Buca Eğitim Fakültesi Dergisi,
2024, sayı 62, ss. 3107- 3126

Araştırma Makalesi

The Journal of Buca Faculty of Education,
2024, issue 62, pp. 3107- 3126

Research Article

Effective Social Studies Teaching Through the Use of Technology*

Teknoloji Kullanımı Yoluyla Etkili Sosyal Bilgiler Öğretimi

Aslı Avcı Akçalı[1], *Melisa Öztürk*[2]

[1]*Doç. Dr., Dokuz Eylül Üniversitesi, asli.avci@deu.edu.tr, (https://orcid.org/0000-0001-7628-3180)*
[2]*Uzman, Milli Eğitim Bakanlığı, uslumelisa59@gmail.com, (https://orcid.org/0009-0006-3368-3815)*

Geliş Tarihi: *31.05.2024* ***Kabul Tarihi:*** *06.11.2024*

ABSTRACT

It is known that the use of technology within the scope of teaching activities offers significant benefits in terms of the development of various skills of students. This research aimed to contribute to the development of students' 21st century skills through activities based on the use of Web 2.0 tools in the social studies course. The research is based on action research, one of the qualitative research designs. The 21st century skills of the study group and the development of these skills were measured by the "Comprehensive 21st Century Skills Scale". In the other dimension of the research, face-to-face interviews were made to obtain participants' opinions on the implementations. The research was conducted in the fall semester of the 2022-2023 academic year with 7th-grade students of a public secondary school in Izmir. It was carried out with a total of 22 students over 10 weeks. Libraries in Python programming language were used to analyze the quantitative data collected using the scale. The content analysis method was used to analyze the qualitative data obtained through the interview form. At the end of the research, it was seen that the activities based on Web 2.0 tools contributed to develop participants' 21st century skills such as critical thinking and problem-solving, creativity and innovation, information, communication and technology literacy, entrepreneurship, and self-management skills. Participants' opinions on implementations were positive regarding their contribution to skill development, retention of what was learned, and making lessons more fun. In line with the results of the research, suggestions for educators and researchers on the use of Web 2.0 tools were presented.

Keywords: Social studies, technology, Web 2.0 tools, 21st century skills.

ÖZ

Teknolojinin öğretim faaliyetleri kapsamında kullanımının öğrencilerin çeşitli becerilerinin gelişimi açısından önemli getiriler sunduğu bilinmektedir. Bu araştırmada sosyal bilgiler dersinde yapılan Web 2.0 araçları kullanımına dayalı etkinlikler yoluyla öğrencilerin 21. yüzyıl becerilerinin gelişimine katkı sağlanması amaçlanmıştır. Araştırma nitel araştırma desenlerinden biri olan eylem araştırmasına dayanmaktadır. Araştırmada 7. sınıflardan oluşan çalışma grubunun 21. yüzyıl becerileri ve bu becerilerdeki gelişim "Kapsamlı 21. Yüzyıl Becerileri Ölçeği" ile ölçülmüştür. Araştırmanın diğer boyutunda, yapılan çalışmaların etkililiğine dair katılımcı görüşlerinin alınması amacıyla yüz yüze görüşmeler gerçekleştirilmiştir. Araştırma 2022-2023 eğitim öğretim yılı güz döneminde, İzmir'de yer alan bir devlet ortaokulunun 7. sınıf öğrencileriyle gerçekleştirilmiştir. Çalışma toplam 22 öğrenci ile, 10

* This research is based on the master's thesis completed by the second author under the supervision of the first author at DEU Institute of Educational Sciences, with the same title. It was supported by DEU Department of Scientific Research Projects as a master's thesis project (SYL-2023-3057).

haftalık bir sürede yürütülmüştür. Araştırmada ölçek aracılığıyla toplanan nicel verilerin analizinde Python programlama dilindeki kütüphaneler kullanılmıştır. Görüşme formu kullanılarak elde edilen nitel verilerin analizi için ise içerik analizi yöntemine başvurulmuştur. Araştırma sonucunda Web 2.0 araçları aracılığıyla gerçekleştirilen etkinliklerin öğrencilerin 21. yüzyıl becerilerinden eleştirel düşünme ve problem çözme, yaratıcılık ve yenilikçilik, bilgi, iletişim ve teknoloji okuryazarlığı, girişimcilik ve özyönetim becerilerinin gelişimine anlamlı düzeyde katkı sağladığı görülmüştür. Katılımcıların Web 2.0 uygulamalarının derslerde kullanımına dair görüşlerinin ise beceri gelişimine katkısı, öğrenilenlerin kalıcılığı ve derslerin daha eğlenceli olması açısından olumlu olduğu tespit edilmiştir. Araştırma sonuçlarından hareketle eğitimci ve araştırmacılar için Web 2.0 araçlarının kullanımına yönelik öneriler sunulmuştur.

Anahtar Kelimeler: Sosyal bilgiler, teknoloji, Web 2.0 araçları, 21. yüzyıl becerileri.

INTRODUCTION

Human beings have been endeavoring to meet their needs and lead a better life since the first moment of their existence. This endeavor also forms the basis of technological development and progress from past to present. The developments in the field of technology in the last few centuries have been much faster than before. These developments in the technological field contribute to individuals living more comfortably in all areas of life from communication to health, from access to information to transportation.

In our age, technology has become indispensable in every field of life. In this direction, technology-supported teaching is an inevitable necessity for education systems. The use of technology in education can be traced back to the use of radio, TV, video, and overhead projectors in schools. However, today, the main developments affecting the improvement and quality of educational institutions have been computers, the Internet, and related technologies (Aksoy, 2003).

It is obvious that all countries, especially developing ones, need to allocate much more resources to the teaching of technology and technology-supported education (Güllüpınar et al., 2013). It can be said that this situation is related to the gains provided by the use of technology in educational environments and the audience addressed. The connection of the generation born after 2000 called Generation Z with technology is at a high level that cannot be ignored. They follow technological developments more and technology has a significant status in their daily life. For this reason, incorporating technology into educational environments can offer very practical benefits for them.

Using technology in the educational environment has an important reason other than the close relationship of the young generation with technology. That is, technology in education provides contributions enabling students to have the skills required by the modern age. Raising individuals with these skills also forms the basis of current approaches in education. Many international researches, reviews, and reports touch upon the significance of the skills that individuals living in the 21st century should have in social and business life (Cansoy, 2018). The skills and competencies that education systems want individuals to gain to socialize and actively participate in the economy are referred to as 21st century skills (Ananiadou & Claro 2009). Also to cope with the problems faced by humanity today, individuals need to develop such skills (Dede, 2010). In this direction, gaining 21st century skills is one of the important goals of education.

Modern education systems have developed greater expectations that schools equip young people with this broader set of skills for the 21st century (Doecke & Maire, 2019). The Partnership for 21st Century Skills (P21) (2015) identified the 21st century skills as 13 skills under 3 main headings. These are; 1. Learning and innovation skills (creativity and innovation, critical thinking and problem-solving, communication, collaboration) 2. Information, media, and technology skills (information literacy, information, communication technology (ICT literacy, media literacy) 3.

Life and career skills (flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, leadership and responsibility).

