialization skills, and cognitive skills. In addition, it is seen in the findings that it has educational, instructive, and curriculum-developing features. It can be concluded that eTwinning projects have a positive impact on both the personal and professional development of teachers.

Reasons to take part in eTwinning projects

In line with the answers given by the teachers to the question, "What are your reasons for taking part in eTwinning Projects? Please explain?" the themes of teachers' social, individual, and learning teacher processes were specified.

Table 3 Reasons to take part in eTwinning projects

Reasons to Take Part in eTwinning Projects			
Reasons in terms of education and training	Reasons in terms of students	Individual reasons	Social reasons
To work collaboratively	To develop students' horizons	To develop professionally	To meet people of different nationalities
To create out-of-school educational environments	To enable students to use Web 2.0 tools	To develop individually	To produce something together
To teach lessons actively	To improve students' technological skills	To gain technological skills	To meet new people
To increase academic success	To introduce students to technological tools	To follow the innovations	To benefit from colleagues' experiences
To provide different learning experiences	To help students develop themselves	To exchange information with colleagues	To bring vitality and diversity to the school

To work across disciplines	To save students from technological addiction	To guide students	Because the UDS team is so supportive.
To gain experience for Erasmus+	To support the development of students' foreign language skills	To close the generation gap	To communicate with foreign partners
To provide a fun and educational lesson environment	To give students the habit of working in a team	To follow new projects	To get to know different cultures
To participate more actively in the lesson	To ensure that students take an active part in these projects	To gain new experiences	To make good friends
To integrate the curriculum with technology		To keep up with the 21st century	To keep the current environment informed of innovations
		Because I'm curious.	For national/international cooperation

Reasons in terms of education and training

Participants reported that during the process of carrying out eTwinning projects, they integrated the curriculum with technology, worked in cooperation, were able to provide education not only at school but also in out-of-school environments, lessons were taught more actively during the projects, and academic success increased proportionally with this process. In addition, the participants explained that the project implementation process supports different learning experiences, ensures interdisciplinary work, and creates a fun and educational lesson environment in the classroom. Thus, students participate more actively in the lesson, which is why they implemented eTwinning projects. Table 3 shows teachers' reasons for participating in eTwinning projects.

Reasons in terms of students

Teachers asserted that during the eTwinning projects, students were introduced to new and different technological tools, and used web 2.0 tools, thus positively using technology, moving away from technology addiction, and acquiring technological skills. They also highlighted that students' foreign language skills improved as a result of taking an active part in projects, and they gained the habit of working in teams, thus gaining different perspectives.

Individual reasons

Teachers releaved that they took part in eTwinning projects to keep up with the 21st century, gain new experiences, update themselves professionally, exchange information with their colleagues, close the generation gap between students, and guide them.

Social reasons

Teachers declared that they implemented eTwinning projects to learn about different cultures by meeting new people both from their own countries and from varied countries, to work together with the people they met and thus improve national and international cooperation, to bring vitality to their schools by benefiting from the experiences of their colleagues and to inform the environment of innovations.

Some participants expressed their reasons for taking part in eTwinning projects as follows:

> “It helps me to improve myself constantly. I am learning a lot of new information that I will use in my classes. For example; I use QR codes a lot in my projects. I never thought of using it in

> class. During this pandemic period, I gave QR codes, took out huge tests, made photocopies, etc. Instead of bothering with it, I just created a QR code. In this way, I saved paper. Moreover, I sent study questions of higher quality than the product I would produce on paper." (P7)
>
> "I take part in eTwinning projects to improve myself, establish new networks, be better in my profession, expand the horizons of my students, and carry education beyond the boundaries of the school." (P19)
>
> "I like and participate in eTwinning projects because they keep up with the 21st-century education system and enable interdisciplinary work. The integration of technology in education is important." (P21)

Contribution to professional development

Within the scope of the question "Do you think that the eTwinning projects you have implemented have contributed to your professional development? If yes, how did they contribute? Please explain?", teachers expressed in what aspects eTwinning projects have contributed to their professional development.

Table 4 Contribution to professional development

Contribution to Professional Development	
Contribution to the teaching process	Contribution to the development of different skills
Providing opportunities for cross-curricular work	Foreign language skills
Being active in lessons	Developing self-confidence
Interaction-focused planning	Language learning and practice
Activities that bring out the creativity of the student	Project management and implementation
Learning by doing and experiencing	Exploring
Creating fun and permanent learning environments	Multidimensional perspective
Increasing interest in the lesson	Team-work
Methods to make knowledge permanent	Being productive
New teaching methods and techniques	Interaction with colleagues
Teaching cross-curricular skills	Sharing experiences
Project-based teaching	Developing problem-solving skills
Assigning tasks without worrying about grades	Creativity
Enjoying and loving the activities	Technology usage skills
New project types	Adaptation to distance education
Ensuring access to students	
Creative content	
Different materials	

The answers to the question were collected under two sub-themes: Contribution to the teaching process and contribution to the development of different skills.

