18. What do Turkish primary teachers think about integration of Web 2.0 literacy tools in primary schools during covid 19?

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Abstract

This study aims to understand the Turkish primary teachers' use of Web 2.0 tools when teaching literacy in the Turkish language. The data were collected from 33 teachers teaching in public and private primary schools across Turkey. Teachers were selected using a criterion sampling method and interviewed using a semi-structured interview form and their responses were analyzed using content analysis. Research results show that Web 2.0 tools are useful in terms of increasing students' motivation towards lessons and ensuring active learning to occur. The opinions expressed by the participants have revealed that Web 2.0 tools are used for evaluation, reinforcement, revision and teaching grammar subjects and that many of them prefer to use Web 2.0 tools after explaining the subject. While the participating teachers mentioned the concretization of concepts and subjects through digitalization for primary school students and increasing classroom interaction in the category of contributions to educational processes while the problems experienced in the use of these tools were expressed to be the absence of Turkish language option in these tools and difficulty in having access to these tools. In addition, teachers' inadequacies in using Web 2.0 tools were also expressed as a problem. As solutions to the problems experienced, they stated that the language barrier problem can be overcome by using alternative Web2.0 tools, that the use of Web 2.0 can be made more widespread among teachers through in-service trainings and works can be conducted by the Ministry of National Education of Turkey to provide better opportunities for teachers to have access to technology and internet. In light of the findings of the study, concrete suggestions were made to teachers on how to use these tools in language teaching and suggestions were made to the software developers to design these tools in different languages.

Keywords: digital device, mother tongue education, Web 2.0 Tools, primary teachers, learning and teaching process.

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Öz

Bu araştırmanın amacı, sınıf öğretmenlerinin ilk okuma yazma ve Türkçe öğretiminde Web 2.0 araçlarını kullanımlarına ilişkin deneyimlerini incelemektir. Bu amaç doğrultusunda araştırmada

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nitel araştırma desenlerinden biri olan keşfetmeye dayalı durum çalışması deseni kullanılmıştır. Araştırmanın çalışma grubunu resmi ve özel ilkokullarda görev yapmakta olan 33 sınıf öğretmeni oluşturmaktadır. Öğretmenler ölçüt örnekleme yöntemi kullanılarak seçilmiş, yarı yapılandırılmış görüşme formu kullanılarak görüşmeler gerçekleştirilmiş ve cevaplar içerik analizi kullanılarak analiz edilmiştir. Araştırma sonucunda Web 2.0 araçlarının öğrencilerin derslere karşı motivasyonlarını arttırmada ve aktif öğrenmeyi sağlamada yararlı bir araç olduğu tespit edilmiştir. Katılımcıların ifade ettikleri görüşler, Web 2.0 araçlarının değerlendirme, pekiştirme, tekrar ve dilbilgisi konularının öğretiminde kullanıldığını ve birçoğunun konuyu anlattıktan sonra Web 2.0 araçlarını kullanmayı tercih ettiğini ortaya koymuştur. Katılımcı öğretmenler, eğitim süreçlerine katkılar kategorisinde ilkokul öğrencilerinin dijitalleşme yoluyla kavram ve konuların somutlaştırılması ve sınıf içi etkileşimin artırılmasından bahsederken, bu araçların kullanımında yaşanan sorunları Türkçe dil seçeneğinin olmaması, bu araçlar ve bu araçlara erişimde zorluk olarak ifade etmişlerdir. Ayrıca öğretmenlerin Web 2.0 araçlarını kullanma konusundaki yetersizlikleri de sorun olarak ifade edilmiştir. Yaşanan sorunlara çözüm olarak alternatif Web2.0 araçları kullanılarak dil engeli sorununun aşılabileceği, Web 2.0 kullanımının hizmet içi eğitimlerle öğretmenler arasında yaygınlaştırılabileceği ve idare tarafından çalışmalar yapılabileceğini belirtmişlerdir. Türkiye Milli Eğitim Bakanlığı, öğretmenlerin teknoloji ve internet erişimleri için gerekli altyapı çalışmaları yapabilir. Çalışmanın bulguları ışığında öğretmenlere bu araçların dil öğretiminde nasıl kullanılacağına dair somut önerilerde bulunulmuş ve yazılımcılara bu araçların farklı dillerde tasarlanması için önerilerde sunulmuştur.

Anahtar kelimeler: dijital araç, ana dil öğretimi, Web 2.0 araçları, sınıf öğretmenleri, öğrenme ve öğretme süreci.