21st century skills have been included in the education programs of many countries (Doecke & Maire, 2019). For example, they have been integrated into the education process of various states in the USA. In addition, many organizations provide support to educators in the development of 21st century skills (Gelen, 2017). Apart from the USA, signs of 21st century skills are also seen in the education programs of countries such as New Zealand, Australia, Italy, Canada, Norway, Finland, Belgium, and Ireland (Tuğluk & Özkan, 2019). Because the acquisition of 21st century skills is important for all modern education systems (Larson & Miller, 2011; Saavedra & Opfer, 2012) the idea that students should be equipped in this respect is generally accepted (Walser, 2008).

When the objectives and curricula of the courses offered at different levels of education in Turkey are examined, skills that are in parallel with 21st century skills draw attention. In the report published by the Board of Education in 2017 titled "On Our Renewal and Amendment Studies in the Curriculum", it was stated that "The competencies and skills called 21st century skills, which are expected to be possessed by the graduates of the new century, have also been taken into consideration in the structuring of the learning outcomes and outcome descriptions" (Republic of Türkiye Ministry of National Education Board of Education, 2017). Accordingly, the social studies course, like other courses, has come to encompass these skills. Both as a requirement of the constructivist approach and as a result of its multidisciplinary structure, the social studies course contains an infrastructure suitable for students to develop various 21st century skills. Thus, many skills mentioned in the 2018 social studies curriculum (Ministry of National Education [MNE], 2018) that are aimed to be acquired overlap with 21st century skills. Also in 2024, it is seen that the new curricula, which started to be implemented at certain grade levels, frequently include 21st century skills among the sub-dimensions of conceptual skills, field skills, and social and emotional learning skills (MNE, 2024).

It can be considered that technology has an important potential in the acquisition of 21st century skills in social studies courses. Because, it is known that technology provides gains in terms of the development of various cognitive skills such as logical-mathematical understanding, problem-solving, language, and vocabulary development (NAEYC-FRC, 2012). It can also be used to realize affective goals such as developing empathy skills and teaching values through various methods (Braun, 1999). In addition, it was determined that using different technological tools contributed to the development of 21st century skills such as communication (Malinina, 2016; Terrell et al., 2011), digital literacy (Baki, 2022), metacognitive and creative thinking (Gündüzalp, 2021; Kaya, 2008). For this reason, it can be thought that 21st century skills can be developed by the use of technology in social studies courses. Also, this would be useful for effective teaching and achieving the objectives of the course. Because, among the aims of the social studies course, it was emphasized that students should especially know the development processes of science and technology and their impact on society, as well as the necessity of using technology correctly and consciously (MNE, 2018; 2024).

Another dimension of the issue is how the development of 21st century skills in the social studies course can be realized through the use of technology. In this manner, web-supported learning is a significant tool with regards to provide flexibility in terms of time and place, easy updating of the content, adjusting the curriculum and content according to the level and needs of the students, easy provision of activity diversity, inexpensive course materials, and receiving feedback in a shorter time. Web 2.0 tools are web technology services that enable online cooperation and sharing among Web users. The advantages of Web 2.0 tools such as focusing on information innovation, providing faster and easier access to information, reducing costs, hosting digital content, and allowing users to control access to resources by verifying their identity (as cited in Karadağ & Garip, 2021) can be used in the education process. The benefits of Web 2.0

technologies such as educational efficiency, learning, motivation, and learning to learn are important (Byrne, 2009).

This research is based on the idea that the use of Web 2.0 tools in the social studies course can develop 21st century skills because of the contributions of technology use in education to skill development. In this context, firstly, the literature on the use of technology in social studies teaching and the development of 21st century skills was examined individually (because no study analyzed the two together). The research conducted by Bolick (2002) on the use of technology in social studies teaching revealed that the use of technology contributes to meaningful learning. Based on the results of the research of Boon et al. (2006), it is possible to say that the use of technology in social studies courses increases subject area learning and student achievement. Braun (1999) also states that the use of technology within the scope of the course contributes to the realization of affective goals. In addition, various studies on the development of higher-order thinking skills, which are among the 21st century skills, have been conducted within the scope of social studies courses. Öztürk (2010) studied the development of students' creative thinking, Demir (2006), and Kurnaz and Sünbül (2007) examined the development of their critical thinking skills within the scope of this course and obtained positive results. Hepburn (1999), and Stein and Prevet (2009) also stated that this course is important in teaching media literacy skills to students. In addition, according to Shepherd (1998), the social studies course is suitable for developing 21st century skills such as problem-solving and critical thinking through the use of different methods. These studies have revealed the benefits of using technology in social studies teaching and that the course is a suitable ground for developing 21st century skills. Based on these findings of the existing literature, the current study was structured to use web 2.0 tools, which make practical and effective contributions to the educational process, to develop 21st century skills in the social studies course, and to realize more effective social studies teaching in this way. The problem of the research was stated as "Is it possible to develop 21st century skills through the use of technology in the social studies course?".

The sub-problems addressed in the research were as follows:

- What is the effect of teaching activities created with Web 2.0 tools on the development of students' 21st century skills in the social studies course?
- What are the participants' perceptions about the activities realized through the use of Web 2.0 tools?

METHOD

2.1. Research Design

Action research is a systematic and planned approach in which teachers are in the process as researchers (Balcı, 2021), which is frequently used in improving education and training processes and developing both personal and professional competencies of teachers (Johnson, 2019). The design of the study conforms to the action research design since it aims to develop and improve the educational processes by supporting the development of 21st century skills in social studies teaching.

2.2. Study Group

In the research involving application, the researcher can choose a situation that is easily accessible and less costly in many respects (Yıldırım & Şimşek, 2011). In this direction, the institution where the researcher was teaching was determined as the implementation school for the research.

The study group consisted of 22 students studying in the 7A branch of the determined public school in İzmir. The criterion sampling method was used in the selection of the study group. Criterion sampling can be expressed as a method that focuses on the situation that will directly shed light on the questions sought to be answered in the research (Patton, 2014). The researcher (since she was the teacher of the group) determined the relevant branch as the study group based on her observations, evaluations, and the exchange of opinions with school administrators and other branch teachers. The academic and social development levels of the study group in terms of 21st century skills (being open to development) were taken as the main criterion. In this context, especially earlier in-class observations and assessment data showed that the group was open to development in terms of skills such as communication, cooperation, entrepreneurship, leadership, critical thinking, problem-solving, and creativity. Thus, it was ensured that there was a situation that needed to be improved in terms of the participants and a study group that was suitable for the research aim was determined.

2.3. Data Collection

In action research, it is possible to use qualitative and quantitative data collection tools to answer the main question of the research (Ekiz, 2003; Frankel & Wallen, 2008; Mertler, 2012; Mills, 2007). In this direction, in the research, the development of 21st century skills was measured by the "Comprehensive 21st Century Skills Scale". In addition, within the scope of the qualitative dimension of the research, face-to-face interviews were conducted with the participants to learn their opinions on the implementations. In this context, a semi-structured interview form was used.

The approval of the Dokuz Eylul University Social and Human Sciences Scientific Research and Publication Ethics Committee (Number: E-87347630-659-369725) was obtained for the ethical appropriateness of the data collection tools.