Contribution to the teaching process

Teachers who indicated that they carry out project-based education practices with the implementation of eTwinning projects prioritize the creativity skill of students by carrying out cross-curricular studies. They reported that they were able to plan it. It has been expressed that producing creative content using different materials while implementing new project types and applying new methods and techniques during course teaching enables lessons to be taught more actively, creates fun and permanent learning environments, and increases students' interest in

the course. Creating interaction-focused active lesson plans makes it easier to reach students. It is pointed out that students take part in tasks without worrying about grades, allowing students to participate in the teaching process with pleasure and fun.

Contribution to the development of different skills

Teachers reported that they acquired different skills that support their professional development thanks to eTwinning projects. Teachers revealed that they adapted to distance education more easily by improving their technological skills and improved project management and application skills by improving their problem-solving skills. According to the participants, their discovery skills increased with the self-confidence development provided by the project applications, and they gained a versatile perspective. It was observed that learning a foreign language became easier, and their language proficiency improved thanks to the work done with international partners. It can be said that they became more productive by interacting with their colleagues and sharing experiences through teamwork.

Some of the participants expressed the contributions of eTwinning projects to their professional development as follows:

> “While I used to teach more teacher-centered lessons, after eTwinning, I started teaching student-centered lessons. Accordingly, I plan more interaction-based events. I also began to integrate technology more into the course process. Now I try to create learning environments where students can reveal their creativity.” (P6)
>
> “I got to know innovative technological education and training tools, I used the school's technological tools (smart boards) in my lessons interactively with the students, and I produced new education and teaching methods and techniques and used them in my lessons.” (P11)
>
> "Absolutely, yes. I learned how to integrate technology into pedagogy best. I experienced different teaching techniques." (P19)

Contribution to students

Participants answer the question, “Do you think that the eTwinning projects you have implemented contribute to your students? If yes, could you please specify these contributions? The table below shows the contributions of eTwinning projects to students, including their learning processes, use of technology, foreign language proficiency, and social skills.

Table 5 Contribution to students

Contribution to Students			
Contribution to the Learning Process	Contribution to the Use of Technology	Contribution to Foreign Language Proficiencies	Contribution to Social Skills
Participating in the lesson more actively	Using technology for good purposes	Developing foreign language skills	Providing intercultural interaction
Increasing interest in the lesson	Safe use of the Internet	Developing a positive attitude towards English	Providing an environment for socialization
Learning with curiosity and quickly	Effective use of Web 2.0 tools	Increasing interest in the language department	Supporting collaborative learning
Increasing academic success	Increased interest in technology	Increasing desire to speak English	Supporting cooperation
Fun learning	Ability to use phones and tablets as teaching tools	Developing the ability to use foreign language effectively	Increasing tolerance

Making learning permanent	Providing self-confidence in speaking English	Providing awareness of multiculturalism
Providing a positive attitude towards projects	Gaining awareness about writing in English	Supporting teamwork
Providing a collaborative work culture		Providing the opportunity to meet new friends
Implementing project-based work		Increasing desire to talk to strangers
Increasing motivation		Developing communication skills
Providing the ability to produce TUBITAK 4006 projects		Supporting the ability to express oneself comfortably in front of people
Integrating technological innovations into lessons		Providing real-life skills
Increasing desire to take part in other projects		

The answers to these questions are revealed under four themes: Contribution to the learning process, contribution to technology use skills, contribution to foreign language skills, and contribution to social skills.

Contribution to the learning process

The data revealed that during the implementation of eTwinning projects, students' interest in the course increased. Thus, their participation in the course was more active. The participants expressed that the motivation of students who gained a collaborative working culture through project-based teaching practices increased thanks to fun learning environments. The data revealed that this situation increased their academic success, gained a positive attitude towards doing projects, and created a desire to take part in different projects such as Tübitak 4006.

Contribution to technology use skills

Teachers said that as students' interest in technology increased during the eTwinning projects, their skills in using technology positively improved. The findings indicated that they started to use web 2.0 tools, phones, and tablets in lessons and activities.