1.Introduction

The emergence of the Covid-19 pandemic has increased the interest in web-based learning in the field of education. However, it has given rise to some questions about how web-based learning tools should be used by teachers and learners, which problems can be encountered, what their solutions are and what benefits are offered by these tools. Some recent research sheds light on these questions. According to Hassan, BaraU Gamji, Yahaya Nasidi, and Latiff Azmi (2021), during the Covid-19 pandemic, students have difficulties in technical issues such as insufficient internet connection, inability to upload large files and loss of passwords; on the other hand, web-based technologies are highly useful for students in terms of cooperative learning, independent learning, flexible learning and technology learning. Zhang (2022), on the other hand, examined nine different studies conducted since the Covid-19 pandemic and determined that the use of web 2.0 tools in the teaching and learning process positively affects resource sharing, cooperation, networking, participation and interaction among students. In particular, it is stated that these tools improve student-teacher communication and are effective in students' learning during the pandemic. However, it is emphasized that social interaction decreases among students during this period, and problems such as distress, anxiety and depression arise due to prevailing conditions of uncertainty. Another important issue that clearly manifests itself in this period is the digital divide. The digital divide is generally defined as the gap between those who have access to technology and those who don't. The state has a great responsibility in filling this gap, reducing inequality and minimizing the problems that students will encounter (Hueseo, 2020). In solving this problem, the policies to be implemented by the state and the pedagogical approaches that educators will use in the context of technology integration will be effective.

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The idea of minimizing the problems that arise in the integration of web 2.0 tools, the usage rate of which has increased with the pandemic, into the educational-instructional processes and of providing more benefits has accelerated the adoption of different learning approaches by educators. One of these approaches is blended learning. Blended learning is a new teaching style that combines traditional and modern learning models, where digital teaching methods do not completely replace traditional teachers' methods of interacting and teaching students. Blended learning is a new teaching style that combines traditional and modern learning models and where digital teaching methods do not completely replace teachers' traditional methods of interacting with and teaching students (Adel & Dayan, 2021). Blended learning is expressed as a scenario where face-to-face education is combined with online opportunities and online materials are presented in a traditional classroom atmosphere (Thompson et al., 2019). Such approaches play an important role in integrating Web 2.0 tools into educational processes and minimizing potential problems that may arise. For this reason, researchers present models based on these approaches (Adel & Dayan, 2021).

Given the delineations above, in the introductory part of the study, the effects of the Covid-19 pandemic on the education-teaching processes, the results of some current research and one of the approaches adopted based on these are discussed. Then, the theoretical background and the significance of the study are explained on the basis of the review of the literature on what Web 2.0 tools are, their uses and benefits and the uses of technology and security issues. Afterwards, the model of the study, the study group, the path followed in the research process, the data collection tools and analyses are explained in detail.

1.1. Theoretical background

Web 2.0 was first used by O'Reilly in 2004 and soon replaced Web 1.0. Although the name was introduced by O'Reilly in 2004, the seeds of these tools were sown in Tim Berners-Lee's prototype web software in 1980 (Franklin, 2007). Web 2.0, which has become widespread since the early 2000s, has brought different dimensions to education, economy and scientific projects. Web 2.0's features such as content development, collaboration, and exchange of information or ideas among users have been effective in its integration into education because it is thought that many educational goals can be achieved through these features (Elmas & Geban, 2012; Thompson, 2007). The Web 2.0 tools provide educators with great opportunities and have a positive impact on teaching and learning. The effect overlaps especially with the social constructivist theory of learning (Conole & Alevizou, 2010; Lu, Lai, & Law, 2010). The social constructivist learning theory stresses that students should be given cognitive support (Roblyer & Doering, 2014). Thus, Web 2.0 tools provide support and they also enable users to create content, manipulate and supervise the content, and socialize (Horzum, 2007). The participants in Avcı and Atik (2020) study which aimed to determine pre-school and primary school teachers' metaphoric perceptions of using Web 2.0 tools in education and instruction, likened the use of Web 2.0 tools to "a magic stick" and they said that the tools could change their perspectives; they likened using the tools to "a game" by considering shy students and they also likened it to "cologne" and "a friend" by thinking that the tools could increase retention. In addition to the reported metaphoric perceptions, the educational use of the tools is also beneficial in terms of efficiency, motivation, learning, and learning to learn (Byrne, 2009). As a technological innovation, web 2.0 tools are useful in educational institutions in that they allow teachers and students to develop themselves and thus allow the creation of blended learning environments (Bonk & Graham, 2012). Blended learning was cited as one of the top 10 trends in the knowledge delivery industry by the Education and Development Society of America in 2003 (Bonk

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& Graham, 2012). The importance of blended learning environments built on Web 2.0 tools is increasing and it is thought that it will be more dominant in the future.

1.2.What are Web 2 tools?