2.3.1. Comprehensive 21st Century Skills Scale

Comprehensive 21st Century Skills Scale developed by Kalemkuş and Bulut Özek (2022) is a five-point Likert-type scale consisting of 63 items. The item statistics formula was used to calculate the content validity of the items of the scale, and it was stated that the content validity was sufficient. The scale has nine factors: "Critical Thinking and Problem-Solving", "Social, Responsibility and Adaptation", "Collaboration", "Media Literacy", "Information, Communication and Technology Literacy (ICT)", "Creativity and Innovation", "Entrepreneurship and Self-Management", "Communication", "Leadership" skills. The Cronbach's Alpha reliability coefficient of the factors of the scale was determined as .921 for Factor1, .917 for Factor2, .899 for Factor3, .865 for Factor4, .850 for Factor5, .687 for Factor6, .674 for Factor7, .667 for Factor8 and Factor9 .614 (Kalemkuş & Bulut Özek, 2022). Cronbach's Alpha reliability coefficient for the whole scale was calculated as .973.

After determining the suitability of the scale for the current research, ethical conditions to use were fulfilled by obtaining permission of the researchers who own the scale. Then the scale was used to reveal how the participants' 21st century skills changed from before to after the implementations including Web 2.0 tools.

2.3.2. Semi-structured Interview Form

The other data collection tool of the research was an interview form developed to evaluate the implementations based on the Web 2.0 tools from the participants' perspective. Such forms are created for specific case studies and can be used to obtain information easily and factually (Gillham, 2000).

The question pool of the interview form was first prepared. The questions were formulated by reviewing the literature and allowing the participants to evaluate the practices in different

dimensions. The questions were about the contributions of the activities, differences compared to other teaching styles in the course, evaluation of Web 2.0 tools, negative dimensions of the activities, and whether they would like to implement such activities again. The form was submitted to the opinion of 3 field experts and evaluated in terms of its suitability for the research, its adequacy, and comprehensibility. Then, it was edited in line with the suggestions. After the completion of all the studies, interviews were conducted with 10 students.

2.4. Implementation Process

In the research, firstly, the learning area (culture and heritage) and learning outcomes were determined. Then, Web 2.0 tools were examined and the ones (Lumi, Kahoot!, Canva) that could be used to create activities suitable for the topic and research aim. Then, the games to be used in the implementation were prepared in Kahoot! and Lumi, and the activities to be carried out with Canva were planned (In line with the observations made during the implementations, the process was improved by making arrangements in planned activities when deemed necessary). The participants were informed about the Web 2.0 tools, implementation pocess and the studies to be carried out inside and outside the school. Then, the Comprehensive 21st Century Skills Scale was applied to the students as a pre-test. Implementations were carried out in the fall semester of the 2022-2023 academic year.

For each activity, firstly, the subject content was explained in the course, and then the activities based on Web 2.0 tools were implemented. Implementations were carried out with Lumi as an in-school activity and with Kahoot! as an out-of-school activity (at home) (Participation in home studies was provided by the researcher's parent-student communication and planning over the phone). Some activities were carried out both using Lumi and Kahoot! and some were carried out using only Kahoot!. After completing the nine-week implementations in this way, in the 10th week, students were asked to prepare various brochures and posters related to the subject in Canva. The tasks of preparing brochures and posters were sometimes carried out during class hours and outside class hours (at home).

After all of the 10 week activities based on Web 2.0 tools were completed, the scale was reapplied as a post-test. This followed by interviews with the participants. Then, the data obtained with the mentioned qualitative and quantitative data collection tools were analyzed.

2.5. Data Analysis

The quantitative data collected by the Comprehensive 21st Century Skills Scale were analyzed by using libraries in Python programming language (NumPy, pandas, scipy.stats.shapiro, scipy.stats.ttest_rel, etc.). The Cronbach’s Alpha reliability coefficient of the Comprehensive 21st Century Skills Scale for the current study was ,936.

In the analysis process of qualitative data, firstly the pre-test data were averaged and the Shapiro-Wilk test was used (because the sample size is less than 50) to determine whether the data were normally distributed. While the kurtosis of the pre-test data was -0.312, the skewness value was 0.225. Then the same study was conducted for the post-test. While the kurtosis value of the post-test data was -0.148, the skewness value was -0.538. The fact that the skewness and kurtosis values of the data were in the range of +2 to -2 was evaluated as meeting the normality assumption (Büyüköztürk, 2017) of the variables related to the research. Since both data sets were normally distributed, the t-test, a parametric test, was used to compare the pre-test and post-test data. Dependent samples t-test is used in studies in which the difference between the means of two related variables is examined (Marshall, n.d.). In this context, the dependent samples t-test was conducted to determine to what extent the participants' 21st century skills changed from before to after the applications. The data were presented in the form of tables and interpreted.

The interview data were analyzed by content analysis method. Content analysis is “systematically and objectively digitizing and classifying the message contained in verbal

materials in terms of meaning or grammar and reaching inferences in this way" (Tavşancıl & Aslan, 2001, p. 22). By interpreting the results obtained in this way, generalizations and relationships between data are reached. These results support various observations and future predictions.

In the research, the data obtained through interviews were coded separately by two researchers. The percentage of agreement between the codings was found to be 82, which was within a reliable range (Miles & Huberman, 1994, p. 64; Multon, 2010). The qualitative analysis results were quantified and given in tabular form and examples of the opinions describing the relevant categories were presented.

FINDINGS

3.1. Findings Related to the First Sub-Problem of the Research

The data obtained by applying the Comprehensive 21st Century Skills Scale as a pre-test and post-test were analyzed with dependent samples t-test to reveal the effect of the practices on students' 21st century skills. The findings in this context are presented in Table 1.

Table 1

Dependent Samples T-Test Results of Students' Comprehensive 21st Century Skills Scale Pre-Test-Post-Test Scores

Scale Factors	Test	N	$\bar{X}$	S	Sd	T	P
Communication	Pre-test	22	4.40	0.52	21	-1.10	0.24
	Post-test	22	4.53	0.46			
Collaboration	Pre-test	22	4.11	0.75	21	-1.95	0.063
	Post-test	22	4.32	0.74			
Critical Thinking and Problem Solving	Pre-test	22	3.93	0.79	21	-2.12	0.046
	Post-test	22	4.14	0.74			
Creativity and Innovation	Pre-test	22	3.95	0.67	21	-2.28	0.033
	Post-test	22	4.30	0.48			
Media Literacy	Pre-test	22	3.97	0.76	21	-1.33	0.268
	Post-test	22	4.20	0.79			
Information, Communication and Technology Literacy	Pre-test	22	3.95	0.89	21	-3.07	0.005
	Post-test	22	4.36	0.73			
Social, Responsibility and Adaptation	Pre-test	22	4.13	0.69	21	-1.54	0.13
	Post-test	22	4.33	0.67			
Entrepreneurship and Self-Management	Pre-test	22	3.71	0.76	21	-2.88	0.006
	Post-test	22	4.20	0.68			
Leadership	Pre-test	22	3.90	0.71	21	-1.038	0.31
	Post-test	22	4.07	0.68			

Table 1 shows that the scores obtained in the communication skills dimension of the scale increased from the pre-test ($\bar{X}$=4.40) to the post-test ($\bar{X}$=4.53) on the basis of arithmetic mean.