Contribution to foreign language skills

Participants expressed that students developed positive attitudes towards English during the process of implementing eTwinning projects. It was observed that the students' self-confidence in speaking English increased during the activities, and this was reflected in their class participation. Developing the ability to use a foreign language effectively enables students to develop positive attitudes not only towards English but also towards different languages. The data revealed that students whose prejudices against English were destroyed tended to choose the foreign language department to study.

Contribution to social skills

Participants highlighted that students gained life skills during the implementation processes of the activities in eTwinning projects. Observation-based findings illustrated that the students improved their ability to express themselves comfortably in front of people and the public during the projects and that they had the opportunity to meet new friends with each new project, thus socializing the students. They emphasized that the students worked in teams during the

activities, thus improving their skills of working cooperatively, helping each other, acting together, and being tolerant in this process. They pointed out that in projects carried out with foreign partners, students' improved language skills increased their desire to talk to foreigners, got to know different cultures, and gained awareness of respecting different cultures in the process.

Some of the participants expressed the contributions of eTwinning projects to students as follows:

> "First of all, students started to participate more actively in the lesson, and their interest in the lesson increased. They started to learn Web 2.0 tools to do different activities in projects in class or our extracurricular activities. Since they are interested in technology, they learn these Web 2.0 tools very curiously and quickly. This increases both their motivation and academic success. It also enables the acquisition of feelings such as cooperation and tolerance among each other." (P13)

> "Students' digital skills have improved. Students who previously had no knowledge of Web 2.0 tools can now effectively use these tools and produce content. Thanks to these projects, they meet interactively with students from different countries and cities and improve their language skills. We also tried to develop our students in terms of self-confidence. Thanks to these projects, students who previously had difficulty expressing themselves and were shy became more self-confident and outgoing individuals at the end of the process." (P7)

> "My students use English for a real purpose. They communicate with our foreign partners and create collaborative products. They discover new Web 2.0 tools while using technology for a useful purpose." (P20)

Frequently used web tools

Which Web 2.0 tools do you often use when implementing eTwinning projects? Participants pointed out that they used web 2.0 tools for different purposes in eTwinning projects. Table 6 and Table 7 shows frequently used Web tools.

Table 6 Frequently used web tool

Frequently Used Web Tools				
Multi-Purpose Web Tools	Measurement and Evaluation Tools	Video Making Tools	Poster and Logo Making Tools	E-Book Tools
Padlet	Kahoot	Animoto	Wordwall	Book creator
Cram	Quizizz	Movimaker	Wordart	Story Jumper
Crossword Lab	Quizlet	Kizoa	Postermywall	Calemeo
LearningApps	Plickers	Slideshow	Flametext	Issuu
Canva	Menti	Scoompa	Fotorus	Boardnet
Popplet	Answergarden	Capcut	Logo Maker	Edupad
Nearpod	Google Forms	PhotoGrid	Posterazor	Joomag
Edmodo	Triventy	Vivavideo		
Genially	SurveyMonkey			
Vocaroo	Socrative			
Google Classroom				
Emaze				
Tarsia				

Table 7 Other frequently used web tools

Avatar Making Tools	Animation Making Tools	Presentation Making Tools	Website Tools	Distance Learning Tools	Certification Tools

Avatar Maker	Platagon	Prezzi	Blogger	Zoom	Flippity
Bitmoji	Powtoon	Emaze	Weebly	Adobe Connect	
voki	Cospaces			Youtube	
Chatterpix	Pixton				
Zepeto					
Momentcam					

Participants reported that they used web 2.0 tools for different purposes in eTwinning projects. These tools are grouped according to their intended use as follows:

Multi-purpose Web 2.0 tools

Participants highlighted that some Web 2.0 tools contain more than one feature at the same time, so they can use a web tool for different purposes and processes. Participants mentioned that the tools that contain more than one feature are Padlet, Cram, Crossword Lab, LearningApps, Canva, Popplet, Nearpod, Edmodo, Genially, Vocaroo, Emaze, Tarsia, and Google Classroom.

Assessment and evaluation tools

Participants pointed out that they carried out assessment and evaluation processes using Web 2.0 tools, especially in the courses and projects carried out during the distance education process. They claimed that the assessment and evaluation tools they most frequently utilize are Quizlet, Plickers, Menti, Answergarden, Google Forms, Triventy, SurveyMonkey, and Socrative.

Video-making tools

The most commonly used Web 2.0 tools to collage videos of activities carried out during the project or to make videos from photographs taken are Animoto, Movie Maker, Kizoa Slideshow, Scoompa, Cap Cut, Photo Grid, and Vivavideo.