Web 2.0 tools are one of the innovative new generation educational technologies which were created to enhance efficiency in learning and teaching and have improved with new updates. These user-friendly tools support students' interaction, collaboration and easy access to content-related information (Ajjan & Hartshorne, 2008; Altun, 2008; Brown, 2009; Velagapudi, 2017). Web 2.0 tools are second-generation online collaborative tools (Collis & Moonen, 2008), which are thought to be very crucial for the education of future (Bower, Hedberg, & Kuswara, 2010) because they can be used in preparing online books, creating animations, developing mind/concept maps, preparing digital panels, word clouds, creating posters, infographics, presentation instruments, developing augmented reality applications, file sharing services, encoding and measurement and evaluation.

1.3.The educational use of Web 2.0 Tools

Using Web 2.0 tools supports students' active engagement and helps teachers to design more active learning classes. Additionally, use of Web 2.0 tools helps teachers in measuring and evaluating students' performance and provides more visuals for students so that they can learn more easily and effectively (Byrne, 2009; Elmas & Geban, 2012). In relation to the benefits of Web 2.0 tools in the context of teaching, it may be said that teachers' use of learning designs that they prepare by using these tools will have significant consequences. Therefore, it is important that all the teachers, primary school teachers, in particular, should be trained in a manner that they can use Web 2.0 tools actively in their classes (Blannin, 2015; Jimoyiannis, Tsiotakis, Roussinos, & Siorenta, 2013).

1.4.Benefits of Web 2.0 Tools

Using digital technologies in classes actively promotes students' interest, contributes to the development of positive attitudes towards a course and increases student participation. It may be stated that the students who are allowed to interact with these tools are more active and remain attentive, that they can become technology literate over time (Punie & Cabrera, 2006). These tools support students who have different learning styles (Prashnig, 2006) and they also make it possible for students to reach the source of knowledge and to learn deeply (O'reilly, 2007). Furthermore, with these tools, more senses of students can be involved in the learning process, students can better develop cognitively (Prensky, 2009) and collaborative and group work can be promoted, leading to students' socialization and benefiting from each other's experiences (Conole & Alevizou, 2010; Lu et al., 2010). They allow students to create content and to manipulate the content and thus develop students' self-confidence (Conole & Alevizou, 2010). Web 2.0 tools offer students environments that support learning and secure active participation and encourage collaboration (Huang, Jeng, & Huang, 2009). On the basis of Web 2.0 tools, technology can be better integrated into education and thus the borders of the classical education system can be expanded. But, to do so, additional hardware and software are required, which can make technology-based education an expensive investment. It will be more costly to make such investments especially in countries like Turkey where there is a large and young population. Kaur, Bhatia, and Stea (2022) emphasized that cost-effective classroom approaches that share hardware resources and limit the requirements of technology should be developed. Parallel to this, they underlined the need to train teachers to use appropriate pedagogical methods. They suggested that students' online learning should

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be combined with gamification theory, an intelligent academic recommendation system should be created to improve students' performance and various software programs should be designed to evaluate the quality of education.

The safe use of digital tools is as important as the use of technological tools in educational and instructional processes, the practicality they provide and the pedagogical approaches employed in the integration process because easy access to these tools does not always mean that these tools can be reliable. Adel (2020) stated that problems such as authentication, privacy, network management, latency and lack of expertise might be encountered in the use of these tools. For example, the author argues that since technology is constantly developing, it is difficult for those working in this field to achieve full expertise in the relevant subject and therefore it becomes difficult to train teachers and other employees in educational institutions on the use of technology. In order to overcome the problems he stated, he suggests that while developing systems, it is necessary to focus on system latency and reliability, to reduce the time consumed by the system by planning the development process well, and to develop a real-time response system that can support education systems.

1.5. Literature review

When the literature on the use of Web 2.0 tools in education and training is examined, it is seen that there are studies on different disciplines and research areas showing that Web 2.0 tools increase success, provide an interactive educational environment, support mental skills, have a communicative structure and offer various opportunities compared to traditional textbooks (Ahmed & Opoku, 2022; Akcay & Arslan, 2010; Bamoallem & Altarteer, 2022; Çaka, Doğan Barut, & Şahin, 2015; Çetin, Çalışkan, & Menzi, 2013; Genç, 2010; Gulbahar, Kalelioglu, & Madran, 2010; Gün, 2015; A. Korucu, 2015; A. T. Korucu & Sezer, 2016; Kovacic, Bubas, & Coric, 2012; Krouska, Troussas, & Sgouropoulou, 2022; Kutlu Demir, 2018; Laire, Casteleyn, & Mottart, 2012; Magnuson, 2013; Ng, Ng, & Chu, 2022; Sarsar, Başbay, & Başbay, 2015; Turhan & Bayram, 2017; Virkus & Bamigbola, 2013); increase students' desire to read and write, allow them to have fun while learning and develop positive attitudes (Aytan & Basal, 2015; Baltaci-Goktalay & Ozdilek, 2010; Bolatli & Korucu, 2018; Çetin et al., 2013; Yükseltürk, Altıok, & Üçgül, 2017); foster students' active participation, their interest and motivation and positively affect their perceptions (Aytan & Basal, 2015; Baltaci-Goktalay & Ozdilek, 2010; Bolatli & Korucu, 2018; A. Korucu, 2015; Yükseltürk et al., 2017).