However, this difference between pre-test and post-test scores was not significant ($t_{(22)}$= 0.24; p>0.05). In this direction, it can be said that the activities did not make a significant difference in terms of communication skills. This would be due to the structure of Web 2.0 tools, activities, and the students' approach. The activities using Kahoot! and Canva were designed to be carried out sometimes individually and outside of school. Moreover, in the activities carried out in the classroom, it was observed that some students were hesitant to participate due to their negative attitudes towards the participants who made mistakes, uneasiness caused by the sense of competition, or successful students became more entrepreneurial. In addition, it was observed that some difficulties were encountered while trying to form homogeneous groups in the classroom in Lumi applications, and the activities were found to be less fun by the students compared to the others. The lack of a significant increase in communication skills would be related to these reasons. It was thought that this situation led to a similar result in terms of collaboration skills, which were another social skill. Because when the results of the pre-test ($\bar{X}$=4.11) and post-test ($\bar{X}$=4.32) were examined in terms of collaboration skills, although there was an increase in terms of arithmetic mean, this difference was not significant ($t_{(22)}$= 0.063; p>0.05).

According to the table, a significant increase was observed in terms of critical thinking and problem-solving skills from pre-test to post-test ($t_{(22)}$= 0.046; p<0.05). It would be interpreted that the activities based on Web 2.0 tools were suitable for developing the critical thinking and problem-solving skills of the participants. Since, the activities designed to enable students to experience problem-solving and critical evaluations in a fun way were frequently used in the applications.

In terms of creativity and innovation skills, there was an increase from the pre-test ($\bar{X}$=3.95) to the post-test ($\bar{X}$=4.30). This increase reflects a significant difference ($t_{(22)}$= 0.033; p<0.05). This proved the positive contribution of the activities to the development of creativity and innovation skills. In this respect, especially the activities using the Canva may have been effective. In these activities including Canva, children realized many original designs using their imagination and creativity within the specified time. At the same time, other tools were including plays and activities encouraging these skills.

The analyses show that there is an increase from the pre-test ($\bar{X}$=3.97) to the post-test ($\bar{X}$=4.20) in terms of arithmetic mean in terms of the development of media literacy skills. However, it was understood that this increase was not significant ($t_{(22)}$= 0.268; p>0.05). It can be said that this situation is due to the structure of the practices. Because media tools may not have been used frequently enough in the activities created by considering the basic written sources of the course.

As reflected in Table 1, the participants improved in terms of information, communication and technology literacy skills and that there was a significant difference in the scores from the pre-test to the post-test ($t_{(22)}$= 0.005; p<0.05). Practices based on Web 2.0 tools were quite different from teaching with traditional methods and techniques. The participants who did not know any Web 2.0 tools until before the study, made designs using Web 2.0 tools, solved questions with different structures, and used technology intensively and in connection with their courses. Accordingly, it was possible to see a significant improvement in information, communication, and technology literacy skills.

In terms of social, responsibility, and adaptation skills, there was no significant difference from the pre-test ($\bar{X}$=4.13) to the post-test ($\bar{X}$=4.33) despite the increase in the arithmetic mean ($t_{(22)}$= 0.13; p>0.05). It was thought that the lack of significant development of social, responsibility and adaptation skills may be related to some problems in accessing the internet due to the socio-economic structure of the neighborhood where the school is located, the student's level of readiness, the insufficient development of social skills and the weakness of the class dynamics in this sense.

According to the table, the scores obtained from the scale in terms of entrepreneurship and self-management skills increased significantly from the pre-test to the post-test ($t_{(22)}$= 0.006; $p<0.05$). This shows the positive contribution of the practices to the development of this skill. As a matter of fact, within the scope of the activities, students carried out creative activities, carried out individual studies without help, and coped with the complex tasks required by the use of technology they had just encountered. Accordingly, it was thought that their entrepreneurship and self-management skills increased.

In terms of leadership skills, despite the increase in the arithmetic mean from the pre-test ($\bar{X}$=3.90) to the post-test ($\bar{X}$=4.07), there was no significant difference ($t_{(22)}$= 0.31; $p>0.05$). This is in line with the results obtained from the communication and cooperation dimensions. It can be thought that the problems experienced in communication between students, intensity of individual-oriented activities, the sense of competition in group work and the inability to create healthy group dynamics negatively affect the development of leadership skills.

3.2. Findings Related to the Second Sub-Problem of the Research

In this section, the findings regarding the participants' opinions about the courses created based on Web 2.0 tools were presented.

3.2.1. Contributions of the Courses to Students

First, the students were asked what kind of contributions the activities based on Web 2.0 tools in the social studies course made to them. The findings obtained in this direction are given in Table 2.

Table 2

Opinions on the Contributions of the Courses to Students

Categories	Frequency (f)
Providing retention	5
Being fun	5
Increased motivation for the course	4
Increase in exam score	3
Learning something new about technology	3
Providing self-confidence	2
Facilitating learning	1

When the responses of the students were examined, it was seen that the most frequently mentioned topics were providing retention and being fun. These and the other responses indicate that activities based on Web 2.0 tools have positive effects, especially on learning, achievement and attitude towards the course.

Examples of Opinions:

Participant 2: It was enjoyable and funnier for me. Web 2.0 applications made the course more fun.

Participant 4: My first grade was low, but my second grade went up to 92. My course grade went up.

Participant 10: I understood it better and it stuck in my mind.

3.2.2. Differences of the Courses from Previous Ones

After the implementations participants' opinions on the aspects of these courses that differ from other ones were also taken. The data obtained in this direction are given in Table 3.

Table 3

Opinions on the Difference of the Courses Compared to Previous Ones

Categories	Frequency (f)
More fun	9
More engaging	6
More game content	2
More active participation	2
More memorable	2
More motivating	1
More disciplined	1

It was observed that the students frequently mentioned the fact that the courses based on Web 2.0 tools were more fun in terms of their differences from other courses. In addition, some participants stated that these courses were more interesting, game-based, open to active participation, memorable, motivating, and disciplined and that they were different from other courses in these respects. One of the students expressed the more disciplined nature of these courses as a negative situation. It was noticed that tightly structured lessons and activities with intensive tasks were not suitable for this student's academic characteristics and learning approach. Yet, most of the participants thought that the courses differentiated positively to a great extent.

Examples of Opinions:

Participant 3: We had fun both at home and in the classroom, we understood better and it was more interesting. We were not constantly writing.

Participant 5: It was a more concrete, memorable, and interesting field for me. I already liked history and I started to like it more with these applications.

Participant 7: It became a more workable lesson. The class started to listen to the lesson more.

3.2.3. Negative Aspects of the Courses

After the implementations, participants' opinions on the negative aspects of these courses were taken. The findings in this context are presented in Table 4.

Table 4

Opinions on the Negative Aspects of the Courses

Categories	Frequency (f)
No negative aspects	6
Occasional technological problems	2
Unequal role distribution in some group games	1
Increased sense of race and competition	1

As seen in Table 4, the majority of the students stated that there were no negative aspects of these courses. In addition, technological problems, unequal distribution of power in group games, and an increased sense of race and competition were mentioned. These findings point to some problems arising from the social interaction between the participants during the practices.

Examples of Opinions:

Participant 3: The unequal distribution of power in some group games was a negative aspect. In Lumi, some groups were very strong and some groups were very weak.

Participant 4: I don't like racing and competition, teaching like this increased it in the classroom.

Participant 8: Due to technological problems, we were able to join the game late and our ranking in the game dropped.

3.2.4. The Effects of Courses on Skill Development

Students' opinions on the effects of courses based on Web 2.0 tools on skill development were taken. The findings obtained in this context are presented in Table 5.