Poster and logo-making tools

They noted that the web 2.0 tools they frequently use to prepare the posters, logos, banners, and other visuals they use in their project work are Wordwall, Wordart, Postermywall Flametext, Fotorus, Logo maker, and Posterazor.

e-Book tools

E-book tools that they frequently use to publish collaborative, joint products and final products or to bring together different activities while doing project work are Bookcreator, Story Jumper, Calameo, İssuu, Boardnet, Edupad, and Joomag.

Avatar-making tools

It is an important criterion that students' faces are not visible within the scope of e-security in eTwinning projects. In this context, students use avatars instead of their photographs when introducing themselves to project partners. Participants pointed out that they frequently use Avatar Maker, Bitmoji, Voki, Chatterpix, Zepetto, and Momentcam tools for student avatars.

Animation creation tools

Participants noted that during the implementation of eTwinning project activities, animation works were carried out in many activities, such as storytelling, and that they mostly used tools such as Plotagon, Powtoon, Cospaces, and Pixton in these works.

Website creation tools

Participants expressed that the two free websites they use most to collect course resources or project activities on a single website are Blogger and Weebly.

Distance education tools

Participants noted that the two tools they used most while continuing education during the distance education process were Adobe Connect and the Zoom platform.

Some of the participants expressed the web 2.0 tools they frequently used during the eTwinning projects as follows:

> "Actually, we learn and use many web 2.0 tools during the project process, but the first ones that come to my mind are: Canva, menti, avatar maker, bitmoji, voki, chatterpix, learningapps, nearpod, bookcreator, story jumper, cram, edmodo." (P7)

> "While carrying out eTwinning projects, we both learn and apply new tools. Padlet, Google Tools, Flametext, Genially, Canva, Answergarden, Kahoot, Menti, Zoom, Blogger, Weebly, Fotorus, and Videoshow are among the tools I use in almost every project." (P8)

Contribution to lesson planning process

In what way did the eTwinning activity contribute to the lesson planning processes in the distance education process? Please explain. The contributions of the participants regarding the lesson planning processes of the eTwinning activity in the distance education process were themed under the headings of contribution to content creation and planning skills.

Table 8 Contribution to lesson planning process

In this table, the contribution of eTwinning projects to the lesson planning process, lesson content development, and lesson planning skills are illustrated.

Contribution to Lesson Planning Process	
Content Development Skills	Planning Skills
Planning lessons using Web 2.0 tools	Planning more systematic, effective and efficient lessons
Planning with Web 2.0 tools appropriate for lesson stages	Practical and enjoyable planning process
Planning by producing digital content	Getting students more involved in class
	Planning both synchronous and asynchronous lessons

Contribution to content creation skills

Participants pointed out that they produced digital content while designing instructional content for the lessons held during the distance education process. They highlighted that they realized these contents using web 2.0 tools and that they used web 2.0 tools appropriate for each stage of each course and determined the level of tools that students could use.

Contribution to planning skills

Participants noted that they learned the difference between synchronous and asynchronous during the lesson planning process, and as a result, they used both methods in their lesson plans.

Participants highlighted that their lesson-planning skills had increased and that they were able to plan in an enjoyable and practical way. They emphasized that they carried out lesson planning in a more systematic, effective, and efficient way. They also stated that they made a lesson plan in which students would participate more actively by displaying a student-centered approach in the planning.

Some of the participants expressed the contribution of the eTwinning activity to the lesson planning process in the distance education process as follows:

> "Using technological education and training tools in eTwinning projects made me prepared in terms of where and how to use technological tools when planning distance education activities. It enabled me to use technological education and training tools more efficiently and effectively." (P15)

> "Online applications such as Kahoot, Wordwall, Liveworksheets, and interactive books that I currently use in my face-to-face classes have made the lesson planning process much easier." (P16)

Contribution to the Teaching Process

Participants were asked, “In what way did the eTwinning activity contribute to the teaching processes in distance education? Please explain.” They highlighted some points about the teaching process.

Table 9 Contribution to the Teaching Process

Contribution to the Teaching Process	
Contribution to the Student's Learning Process	Contribution to the Course Process
Ensuring learning fast in a short time	Supporting project-based teaching
Supporting permanent learning	Providing opportunities for interim assessment
Increasing motivation	Application of exams through Web 2.0 tools
Increasing effective learning	Teachers' use of technology in distance education
Supporting learning by doing and researching	Enriching lessons with Web 2.0 tools
Supporting active learning	Increasing motivation
Supporting student-centered learning	Supporting more active and fun lessons
Being able to express ideas and feelings easily through Web2.0 tools	Supporting synchronous and asynchronous teaching practices
Developing different perspectives in students	
Increasing the level of readiness of students to use technology in online education	

The contributions of the participants to the teaching process of the eTwinning activity in the distance education process were evaluated under two headings: contributions to the student's learning process and contributions to the course teaching process.