1.6. Significance of the Study

The sudden transition to distance education with the start of the Covid 19 pandemic obliged teachers to adapt themselves to integrate technology into their teaching. In this connection, the use of Web 2.0 tools seemed to be a great opportunity as they enabled both teachers and students to easily teach and learn subjects over the internet. Web 2.0 tools are pedagogically valuable tools because they are user-friendly, increase motivation and enrich the learning-teaching process in distance education. For this reason, it is important to reach teachers who were able to use these tools effectively in a short time and to describe their experiences in the language teaching process in order to expand the educational use of these tools. Web 2.0 tools offer vast experiences, especially for primary school students, while learning their mother tongue, by enabling them to participate in the lesson through both concretization and gamification. However, no studies concerning teaching primary literacy and Turkish in primary schools were found although the studies on different disciplines and areas of study in relation to Web 2.0 tools were available in the relevant literature.

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1.7.Purpose of the Study

This current study aims to analyze primary school teachers' experiences of using Web 2.0 tools in teaching primary literacy and Turkish. Thus, conducting the study with the study group that used the tools effectively is believed to provide the researchers with a wealth of samples to describe the current situation. Besides, the fact that experiences will be determined in line with the purpose of the study and that recommendations for using Web 2.0 tools in teaching primary literacy and Turkish will be made increases the significance of this study. The question motivating this study is:

In teaching primary literacy and Turkish,

- At what stages of learning-teaching process do primary school teachers use the tools and what experiences do they have in relation to the need to use them?

- What experiences do they have in relation to the contributions of the educational use of the tools to students?

- What experiences do they have in relation to the problems they encounter in using the tools?

- What experiences do they have in relation to recommendations for solutions to the problems?

2.Method

In this section, the model of the research, the study group, the data collection process, the data collection tools and the analysis of the data are included.

2.1.Research design

In order to examine what Turkish primary teachers think about their use of Web 2.0 tools for teaching literacy, a descriptive case study design was employed. A case study is an approach in which one or more than one situation is analysed in depth (Creswell, 2016). A descriptive case study presents a complete description of a phenomenon within its context (Bassey, 1999). The research problem was formulated based on a descriptive case study and a data collection tool in which interview questions were included was decided on because of the belief that the literature concerning experiences in using Web 2.0 tools was lacking.

2.2.Participants

Thirty-three Turkish primary teachers participated in this study. A criterion sampling method was used to select these participants (Patton, 2014). Inclusion and exclusion criteria are used to describe the characteristics of participants in a study (Connelly, 2020). It is very important to define these criteria in the selection of participants in a highly qualified research design (Patino & Ferreira, 2018). Based on our prior review of the literature, we reasoned that these criteria would provide a sufficient set of cases for collecting self-report data about teachers' use of Web 2.0 tools. Table 1 shows the inclusion and exclusion criteria used in the selection of the participants and characteristics of the participants.

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Table 1. Data of participants inclusion and exclusion criteria

Inclusion Criteria	Variables		n	Exclusion Criteria
Being a certified Turkish teacher Being a current primary teacher (grades 1-4) Teaching at a public or private primary school Participating in a study group that examines the use of Web 2.0 tools Using at least one Web 2.0 tool in their teaching	Gender	Female	32	Working at a school having no internet connection Not knowing how to use Web 2.0 tools Not being a primary teacher
		Male	1	
	Education	Undergraduate	28	
		Graduate	5	
	Experience	1-5 years	7	
		6-10 years	9	
		11-15 years	14	
		16-20 years	2	
		21+ years	1	
	School	Public	28	
		Private	5	
	Grade	1st grade	9	
		2nd grade	8	
		3rd grade	9	
		4th grade	7	

2.3.Instrument

The semi-structured interview form was used during the interviews. The interview form included both closed- and open-ended questions that were informed by our (a) review of the literature and (b) experience with the Turkish educational context. From the review we identified seven sub-factors that were salient to teachers' use of Web 2.0 tools, and from our experience we tailored the sub-factors to the Turkish educational context. Using the tailored sub-factors, then, we crafted interview questions that prompted participants to focus on the features of their use of Web 2.0 tools (Creswell, 2016). Two researchers piloted these questions with teachers comparable to those in our sample, making minor word-level revisions so that the questions could elicit relevant responses. Table 2 lists the seven interview questions and related sub-factors.