Table 5

Opinions on the Effects of Courses on Skill Development

Categories	**Frequency (f)**
Collaboration skills	10
Creativity skills	9
Communication skills	9
Skills to use technology	5
Problem solving skills	1
Skills to learn effectively	1

Participants stated that social studies courses based on applications including Web 2.0 tools had the most impact on them in terms of cooperation, creativity, communication, and the skills to use technology. At first, it may be thought that this finding contradicts the data obtained from the scale. However, the scale data indicated that students' communication and collaboration skills improved to a certain extent, although not significantly. Some participants also responded in this direction in the interviews. It was also thought that the positive responses could be a reflection of the students' positive attitudes towards the activities and the increase in their motivation.

Examples of Opinions:

Participant 1: Canva positively affected my creativity and Lumi affected communication with friends positively.

Participant 6: I can now prepare creative gifts for my mother by preparing brochures in Canva.

Participant 5: It improved my relationship with technology and I improved myself with applications.

3.2.5. Evaluations on Web 2.0 Tools

Students were asked for their opinions on the Web 2.0 tools that affected them the most. The findings obtained in this context are given in Table 6.

Table 6

Opinions on the Most Influential Web 2.0 Tools

Categories	Frequency (f)
Kahoot!	8
Canva	2
Lumi	0

Students frequently answered Kahoot! when asked which of the Web 2.0 tools influenced them. There were a few students who found the Canva application effective. Students found Kahoot! much more entertaining than the others in terms of making the course enjoyable, not having a long duration, having options, and being more exciting due to the ranking by indicating the score at the end of the game. Negative approaches to Lumi could be because despite the arrangements made, some problems experienced during these applications in terms of group organization, duration, and competition negatively affected student opinions.

Examples of Opinions:

Participant 6: Canva influenced me the most because I used my creativity on the internet. I found research and designs and used them.

Participant 10: Kahoot! Because we were having fun and solving questions at the same time. I was getting information in my free time at home.

Participant 3: I only liked Kahoot!, to be honest.

Participants were also asked whether there were different applications they would like to see in the activities. All of the students left this question unanswered and all of them stated that they did not know about any other application.

3.2.6. Continued Use of Web 2.0 Tools

The opinions of the participants on whether they wanted Web 2.0 tools to be used in their next courses were taken. All 10 students who participated in the interviews stated that they wanted Web 2.0 tools to be used in their next courses. It was seen that the participants based their justifications on issues such as making the course fun, increasing retention, and better understanding of the subject content. The comments of the participants on this issue showed the positive effect of Web 2.0 tools on the learning and teaching process.

Examples of Opinions:

Participant 3: I would like to… Because Web 2.0 applications make the courses more fun and more fluent. We repeat what we have learned.

Participant 6: Let's continue with these applications in the second semester because thanks to these applications, we study for exams beforehand.

Participant 10: Yes, I would like it, I would like it in other lessons as it is fun and informative.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

In this study, it was aimed to contribute to the development of students' 21st century skills through activities based on the use of Web 2.0 tools within the scope of the social studies course.

According to the results related to the first sub-problem of the research it was observed that the participants' critical thinking and problem solving; information, communication and technology literacy; creativity and innovation; entrepreneurship and self-management skills, which are evaluated within the 21st century skills, increased significantly after the practices. Social, responsibility and adaptation; collaboration; media literacy; and leadership skills increased in terms of arithmetic mean, although not at a significant level.

Various studies in the literature show that social studies is a course that is suitable for developing some of the sub-skills included in 21st century skills. Öztürk (2010) obtained positive results in terms of the development of creative thinking skills; Demir (2006), and Kurnaz and Sünbül (2007) obtained positive results in terms of the development of critical thinking skills in this course. According to Shepherd (1998), the social studies course is suitable for developing 21st century skills such as problem-solving and critical thinking through the use of different methods. These results were in line with the results of the current study. Hepburn (1999), and Stein and Prevet (2009) stated that this course is important in teaching media literacy skills to students. However, in the current study, different results were obtained in terms of this skill and this situation was attributed to the content of the activities applied.

In the literature, several studies have been found that reveal the positive effects of the use of technological tools on different student groups. For example, based on Web 2.0 applications with university students, Baki (2022) reported significant contributions to the development of digital literacy skills; Gündüzalp (2021) stated significant contributions to metacognitive thinking skills and creative thinking tendencies. Terrell et al. (2011), and Malinina (2016) found positive effects of Web 2.0 tools on communication and collaboration skills. Wanago (2013) stated in his study that Web 2.0 tools are important for sharing and collaboration. Pausé and McCarroll (2022) also revealed the positive role of Web 2.0 tools in collaboration and communication. The results of some studies in the literature that communication and collaboration skills increase with the use of Web 2.0 do not coincide with the results of the current study. However, it was thought that this may be related to the social dynamics of the participant group in the current study and the structure of the activities prepared.

Almalı and Yeşiltaş (2020), and Gencer and Gezer (2022) found that Web 2.0 tools; Tak and Demir (2019) found that software tools; Türel and Demirkaya (2020) found that Google Earth application; Aslan and Çakmak (2021) found that augmented reality applications increased achievement in social studies course. It can be said that there was a parallelism between the results of this study and the results of the studies in the literature in terms of the contribution of the use of technology-based methods and tools to achievement. In fact, during the interviews, the responses of the participants about the contribution of the applications to effective and permanent learning and success supported the results in the literature. When the interview data were analyzed, it was seen that the participants wanted Web 2.0 tools to be used in future courses for reasons such as making the course fun, better comprehension of the subjects, ensuring retention, and making the course enjoyable and understandable. It was revealed that students wanted to use Web 2.0 tools more for course purposes, they wanted to get to know different Web 2.0 tools and to do activities with these tools in other courses and their daily lives. Similarly, Iqbal and Kazmi (2023) found a positive and significant connection between the use of technology and student learning, motivation, and interest in social studies courses. In the study conducted by Ekici and Yeşilbursa (2021), students expressed augmented reality as interesting and fun. In the study conducted by Fahser-Herro and Steinkuehler (2012), it was stated that the application of Web 2.0 tools meets individual needs and increases literacy skills. Seyhan and Küçük (2021) found that

social studies teachers and prospective teachers found augmented reality applications innovative, flexible, effective, fun, and interesting. In the study of Kırımlı and Demirezen (2022), it was stated that social studies teachers found Web 2.0 tools to make the course attractive and to provide motivation.

In the current study, the data obtained from the interviews revealed that Web 2.0 tools have positive effects on concretizing abstract subjects and provide permanent learning. Similarly, in the study conducted by Yıldırım et al. (2022), social studies teachers said that Web 2.0 tools had a positive effect on concretizing subjects containing abstract concepts. In Yıldırım and Şimşek's research (2023), it was stated by social studies teachers that technological devices make the lesson concrete.