Contribution to the student's learning process

They claimed that the student's readiness level to use technology in distance education activities is sufficient, thanks to the digital competence they developed during their participation in eTwinning projects. They mentioned that a student-centered learning process took place during the course. They highlighted that students learn by actively participating in the lesson, experiencing, researching, and discovering. They concluded that students' motivation increased,

effective and permanent learning was supported, students learned quickly in a short time, they observed that students had different perspectives. Students could easily express their feelings and thoughts thanks to Web 2.0 tools.

Contribution to the course teaching process

Teachers pointed out that the eTwinning activity makes it easier to teach the lessons taught during the distance education process more actively and entertainingly, to enrich them with Web 2.0 tools, and to use synchronous and asynchronous teaching practices. Participants expressed that project-based teaching was supported in this process and that it increased the teacher's level of readiness in using technology in distance education activities.

Some of the participants expressed the contribution of the eTwinning activity to the teaching processes in the distance education process as follows:

> "It allowed our students to make up for lost distance and learning by using tools that bring distances closer, so to speak, during the distance education process. Especially using technology and making the most of it was among our indispensables for this period. For this reason, the benefits of Web 2.0 tools have become undeniable. Our students were able to actively participate in the lesson. We were able to move from passive learning to active learning. They were able to express their ideas and feelings easily thanks to Web 2.0 tools." (K12)

> "The practices that we started to use actively in our lessons through eTwinning activities were familiar to my students, and their adaptation was very easy. During this process, they were able to quickly complete the assignments and studies I sent, using both online and offline tools." (K17)

> "In eTwinning projects, we were communicating with our partners remotely and working on joint products. When we started the distance education process, it was as if we were already familiar with this situation." (K19)

Contribution to the measurement and evaluation process

What are the situations when eTwinning activity contributes to the measurement and evaluation processes in the distance education process? Please explain. The answers given to this question were evaluated under the headings of contribution to the measurement process and contribution to the evaluation process.

Table 10 Contribution to the measurement and evaluation process

Contribution to the Measurement and Evaluation Process	
Contribution to the measurement process	Contribution to the evaluation process
Ensuring easier and more accurate measurement	Providing faster feedback in assessment by using Web tools
Ease of measurement process thanks to the use of Web 2.0 Tools	Providing effective feedback
Saving time and energy	Providing feedback in the learning process
Performing measurements without the pressure of written or oral exams	Providing evaluation throughout the teaching process
Providing measurement throughout the teaching process	Easing the identification of unlearned topics
Supporting students to use their knowledge and skills easily	Performing more practical and easy evaluation

Obtaining information about each student's learning level
Increasing motivation by measuring with web tools
Offering the opportunity to measure all four skills of English

Contribution to the measurement process

Teachers who performed the measurement process with Web 2.0 tools increased students' motivation. They also noted that they had the opportunity to obtain information about the learning level of each student. Participants indicated that students had the opportunity to measure all four skills of English. They asserted that the students were able to use their knowledge and skills easily during the measurement process, without experiencing the pressure of written or oral exams. They claimed that with the use of Web 2.0 Tools, the measurement process becomes easier, and the measurement process is spread throughout the process, thus saving time and energy and making the measurement process easier and more accurate.

Contribution to the evaluation process

They pointed out that faster feedback is provided in evaluation by using Web 2.0 tools and feedback is provided more quickly and effectively. They reported that the evaluation takes place at the learning stages rather than at the end. It was emphasized that the evaluation was carried out with a process-oriented approach. Thus, the evaluation process was more functional and applicable, and the identification of unlearned topics was ensured in a more systematic manner. Some of the participants pointed out that the contribution of the eTwinning activity to the measurement and evaluation processes in the distance education process as follows:

> "Measurement and evaluation are indispensable for education. Web 2.0 Tools are the tools we frequently use to measure and evaluate during the distance education process. We were able to get immediate feedback. Thus, we tried to have an idea of how efficient the process was and tried to make our plan accordingly." (P6)

> "With some Web 2.0 tools, we were able to prepare special quizzes and exams for our students and receive feedback during their learning stages. Thus, we provided data about the learning level of each of our students. By identifying missing or incompletely learned topics, we were able to revisit those topics." (P12)

> "The eTwinning activity made a positive contribution to the measurement and evaluation processes in the distance education process. For example, when I used the Kahoot application to measure students' learning, they were more willing. When I used this measuring tool, they wanted me to use it more. That's why we made a Kahoot application in our lesson." (P14)

> "I was able to quickly receive the results of our work online and provide instant feedback." (P15)

Discussion

This study aims to examine the reflections of eTwinning projects implemented in schools on the distance education process implemented in the education process that continued remotely due to the coronavirus epidemic in 2020-2021. In this section, the findings of the study will be discussed in the context of eTwinning, project-based teaching, and distance education, which are emphasized as the conceptual framework of the study.