Table 2. Interview questions and related sub-factors

Interview questions	Sub-factors
Uses	
Question 1: Explain what web 2.0 tools do you use in teaching Turkish and elementary literacy and how to use them. Probe 1: Give an example for the situation you have described in question 3.	*Experiences about at what stages of the learning-teaching process they use the tools and how they use them and about the need to use them.*

Advantages

Question 2: What advantages do web 2.0 tools in the face-to-face and online classes offer to students and the teaching process?

Probe 2: Explain in detail why and how you use web 2.0 tools in your classes.

Experiences about at what stages of the learning process they use the tools and about the need to use them.

Benefits

Question 3: Explain the benefits of using Web 2.0 tools in teaching Turkish and elementary literacy.

Probe 3: What benefits do Web 2.0 tools offer in language teaching?

Experiences about the contributions of educational use to students.

Reasons

Question 4: Explain with your reasons at what stages of teaching Turkish and elementary literacy you use Web 2.0 tools.

Probe 4: Give an example for the situation you have described in question 4.

Experiences about at what stages of the learning-teaching process they use the tools and how they use them and about the need to use them.

Recommendations

Question 5: What web 2.0 tools do you recommend to use in teaching Turkish and elementary literacy?

Probe 5: Explain your recommendation with your reasons.

Experiences about at what stages of the learning-teaching process they use the tools and how they use them and about the need to use them.

Problems

Question 6: Have you encountered any problems in using web 2.0 tools in teaching Turkish and elementary literacy?

Probe 6: If you have encountered, explain the problems and the reasons for the problems.

Experiences about the problems they have encountered in using the tools.

Solutions

Question 7: What recommendations do you have for solutions to the problems you have encountered in using the web 2.0 tools?

Probe 7: Exemplify your recommendation in question 7.

Experiences about the recommendations for solutions to the problems.

2.4. Data collection

Interviews are conducted to understand situations especially to get people's perspectives that cannot be observed directly (Patton, 2014). In this study, individual interviews were conducted using a semi-structured interview form. Interviews were held online (zoom) because of risk factors associated with COVID-19. All 33 teachers were invited to participate records. First of all, the purpose of the study was explained to the participants at the beginning of the interviews. Screenshots of the interview records and transcribed documents of the interviews are presented in Appendix. Then, one-on-one interviews were

held with the participants. The researchers conducted the interviews. The interviews were recorded on zoom and on average it took the participants 40 minutes to respond the seven questions. Later, these records were deciphered and written down by the researcher and the data obtained from the study were arranged according to the sub-problems of the research.

2.5.Validity and reliability

The codes found as a result of data analysis were divided into relevant categories and themes. The codes were checked by three researchers two of whom were experts in primary literacy and Turkish and one of whom was an expert in measurement and evaluation and were given the final shape. Then, the participants were asked to read the findings and interpretations sections, and their confirmation was received that the analysis was reviewed and participants' confirmation was secured and persuasiveness was strengthened. Purposeful sampling was used to secure transferability, and the study was examined by three experts for consistency. In addition to that, the participants' confirmation was received and confirmability was secured.

2.6.Data analysis

Although coding and analysis is not the same thing, coding is an important part of analysis. Qualitative data analysis is not a separate procedure carried out in the last step of the research. The data obtained through interviews in the current study were first transcribed and cross-coded by two researchers. No qualitative data analysis program was used in this study. The researcher creates the codes and categories himself/herself and decides what to take and blend. Even if the researcher is not involved in a formal analysis of the data at the initial stages of research, s/he might be thinking how to make sense of them and what codes, categories or themes could be used to explain the phenomena. Previously, researchers tackled the laborious task of coding manually (Basit, 2003). A directed approach to content analysis was used for analysing the written data (Hsieh & Shannon, 2005). Findings from previous research guided our initial analysis of the data (Krippendorff, 2018). As the need for new codes and categories emerged, we expanded the analysis. Finally, based on the guided and emergent forms of analysis, we identified general patterns for each sub-question (Creswell, 2016).

3.Findings

This section presents the findings obtained from data analysis. The findings are presented in three themes labelled as the learning-teaching process, the educational use of Web 2.0 tools, and problems and recommendations for solutions. The codes and categories distinguished the theme of the learning and teaching process in the use of Web 2.0 tools in teaching initial literacy and Turkish.