Recommendations;

- In the study, it was determined that the activities based on Web 2.0 tools had a positive effect on the development of various 21st century skills of students. In addition, the participants expressed overwhelmingly positive opinions about the applications. In this direction, to promote the use of Web 2.0 tools in social studies courses, it would be useful to encourage and support teachers to use them and to train those who need them.
- The benefit provided to the teaching process in research based on the action research design is an undeniable element. The research results point to gains in this sense. However, in the research, there was not enough progress in the development of some of the 21st century skills (social skills such as communication and collaboration). It was thought that this situation may be related to the structure and content of the activities to some extent. In this direction, the studies based on Web 2.0 tools would be developed in a way to support the development of these skills and applications would be examined with a critical perspective and an experimental process can provide original data to researchers.
- Among the Web 2.0 tools, Kahoot! and Canva were the most popular among the students, while any of them were not satisfied completely with Lumi. It was observed that this situation was related to the social dynamics of the current study group and the structure of the activities developed. In this direction, it was thought that it would be useful to consider the social relations between students and in-class dynamics in designing collaborative activities with Web 2.0 tools.
- A comparative analysis of the data obtained from studies that overlap with the objectives of the current study but will be conducted for different outcomes, at different grade levels, and with the use of different Web 2.0 tools can provide important data.

REFERENCES

Aksoy, H. H. (2003). Eğitim kurumlarında teknoloji kullanımı ve etkilerine ilişkin bir çözümleme. *Eğitim Bilim Toplum, 1*(4), 4-23.

Ananiadou, K. & M. Claro (2009). 21st century skills and competencies for new millennium learners in OECD countries. *OECD Education Working Papers, No.41*. https://doi.org/10.1787/218525261154.

Almalı, H. & Yeşiltaş, E. (2020). The effect of Web 2.0 technologies used teaching geography topics in social studies education on students' academic achievement and attitudes. *Turkish Scientific Research Journals, 5*(2), 165-182.

Aslan S, & Çakmak, Z. (2021). Reflection of augmented reality applications to social studies education. *Journal of History School, 14*(55), 4337-4358. http://dx.doi.org/10.29228/joh.54009

Baki, Y. (2022). The effect of Web 2.0 tools on the development of digital literacy skills and web pedagogical content knowledge. *Journal of Mother Tongue Education, 10*(3), 671-695. https://doi.org/10.16916/aded.1109642

Balcı, A. (2021). *Sosyal bilimlerde araştırma yöntem, teknik ve ilkeler.* Pegem Akademi Yayıncılık.

Bolick, C. M. (2002). Technology and the social studies. *The International Social Studies Forum, 2*(2), 183-185.

Boon, R., Burke, M., Fore, C., & Spencer, V. (2006). The impact of cognitive organizers and technology-based practices to promote student success in secondary social studies classrooms. *The Journal of Special Education Technology, 21*, 5–15. https://doi.org/10.1177/016264340602100101

Braun, J. A. (1999). Ten ways to integrate technology into middle school social studies. *The Clearing House, 72*(6), 345-351.

Büyüköztürk, Ş. (2017). *Sosyal bilimler için veri analizi el kitabı*. Pegem Akademi Yayıncılık.

Byrne, R. (2009). The effect of Web 2.0 on teaching and learning. *Teacher Librarian, 37*(2), 50-53.

Cansoy, R. (2018). 21st century skills according to international frameworks and building them within the education system. *Journal of the Human and Social Science Researches, 7*(4), 3112-3134. https://doi.org/10.15869/itobiad.494286

Dede, C. (2010). Comparing frameworks for 21st century skills. In J. Bellance, & R. Brandt (Eds.), *21st century skills: Rethinking how students learn* (pp. 51-76). Solution Tree Press.

Demir, M. K. (2006). The research of fourth and fifth grade primary school students' critical thinking levels in social studies lessons according to different variables. *Gazi University Journal of Gazi Educational Faculty, 26(3),* 155-170.

Doecke, E., & Maire, Q. (2019). Key skills for the 21st century: An evidence-based review. *Research Conference 2019-Preparing students for life in the 21st century: Identifying, developing and assessing what matters.* (pp.73-77). https://research.acer.edu.au/research_conference/RC2019/5august/8

Ekici, M., & Yeşilbursa, C. C. (2021). Secondary school students' opinions on the use of augmented reality in social studies course. *Journal of Social Sciences of Mus Alparslan University, 9*(2), 289-302. http://dx.doi.org/10.18506/anemon.676477

Ekiz, D. (2003). *Eğitimde araştırma yöntem ve metotlarına giriş*. Anı Yayıncılık.

Fahser-Herro, D., & Steinkuehler, C. (2009). Web 2.0 literacy and secondary teacher education. *Journal of Computing in Teacher Education, 26*(2), 55–62. https://doi.org/10.1080/10402454.2009.10784633

Frankel, J. & Wallen, N. (2008). *How to design and evaluate research in education (7th Ed.).* McGraw-Hill.

Gelen, İ. (2017). P21- 21st century skill frameworks in curriculum and instruction (USA practices) *Journal of Interdisciplinary Educational Research, 1*(2), 15-29.

Gencer, Ö. & Gezer, U. (2022). Investigation of the effect of social studies teaching based on web 2.0 tools on students' academic achievement. *Journal of Digital Technologies and Education, 1*(2), 83–91. https://doi.org/10.5281/zenodo.7487384

Gillham, B. (2000). *Case Study Research Methods.* Continuum.

Güllüpınar, F., Kuzu, A., Dursun, Ö. Ö, Kurt A. A. & Gültekin M. (2013). Integration of technology to national education and its results: The evaluation of Fatih project from the view of parents. *Süleyman Demirel University Faculty of Arts and Science Journal of Science, 30,* 195-216.

Gündüzalp, C. (2021). The effect of online learning enriched with Web 2.0 tools on students' metacognitive and creative thinking skills. *The International Journal of Turkish Literature, Culture and Education, 10*(3), 1158-1177. http://dx.doi.org/10.7884/teke.5318

Hepburn, M. A. (1999). Media literacy: A must for middle school social studies. *The Clearing House, 72*(6), 352-356.

Iqbal, A. & Kazmi, A. B. (2023). Impact of teaching social studies through modern technology. *Al-Qantara, 9*(4), 427-451. https://tinyurl.com/4fdw9x9b

Johnson, A. P. (2019). *Eylem Araştırması El Kitabı* (Trans. Y. Uzuner, & M. Özten Anay). Anı Yayıncılık.

Kalemkuş, F. & Bulut Özek, M. (2022). Comprehensive 21st century skills scale: Validity and reliability study. *Anadolu Journal of Educational Sciences International, 12*(2), 359-388. https://doi.org/10.18039/ajesi.899338

Karadağ, B. F. & Garip, S. (2021). Use of LearningApps as a Web 2.0 application in Turkish teaching. *Journal of Child, Literature and Language Education, 4*(1), 21-40. https://doi.org/10.47935/ceded.897374

Kaya, B. (2008). The using of technology in the social studies classroom. *Gazi University Journal of Gazi Educational Faculty, 28*(3), 189-205.

Kırımlı, H., & Demirezen, S. (2022). Social studies teachers' views on Web 2.0 technologies. *Mehmet Akif Ersoy University Journal of Education Faculty, 62,* 527-558. https://doi.org/10.21764/maeuefd.1024814

Kurnaz, A. & Sünbül, A.M. (2008). Effects of skill and content-based critical thinking training on students' achievement and self-evaluation in the fifth-grade course of social knowledge of primary school. *Selçuk University Journal of Ahmet Kelesoglu Education Faculty, 26*, 227-246.