In the findings obtained through the interviews, teachers indicated that they perceived the eTwinning projects they implemented as an innovative practice because it was a technology-supported work. They said that they carry out a project-based teaching process by implementing eTwinning projects integrated with the curriculum. Participants asserted that they observed in the process that this innovative method increases motivation in students, contributes to permanent learning, and thus supports academic success. They emphasized that during the process, students were introduced to different cultures, thus their cultural awareness improved, and they showed positive attitudes towards different foreign languages in addition to English. Additionally, teachers claimed that they learned different Web 2.0 tools during the implementation processes of eTwinning projects and that they used Web 2.0 tools in both face-to-face and distance education processes to attract attention, teach new words, reinforce what was learned, take homework from students, and measure and evaluate. Participants highlighted that thanks to Web 2.0 tools, they were able to adapt to the distance education process more easily and that students continued their lessons without experiencing any learning loss in this process. They also expressed that while they continued teaching during the distance education process, they also continued their eTwinning projects and the students did not experience any loss of motivation. It was observed that teachers' synchronous and asynchronous lesson planning skills improved, they learned the differences between face-to-face lesson planning and distance lesson planning, and they adapted to this process more easily. eTwinning projects provide communication and collaborative working opportunities through the portal of schools registered in the portal in Europe and neighboring countries by using Information Technologies (Başaran et al., 2020). eTwinning projects are a platform where teachers participate voluntarily. For this reason, teachers who implement projects are innovative and enthusiastic (Bozdağ, 2017). In response to the question "Your opinions about the eTwinning activity", the majority of the teachers used the expressions "innovative, technology-supported, collaborative, and instructive". The eTwinning platform, as a European school network, is interactive, entertaining, and informative, as well as being an area that hosts innovation and technology. Yılmaz and Altun-Yılmaz (2012) achieved similar results. eTwinning is a multiculturalism project, students' native language, and foreign language It has been noted that it supports language development, self-confidence, and self-control.

Cachia et al. (2010) identified in their research that the eTwinning portal is an opportunity for peer learning among teachers and that it is important to support it so that teachers will have the opportunity to learn different, innovative, and creative practices in different countries. As a result of this research, teachers' reasons for taking part in eTwinning projects are to obtain new experiences, update themselves professionally, exchange information with their colleagues, learn different cultures by meeting new people of different nationalities, work together with people they meet and thus to develop national and international cooperation. It seems that their answers are consistent with benefiting from the experiences of their colleagues.

According to Gulbay (2018), eTwinning improves teachers' pedagogical knowledge as well as their professional contributions such as digital, leadership, and collaboration. Kearney and Gras-Velázquez (2015) found in their research that teachers who implement eTwinning projects support language development and professional skills such as collaboration, strategic thinking, and ICT skills. Selim and Üseini (2019) state that eTwinning is an area where teachers come together, share common ground, and increase their technological competencies. Gila (2018)

explained the teacher's role as supporting students to facilitate the learning process at their pace in the learning field. It seems that the research is compatible with the answers to the question 'The contribution of eTwinning projects to your professional development', such as teachers' development of technological skills, versatile perspective, and foreign language practice.

The answer to the question 'The contribution of eTwinning projects to your students' is the development of skills in using technology positively, starting to use Web 2.0 tools, phones, and tablets in lessons and activities, developing a positive attitude towards English, increasing their self-confidence in speaking English, gaining real-life skills, increasing motivation, curiosity and more. They argued that students' ability to learn quickly, socialize, work collaboratively, cooperate, act together, and behave tolerantly in this process is improved. In projects carried out with foreign partners, students' developing language skills increase their desire to talk to foreigners, they get to know different cultures, and they gain the awareness of respecting different cultures in the process. Fansury et al. (2020) state that different materials, visual, audio, and digital tools are meaningful in teaching foreign languages, especially for younger age students, and that they facilitate and accelerate the process of transferring two different cultures. The activities carried out in eTwinning projects confirm these judgments.

eTwinning projects support students' development processes. Yılmaz and Altun Yılmaz (2012) expressed that eTwinning projects support students' language development, increase their self-confidence, have the opportunity to know different cultures and improve students' ability to express themselves more easily.