Theme 1. The learning and teaching process

Table 3. The use of web 2.0 tools in the learning and teaching process

Categories	*Advantages*	*How they are used*	*Why they are used*
Codes	They ensure that students are more active, that they learn by having fun, and that they face various examples in a shorter time. (n=25)	Benefiting from the property of gamification tools for reinforcement, homework, and measurement-evaluation purposes (n=23)	For active learning, concretization, and gamification (n=4)
	They motivate online education. (n=13)	Using them at the attention calling, presentation, and assessment stages of lessons (n=12)	For E -Twinning projects (n=1)
	They include technology in classes and help to attract students' attention. (n=12)	Preparing materials, activities, and posters suitable to teachers' own classes (n=5)	
	They enable students to exhibit their products and they reveal students' creativity. (n=2)	Sometimes screen sharing by sending links in the conversation section (n=3)	
	Time-saving, easy access, and repetition (n=4)	Making students notice their mistakes and incomplete learning if there are any (n=2)	
	Possibility to measure more than one skill with one instrument (n=1)	Using them through a smart board (n=1)	
	Easy classroom management with web 2.0 tools- through which classrooms can be created (n=1)	Using them on mobile phones after face-to-face teaching (n=1)	

It is clear from Table 3 that the most remarkable code in the category of the advantages of using Web 2.0 tools in the learning and teaching process is the code "they ensure that students are more active, that they learn by having fun and that they face various examples in a short time (n=25)". Besides, the codes related to technology "they motivate online education (n=13)" and "they include technology in classes and help to attract students' attention (n=12) demonstrate the advantages of Web 2.0 tools in increasing students' motivation while teaching primary literacy and Turkish. As to the category of how Web 2.0 technologies are used, the interpretation for the code of "benefiting from the property of gamification tools for reinforcement, homework and measurement-evaluation purposes (n=23)" may be that many teachers use the tools at the stages following lesson presentation; but the code of "using them at the attention calling, presentation and assessment stages of lessons (n=12)" indicates that there are also teachers who use the tools at every stage of lessons. The codes labelled as "for active learning, concretization and gamification (n=4)" and for "E-Twinning projects (n=1)" point to the use of gamification and concretization in learning and teaching process for increasing students' participation.

Some of the samples for participants' views on the codes are quoted below. The variation in the Web 2.0 tools that the participants use is remarkable.

I have used web 2.0 tools generally for assessment and reinforcement in Turkish classes. I did activities of teaching synonyms and antonyms with "Crossword Labs". I did grammar activities with the 2nd, 3rd, and 4th graders by using the tools of "Educandy, Wordwall, Learning Apps". I did activities about literacy, syllables, words, and sentences, and 5W (Wh..?)1(Who?) with the 1st graders. [Ö9]

I use Web 2.0 tools in my classes in the preparation parts, in reinforcement activities during the learning-teaching process, and for measurement and evaluation activities. For example, I can obtain a visually rich instrument to attract attention when I project the poster I have prepared with "Canva" onto the smartboard. I can use the presentations prepared on "Quizizz" in teaching the lessons and I can also evaluate student performance with the same tool by preparing measurement and evaluation activities. It provided me with great convenience to evaluate the extent to which course objectives were accomplished through "Quizizz", to assess my students' gains with the tool by sending them a link, and to be able to see the results with the same tool, especially during distant education. I can create concept puzzles and I can even make my students create their own puzzles on the "Crossword Labs" program in concept teaching. I can do reinforcement activities with various educational games in Web 2.0 tools such as "Learning Apps" and "Wordwall", and I can communicate with the class and check homework for instance with Web 2.0 tools such as "Class Dojo" with which I can create online classrooms. In short, I can make use of Web 2.0 tools at any stage of the learning and teaching process." [Ö10]

Table 4 shows the categories and codes related to what Web 2.0 tools primary school teachers use and how they use them.

Table 4. How Web 2.0 Tools are Used

Categories	Codes
Assessment	WORDWALL: as a game, for assessment, for finding the level of comprehension, as grammar exercises (n=21)
	KAHOOT: for assessment (n=12)
	QUİZİZZ: for assessment (n=5)
	SOCRATİVE: for assessment and group work (n=4)
	NEARPOD: For assessment and presentation (n=3)
	PUZZLE MAKER: for assessment (n=1)
	PLICKERS: in preparing multiple-choice and True-False questions (n=1)
Gamification	LEARNİNG APPS: as a game and exercise (n=22)
	EDUCANDY: for gamification (n=6)
	JEOPARDYLABS: as a competition (n=1)
	EDMODO: as a game of combining words (n=1)
	SCTRACH: for word-visual matching and as a puzzle (n=1)
Language skills	STORYJUMPER: in creating stories (n=8)
	POOPLET: in making concept maps and mind maps, in making story maps (n=7)