Larson, L. C., & Miller, T. N. (2011). 21st century skills: Prepare students for the future. *Kappa Delta Pi Record, 47*(3), 121–123. https://doi.org/10.1080/00228958.2011.10516575

Malinina, I. (2016). Implementing Web 2.0 tools for collaborative work of learners studying English. *The New Educational Review, 43,* 104-114. https://doi.org/10.15804/tner.2016.43.1.08

Marshall, E. (n.d.). The statistics tutor's quick guide to commonly used statistical tests. https://www.statstutor.ac.uk/resources/uploaded/tutorsquickguidetostatistics.pdf

Mertler, C. A. (2012). *Action research: Improving schools and empowering educators (3rd ed.).* Thousand Oaks.

Miles M. B. & Huberman, A. M. (1994). *Qualitative data analysis.* Sage Publications.

Ministry of National Education (MNE) (2018). *Social Studies Curriculum (Primary and Secondary School Grades 4, 5, 6, and 7).* https://tinyurl.com/3ff4h92m

Ministry of National Education (MNE) (2024). *Türkiye yüzyılı maarif modeli öğretim programları ortak metni.* https://tymm.meb.gov.tr/ortak-metin

Mills, G. E. (2007). *Action research: A guide for the teacher researcher.* Merrill Prentice Hall.

Multon, K. D. (2010). Interrater reliability. In N. J Salkind (Ed.), *Encyclopedia of Research Design* (pp. 627-629). Sage Publications.

National Association for the Education of Young Children-Fred Rogers Center (NAEYC-FRC), (2012). *Technology and Interactive Media as Tools in Early Childhood Programs Serving Children from Birth through Age 8.* http://www.naeyc.org/files/naeyc/file/positions/PS_technology_WEB2.pdf

The Partnership for 21st Century Skills (P21) (2015). Framework for 21st Century Learning. https://www.marietta.edu/sites/default/files/documents/21st_century_skills_standards_book_2.pdf

Patton, M. Q. (2014). *Nitel araştırma ve değerlendirme yöntemleri* (Trans. M. Bütün & S.B. Demir). Pegem Akademi Yayıncılık.

Pausé, C. & McCarroll, E. M. (2022). Tumbling through tertiary education: An investigation of the use of tumblr within a child development course. *Interactive Learning Environments, 30* (1), 49-57. https://doi.org/10.1080/10494820.2019.1636072

Saavedra, A., & Opfer, V. (2012). *Teaching and learning 21st century skills: Lessons from the learning sciences. A Global Cities Education Network Report.* http://asiasociety.org/files/rand-0512report.pdf

Seyhan, A., & Küçük, S. (2021). Social studies teachers' and prospective teachers' experiences on developing educational augmented reality applications. *Journal of Higher Education and Science, 11*(1), 56-63. https://doi.org/10.5961/jhes.2021.428

Shepherd, N. G. (1998). *The Probe Method: A problem-based learning model's affect on critical thinking skills of fourth and fifth grade social studies students.* [Unpublished PhD Thesis]. North Carolina State University.

Stein, L. & Prewett, A. (2009). Media literacy education in the social studies: Teacher perceptions and curricular challenges. *Teacher Education Quarterly, 36*(1), 131-148.

Tak, İ. & Demir, M. (2019). The effect of using educational software during social studies courses on students' academic success: A case of Morpa Campus. *Turkish Scientific Researches Journal, 4* (2), 77-89.

Republic of Türkiye Ministry of National Education Board of Education (2017). *On Our Renewal and Amendment Studies in the Curriculum"*, https://ttkb.meb.gov.tr/meb_iys_dosyalar/2017_07/18160003_basin_aciklamasi-program.pdf

Tavşancıl, E. & Aslan, E. (2001). *Sözel, yazılı ve diğer materyaller için içerik analizi ve uygulama örnekleri.* Epsilon Yayınevi.

Terrell, J. Richardson, J. & Hamilton, M. (2011). Using Web 2.0 to teach Web 2.0: A case study in aligning teaching, learning and assessment with professional practice. *Australasian Journal of Educational Technology, 27* (5), 846-862. https://doi.org/10.14742/ajet.935

Tuğluk, M. N. & Özkan, B. (2019). Analysis of MoNE 2013 preschool education program in terms of 21st century skills. *Primary Education, 1*(4), 29-38.

Türel, A., & Demirkaya, H. (2020). The effects of Google Earth on social studies course achievement and attitudes. *International Journal of Social and Educational Sciences, 7*(14), 195-207. https://doi.org/10.20860/ijoses.799790

Walser, N. (2008). Teaching 21st Century Skills: What does it look like in practice? Harvard Education Letter. Harvard Education Publishing Group. https://www.siprep.org/uploaded/ProfessionalDevelopment/Readings/21stCenturySkills.pdf.

Wanago, N. (2013). Effective Web 2.0 tools for your classroom. *Techniques: Connecting Education and Careers (J3), 88* (1), 18-21.

Yıldırım, A. & Şimşek, H. (2011). *Sosyal bilimlerde nitel araştırma yöntemleri* (8. Baskı). Seçkin Yayıncılık.

Yıldırım, M. & Şimşek, U. (2023). Sosyal bilgiler öğretmenlerinin derslerinde teknoloji kullanma durumları. *International Journal of New Approaches in Social Studies, 7*(1), 64-83. https://doi.org/10.38015/sbyy.1243244

Yıldırım, Ö., Tanrıkulu, C., & Ablak, S. (2022). Opinions of social studies teachers about the use of Web 2.0 tools in distance education process. *Cumhuriyet International Journal of Education, 11*(4), 817-829. https://doi.org/10.30703/cije.1165807

GENİŞLETİLMİŞ ÖZET

Giriş

İçinde bulunduğumuz çağda teknoloji her alanda giderek vazgeçilmez hale gelmektedir. Bu doğrultuda teknoloji destekli öğretim de eğitim sistemleri için kaçınılmaz bir gereklilik olmuştur. Eğitimde teknoloji kullanımının en önemli avantajlarından biri öğrencilerin modern çağın gerektirdiği becerilere sahip olabilmeleri açısından sağladığı katkılardır. Bu becerilere sahip bireylerin yetiştirilmesi eğitimdeki güncel yaklaşımların da temelini oluşturmaktadır. Uluslararası birçok araştırma, rapor ve incelemede 21. yüzyılda yaşayan bireylerin iş hayatında ve yaşamlarını sürdürebilmeleri için sahip olmaları gereken becerilerin öneminden bahsedilmektedir. Bu yüzyılın bilgi toplumunda bireylerin iyi vatandaşlar ve nitelikli iş görenler olmalarını sağlayan bu özellikler 21. yüzyıl becerileri olarak ifade edilmektedir (Cansoy, 2018).

Hem yapılandırmacı yaklaşımın gereği hem de çok disiplinli yapısının getirisi olarak sosyal bilgiler dersi öğrencilerin çeşitli 21. yüzyıl becerilerini geliştirmeye uygun bir alt yapıyı barındırmaktadır. Zira sosyal bilgiler öğretim programında bahsi geçen ve kazandırılması hedeflenen birçok beceri 21. yüzyıl becerileri ile örtüşmektedir. Bununla birlikte öğretimde teknoloji kullanımının beceri gelişimine katkısına dair araştırmalardan (Baki, 2022; Gündüzalp, 2021; Malinina, 2016; Terrell vd., 2011) hareketle sosyal bilgiler dersi kapsamında teknoloji kullanımının önemli bir potansiyel taşıdığı söylenebilir.