In their research, Tapan Broutin and Memişoğlu (2018) observed that students involved in eTwinning projects were more active and successful in their classes. Akdemir (2017) obtained results that students gained valuable opportunities with eTwinning projects, experienced intercultural exchange, and contributed to the process of native and foreign language development.

Alcaraz Marmol (2020) emphasized that there is a difference in cultural development awareness between the students who are included in the eTwinning projects implementation team and the students who have knowledge about eTwinning projects and that the awareness of the participants is higher than others. In an eTwinning project, which is a project-based teaching application for game design in the Information Technologies course, Gülmez (2018) states that students have the opportunity to work collaboratively throughout the project process, communicate with students from different countries, and see deficiencies and errors by receiving feedback.

According to Aslanides (2016), one of the best opportunities that project-based teaching studies provide to students is the realization of learning practice. With this approach, in which more than one application is carried out, the information obtained by the student is easier to understand and more permanent.

In the study of Saracaloğlu et al. (2006), it was revealed that project-based teaching application offers students the opportunity to learn by doing and experiencing. Thus, they emphasized that it is a teaching method that adds dynamism to student work teams to solve real-life problems. According to the research findings, students involved in eTwinning projects have gained affective gains, and their motivation in the education process has increased. This situation is very important in terms of the quality of education (Güzel et al., 2010).

Web 2.0 tools support students in the process of achieving meaningful learning and increase the transformation of preliminary knowledge into permanent knowledge by activating it (Karalar & Özdemir, 2013). According to Michel and Lavoué (2011), the use of Web 2.0 tools in the project-based teaching process improves the acquisition of complex skills such as management, communication, and collaboration, which require behavioral evolution.

According to Eser (2020), teachers need to prepare special content for the classes they teach. This content must be arranged according to the student's learning speed and cognitive readiness. Web 2.0 tools have an important place in this preparation. It has been regarded that implementing projects using web 2.0 tools through the eTwinning portal offers new opportunities (Başaran et al., 2020).

Demir (2019) stated that it would be correct and appropriate to use Web 2.0 tools in the content of each project, appropriate to the student's age group and in direct proportion to the level of the student.

Galvin et al. (2007) reported that conducting eTwinning projects and educational activities through distance education in collaborative online learning environments enabled students to improve their digital skills.

The question asked the participants, 'The contribution of the eTwinning activity to the lesson planning processes in the distance education process' answered that they produced digital content while preparing content for the courses held in the distance education process, that they created these contents using Web 2.0 tools, and that they used Web 2.0 tools appropriate for their purpose for each stage of each lesson, and at a level that students can use. They answered that they had determined the tools.

Bernard et al. (2004) highlighted that in project-based online lessons, groups work on gaining knowledge through collaborative work. Gajek (2021) has that the framework of eTwinning is flexible, gives space to teachers and students, and the topics of the projects can be determined from the curriculum content. It was clamied that a student-centered learning process took place during the lesson process.

To the question 'What was the contribution of the eTwinning activity to the teaching processes in the distance education process?', teachers answered that the lessons were taught more actively and entertainingly with the eTwinning-curriculum integration in the distance education process, that they should be enriched with Web 2.0 tools, and that the use of synchronous and asynchronous teaching practices made it easier. Participants declared that project-based teaching was supported in this process and that it increased the teacher's level of readiness in using technology in distance education activities.

eTwinning projects can combine language learning and literacy, ICT (as a curriculum subject or skill set), science and mathematics, and various social science subjects. In this study, project-based teaching was carried out online within the scope of eTwinning projects. Teachers emphasized that eTwinning contributed to the student's distance education process and that students actively participated in online lessons and carried out their learning processes by doing, experiencing, and researching.

Simonson et al. (2012), level determination or formative measurement tools and techniques can be used in the measurement and evaluation process applied in distance education. The tools and

techniques prepared for use in assessment for formative purposes should be designed in a way to observe the development of students during the education process and to enrich and support their learning processes by receiving feedback.