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[Reading, writing, listening, speaking, visual reading]	VOKİ: in telling stories, in making up stories, in summarising, in self-expression, in tongue twisters (n=6)
	CRAM: in calling attention to a subject, in concept teaching (n=6)
	CROSSWORDLAB: in concept puzzles (n=5)
	WORDART: in word associations (n=5)
	CAHATTERPİX: in speaking (n=5)
	CLASS DOJO: in virtual classrooms, in teaching, revision, and silent reading (n=5)
	PİXELART: in activities of writing the letters of the alphabet (n=3)
	STORYBİRD: in reading(n=3)
	STORYBOARD THAT: in making up stories (n=3)
	PADLET: in displaying poems and in students' designs (n=3)
	TAGUL: in creating word clouds (n=3)
	JIGSAWPLANET: in writing stories based on visuals (n=2)
	THİNKLİNK: in interactive visual reading (n=2)
	LIVE WORKSHEET: as exercises (n=2)
	COOGLE: in concept maps (n=2)
	WAKALET: in writing collaborative poems acrostically (n=1)
	GIMKIT: in multiple-choice listening activities (n=1)
	PIXTON: in drawing cartoons and in writing them (n=1)
	ARTPIXEL: in teaching elementary literacy (n=1)
	BAAMBOOZLE: in punctuation marks (n=1)
	TOONTASTİC: in making up stories (n=1)
	QUIVERVISON: in making up stories (n=1)
	BOOKCREATOR: in preparing digital books (n=1)
	SUTORİ: in teaching a subject (n=1)
	OURBOX: in preparing digital books and journals (n=1)
	FLUPSNACK: in preparing digital books and journals (n=1)
	MOTIONPORTRAIT: as an instrument for making avatars and emojis speak (n=1)
	SKETCHBOARD: in concept maps (n=1)
Data collection and presentation	CANVA: in preparing posters for the classroom panel (n=10)
	GOOGLE FORM: in stating opinions (n=3)
	EMAZE: in presentations (n=2)
	PREZİ: in presentations (n=2)
	POWTOON: in animated presentations (n=1)
	CRELLO: in invitations and presentations (n=1)

According to Table 4, four categories (assessment, gamification, language skills, data collection, and presentation) were elicited for which Web 2.0 tools are used. Story writing and making concept maps come to the fore in the category of language skills, where various tools are used. It is also clear from Table 4 that "word wall" is used in three different categories called assessment, gamification, and

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teaching the language skills. It is evident from the categories shown in Table 4 that Web 2.0 tools are used in classes in various ways as the most popular tools to teach language skills (Storyjumper: in making up stories (n=8), Pooplet: in concept maps and mind maps, in making up stories (n=7), Voki: in telling stories, in making up stories, in summaries, in self-expression and tongue twisters (n=6), Cram: in calling attention to a subject, in concept teaching (n=6), Crosswordlab: in concept puzzles (n=5), Wordart: in word associations (n=5), Cahatterpix: in speaking (n=5), Class Dojo: in virtual classrooms, teaching, revising, homework and silent reading (n=5). In the category of data collection and presentation, the use of "Canva" in preparing classroom panels and posters for classroom comes to the fore (n=10). Some of the participants explained how they used tools as follows:

I used "Prezi". I taught the lesson through various templates. I taught punctuation marks through the template of space. [Ö12].

I wrote sentences such as "my mother baked buns", "I bought a green balloon" then I put the relevant visuals in mixed order and prepared a game in "Edmoda" for students to match the visuals with the sentences. I prepared a game of climbing on "Nearpod" to do word reading activities. Accordingly, the students read the words, marked the relevant pictures, climbed up, and thus completed the game. [Ö14]

We play games, which I have prepared with Web 2.0 tools at the end of each sound teaching. We create E-books and write stories with the students at the end of sound groups. Tools such as Storyjumper, Canva, Ourbox, Flipsnack, Cram, Learning Appls, Wordwall are among the Web 2.0 tools that I use. [Ö20]

The way the tools are used- that is to say, at what stage of lessons they are used- is an issue that should be considered from the perspective of teachers. Table 5 exhibits at what stages of teaching Turkish and primary literacy Web 2.0 tools are used and how they are used.

Table 5. The stages at which web 2.0 tools are used and examples for implementation

The Category of Teaching Turkish		The Category of Teaching Elementary Literacy	
Codes for the stages	Samples	Codes for the stages	Samples
Assessment (n=19)	"Word Wall" and "Learning Apps" are suitable for use in several gains in Turkish. [Ö6]	Teaching sounds (feeling, recognizing the sounds, and finding them within words) (n=6)	Activities can be prepared with Learning Apps" and "Word Wall" for elementary literacy by using visuals. In relation to speaking skills students can be made to do speaking activities by means of "Chatterpix". [Ö7]
Reinforcement and revision (n=16)			
Grammar (n=16)	"Coggle", for instance, is very useful in summarizing a subject. All the subjects can be presented on a single page and in an impressive way by preparing a relevant concept map. [Ö8]	Stages of literacy (sounds, syllables, sentences, texts) (n=5)	
Reading/viewing-visual reading-listening (n=12)		Showing the visuals of sounds (n=2)	I use them in all of the letter, syllable, word, and sentence activities. I start to use them after the process works smoothly and after they derive more syllables and words. I also use
Teaching new words, proverbs, and idioms (n=8)	Students can receive scores when they can answer the reading comprehension questions correctly. They also see their mistakes. That is,	Dictation (n=2)	