Web 2.0 uygulamaları Web kullanıcıları arasında çevrim-içi işbirliğinin ve paylaşımının yapılmasına imkân sağlayan bir web teknolojisi servisidir. Web 2.0 araçlarının bilgi yeniliğine odaklanması, bilgiye daha hızlı ve kolay erişim sağlaması, maliyeti düşürmesi, dijital içerik barındırması, kullanıcıların kimliğini doğrulayarak kaynaklara erişimi kontrol etme imkânı vermesi gibi avantajları (Akt. Karadağ & Garip, 2021) eğitim sürecinde kullanılabilmektedir.

Bu araştırma eğitimde teknoloji kullanımının beceri gelişimine sağladığı katkılardan hareketle, sosyal bilgiler dersinde Web 2.0 araçlarının kullanımıyla 21. yüzyıl becerilerinin geliştirilebileceği fikrine dayalı olarak oluşturulmuştur. Araştırmanın problemi "Sosyal Bilgiler

dersinde teknoloji kullanımı yoluyla 21. yüzyıl becerilerinin geliştirilmesi mümkün müdür?" şeklinde ifade edilmiştir.

Araştırma sürecinde ele alınan alt problemler ise şöyledir:

- Sosyal bilgiler dersinde Web 2.0 araçlarıyla oluşturulmuş öğretim etkinliklerinin öğrencilerin 21. yüzyıl becerilerinin gelişimine etkisi nasıldır?
- Öğrencilerin sosyal bilgiler dersinde Web 2.0 araçlarının kullanımı yoluyla gerçekleştirilen etkinlikler konusundaki algıları nasıldır?

Yöntem

Araştırma sosyal bilgiler öğretiminde 21. yüzyıl becerilerinin gelişimini destekleyerek bu doğrultuda eğitim-öğretim süreçlerinde gelişme ve iyileşmenin amaçlanması nedeniyle eylem araştırması desenine dayanmaktadır. Belirlenen okulun 7A şubesinde öğrenim görmekte olan 22 öğrenci araştırmanın çalışma grubunu oluşturmaktadır. Çalışma grubunun 21. yüzyıl becerileri açısından akademik ve sosyal gelişim düzeyleri (gelişime açık olması) temel ölçüt olarak alınmıştır. Böylece ölçüt olarak uygulamanın gerçekleştirileceği katılımcılar açısından iyileştirilmesi gerekli bir durumun varlığından emin olunmuş ve araştırmanın amacına uygun düşen bir çalışma grubu belirlenmiştir.

Eylem araştırmasında araştırmanın temel sorusunun yanıtlanabilmesi için nitel ve de nicel veri toplama araçlarını kullanmak mümkündür (Frankel & Wallen, 2008; Mertler, 2012; Mills, 2007). Bu doğrultuda araştırmada 21. yüzyıl becerileri ve bu becerilerdeki gelişim durumu Kalemkuş ve Bulut Özek (2022) tarafından hazırlanan ‘’Kapsamlı 21. Yüzyıl Becerileri Ölçeği' ile ölçülmüştür. Ayrıca araştırmanın nitel boyutu kapsamında katılımcılardan yapılan çalışmaların etkililiğine dair derinlemesine veri elde etmek amacıyla yüz yüze görüşmeler gerçekleştirilmiştir.

Araştırmada öncelikle uygulama yapılacak öğrenme alanı ve kazanımlar (güncel programa göre öğrenme çıktıları) belirlenmiş ardından Kahoot!, Canva ve Lumi araçlarına dayalı etkinlikler geliştirilmiştir. Daha sonra öğrencilere Kapsamlı 21. Yüzyıl Becerileri Ölçeği ön-test olarak uygulanmış ve 2022-2023 güz döneminde etkinlik uygulamaları gerçekleştirilmiştir. Web 2.0 araçlarıyla oluşturulmuş etkinliklerin tamamı bittikten sonra ölçek son-test olarak yeniden uygulanmış, ardından öğrencilerle görüşmeler yapılmıştır. Son olarak bahsedilen nitel ve nicel veri toplama araçlarıyla ulaşılan veriler analiz edilmiştir.

Araştırmada ölçek kullanılarak elde edilen nicel verilerin analizinde Python kütüphaneleri kullanılmıştır. Katılımcıların 21. yüzyıl becerilerinin uygulamaların öncesinden sonrasına ne tür bir değişim gösterdiğini tespit etmek amacıyla bağımlı örneklemler t-testi yapılmıştır. Araştırmanın ikinci alt problemi doğrultusunda öğrencilerin Web 2.0 araçlarıyla oluşturulmuş öğretim etkinliklerine yönelik görüşleri görüşmeler yoluyla alınmış, veriler içerik analizi yöntemiyle analiz edilmiştir.

Sonuç ve Öneriler

Araştırmada katılımcıların uygulamalar sonrasında 21. yüzyıl becerileri içinde değerlendirilen eleştirel düşünme ve problem çözme; bilgi, iletişim ve teknoloji okuryazarlığı; yaratıcılık ve yenilikçilik; girişimcilik ve özyönetim becerilerinin anlamlı düzeyde arttığı görülmüştür. Sosyal sorumluluk ve uyum; iş birliği; medya okuryazarlığı; iletişim; liderlik becerilerinin ise anlamlı düzeyde artmadığı ancak aritmetik ortalama bağlamında bakıldığında tümünde belli düzeyde artış olduğu görülmüştür.

Literatürde sosyal bilgiler eğitiminde Web 2.0 araçlarının kullanımının 21. yüzyıl becerilerine etkisini ölçen herhangi bir çalışma bulunmamaktadır. Ancak çeşitli araştırmalar sosyal bilgiler dersinin 21. yüzyıl becerileri içinde yer alan bazı becerileri geliştirmeye elverişli

bir ders olduğunu ve teknoloji kullanımının derse olumlu katkıları olduğunu göstermektedir. Bu açıdan bu çalışmaların sonuçları mevcut araştırma sonuçlarıyla örtüşmektedir. Katılımcıların yapılan çalışmalara dair görüşlerinin ise beceri gelişimine katkısı, öğrenilenlerin kalıcılığı ve derslerin daha eğlenceli olması açısından olumlu olduğu tespit edilmiştir.

Araştırmadan elde edilen sonuçlar doğrultusunda sosyal bilgiler derslerinde Web 2.0 araçlarının kullanımının yaygınlaştırılmasına yönelik olarak öğretmenlerin Web 2.0 araçlarının kullanımına teşvik edilerek desteklenmesi, ihtiyaç duyan öğretmenlerin konu hakkında eğitilmesi önerilmiştir. Araştırma deneyimlerinden hareketle Web 2.0 araçlarının özellikle (mecut araştırmada yeterince gelişme sağlanamayan) belli becerilerin gelişimini destekleyecek biçimde geliştirildiği ve deneysel bir süreçle incelendiği çalışmaların araştırmacılara özgün veriler sunabileceği düşünülmektedir. Bununla birlikte Web 2.0 araçları ile yapılacak işbirlikli etkinliklerin tasarlanmasında öğrenciler arası sosyal ilişkilerin ve sınıf içi dinamiklerin gözetilmesinin yararlı olacağı düşünülmektedir. Mevcut araştırmanın amaçlarıyla örtüşen ancak farklı kazanımlara yönelik olarak, farklı sınıf seviyeleri ve Web 2.0 araçlarının kullanımıyla gerçekleştirilecek araştırmalardan elde edilen verilerin mevcut çalışma verileri ile karşılaştırmalı biçimde incelenmesi önemli veriler sunabilir.