Teachers responded to the question 'What are the situations in which the eTwinning activity contributes to the measurement and evaluation processes in the distance education process?', that the measurement process with web 2.0 tools increases the student's motivation, they have the opportunity to obtain information about the learning level of each student, and that they can get feedback faster in evaluation by using web 2.0 tools. They answered that it was provided and that feedback was obtained more quickly and effectively. In addition, they responded that the evaluation was carried out at the learning stages rather than at the end, that the evaluation was spread throughout the process, that a more practical and easier evaluation process took place, and that unlearned issues were more easily identified. Faigenbaum et al. (2014), multiple-choice tests are insufficient to evaluate most of the skills required in the digital age.

Teachers participating in the current study emphasized that they used different applications using web 2.0 tools as well as testing techniques when measuring and evaluating during the distance education process.

Limitations and future directions

The findings obtained in this research are limited to the opinions of 32 teachers working at the high school level in Gaziantep Province. It is thought that a study involving teachers from other provinces and at different levels of education could yield more diverse data. The study was conducted with a limited number of participants in accordance with the qualitative research design. Therefore, the generalizability of the findings is limited in this context. In addition, only a semi-structured interview form was used in the data collection process. Data diversity based on the use of different multiple data sources could not be provided.

The preference for mixed method approaches, where quantitative and qualitative methods are used together, can increase the reliability and validity of the data to be obtained. Rather than focusing only on the opinions of teachers, the inclusion of other stakeholders in the education and training process, such as students, parents, and school administrators, can provide a multidimensional analysis opportunity. In addition, including longitudinal studies to examine the long-term effects of eTwinning projects on teaching-learning processes will make significant contributions to the literature.

Conclusion

With the current research, it has been concluded that the eTwinning projects that teachers implemented in their lessons before the epidemic period contributed to online lessons conducted with distance education during the COVID-19 period. Teachers who implemented eTwinning projects carried out collaborative work with these project activities, engaged in cultural exchange with colleagues from different countries, and actively used Web 2.0 tools at different stages of the lessons. Implementing eTwinning projects in the pre-pandemic period increased the readiness of teachers and students. It enabled them to easily adapt to the process and go through this process efficiently in online courses during the pandemic.

The results of the current study can be listed as follows:

eTwinning activity is an instructive, technology-supported, fun, and collaborative application.

The reasons why teachers take part in eTwinning projects have been determined as follows: To keep up with the 21st century, to gain new experiences, to teach lessons more actively and to support students' active participation in the lesson, to meet colleagues from their own countries and different nationalities and to learn different cultures.

eTwinning projects have facilitated the use of project-based education applications and supported the technological skill development of teachers and students, enabling them to easily adapt to the distance education process. They have contributed to the professional development of teachers in terms of producing creative content, creating environments that support permanent learning, improving project management and application skills, applying new methods and techniques, increasing discovery skills as a result of self-confidence development, and facilitating foreign language learning.

eTwinning projects increase students' interest in the course and provide them with a culture of collaboration through project-based teaching practices. Students' positive attitudes towards doing projects create a desire to take part in different projects. eTwinning projects provide students with the skills to use technology positively and support them in using web 2.0 tools and technological materials in projects and lessons. International eTwinning projects increase students' desire to speak English during their implementation processes. The activities carried out in the projects also contributed to the development of students' skills in cooperation, acting together, and being tolerant of different ideas.

Teachers use web 2.0 tools at different stages of eTwinning projects, distance education courses, measurement and evaluation processes, and creating videos, posters, logos, e-books, avatars, animations, and websites.

Teachers produced digital content for the lessons held during the distance education process with the digital skills they acquired within the scope of eTwinning projects. Teachers have enriched their course content by using Web 2.0 tools appropriate to students' digital skill levels. Teachers' application of different methods in eTwinning projects enabled them to plan lessons in the distance education process synchronously and asynchronously. In eTwinning projects, teachers designed student-centered lesson plans and ensured the active participation of students in lessons.

Thanks to the digital competence developed by the students in the eTwinning projects, they easily adapted to the teaching processes in distance education courses and actively participated in the course. Students' use of Web 2.0 tools while expressing their feelings and thoughts makes their learning process enjoyable. Thanks to the eTwinning projects they implemented in face-to-face lessons before the pandemic, teachers have also integrated the project-based teaching method into lessons in the distance education process.

Carrying out measurement and evaluation with Web 2.0 tools during the distance education process has provided the opportunity to obtain information about the learning level of each student. The use of digital tools in the measurement process has reduced the pressure of written or oral exams and enabled the use of knowledge and skills easily. The use of Web 2.0 tools in the evaluation process has accelerated the giving of feedback to students.

Statement of Researchers

Researchers' contribution rate statement

The authors equally contributed to this overview

Conflict statement

The authors declare no potential conflicts of interest.

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