Speaking skill (n=8)	they can receive instant feedback. They can listen to texts containing correct pronunciation and stress while gains about listening are taught to them. [Ö22]		them in dictations activities. When we move on to sound "K", we can form more syllables and words and therefore I do activities such as word wheels, reading, and matching with pictures. [Ö14]
Teaching a subject (n=7)			
Writing and dictation (n=5)			
Comprehension questions and story writing (n=4)			I used them in making videos with "Toontastic" especially in sound activities. [Ö17]
Giving assignments (n=3)			I prepared a game with "Cram" for example at the stage of forming a syllable before sound "e". we wrote texts on "Story Jumper" at the end of the sound group. [Ö20]
Feedback (n=2)			

As clear from Table 5, the codes of assessment (n=19), reinforcement and revision (n=16), and grammar (n=16) are prominent in relation to at what stages of teaching Turkish the tools are used. Thus, participant coded as [Ö16] said that he/she used the tools in teaching the subject, another participant, [Ö18], said that using the tools in teaching a subject caused children to feel anxiety and excitement and that therefore he/she used them for reinforcement and assessment purposes. The participants' statements quoted below provide rich examples for the stages at which the tools are used:

I sometimes use word clouds for words which have associations with other words when we move on to a new text, concepts maps, and "Sketchboard" for connections between words at the beginning of lessons to attract students' attention. After the presentation, I use "word wall" for doing exercises if a synonymy has been taught and "Learning Apps" if punctuation marks have been taught. During the presentation, I choose "Classroom Screen" and I make the presentation. I use it as the blackboard and I ask the students to copy the things on the blackboard into their notebooks. I prepare the visual presentations for the details of a text with "Canva". I share activities on "Dojo", ask for the students to write their answers instantly, and to send me back again so that I can see their answers. After teaching the lessons, I use "Class Dojo" in homework given for revision and I ask them to do the activity on interactive worksheets or I use it in making videos, voice recording, and drawings. In the activity done for revision, the interactive worksheets are turned into pictures through "Dojo", and students answer the questions online. For example, a text which contains a paragraph of sentences but which does not contain punctuation marks is sent to students with "Dojo". Then the students do the activity and send it back to the teacher, or students are sent a text and are asked to mark the paragraphs, to find how many paragraphs it has, and to write the number of paragraphs. Many activities such as finding the number of sentences and words or dividing the words into syllables can be prepared. [Ö5]

It becomes apparent on examining the codes related to primary literacy that the Web 2.0 tools mentioned are used at every stage; for instance, in teaching sounds (feeling, recognizing and finding the sounds in words) (n=6), at the stages of teaching literacy (sounds, syllables, words, sentences, texts)

(n=5), in showing the visuals of sounds (n=2), dictation (n=2). The participants said that "Toontastic" and "Chatterpix" were effective in recognizing and feeling the sounds and in finding them in words, but the use of "Learning Apps" and "Word Wall" in deriving syllables from sounds and words from syllables was also apparent from the examples shown in the Table. Participant [Ö2] also gave examples for different Web 2.0 tools, as in the following:

I make the students create word clouds with words they have learned through "Tagul" at the stage of teaching the sounds in literacy teaching. I do activities of writing the letters with "Pixelart". I do tongue twister activities with "Voki". I make students learn individually and in groups with Cram and Jeopardlabs in Turkish classes and I make them create their own digital books with "Storyjumper". [Ö2]

Table 6 shows the 42 applications of web 2.0 tools that the participants recommended in the theme of learning and teaching process and their explanations together with their reasons.

Table 6. The Web 2.0 Tools Recommended

Order The Web 2.0 tools recommended	Reasons
Wordwall [n=24]	*It would be right to use the web 2.0 tool suitable to what we want to teach. Every web 2.0 tool is not suitable for every gain. I recommend these tools because they enable to prepare of activities for various and different skills. It is impossible to prepare activities for every skill by using only one tool, but it is possible to design amusing and remarkable activities through the tools [Ö7].*
Learnıng Apps [n=23]	
Kahott[n=13]	
Canva [n=11]	
Storyjumper[n=11]	
Padlet [n=8]	*For example, "Word Wall" enables you to transform a subject into a game, "Crossword Labs" enables you to prepare puzzles related to a subject and "Crello" enables you to prepare posters, brochures, invitations, etc. with superior visual design alternatives [Ö9].*
Chatterpıx [n=8]	
Classdojo[n=7]	
Word clouds (Word Art) [n=7]	
Crosswordlabs [n=5]	*I think "Canva" can be used because it offers visual support and because posters, cards, and word cards can be prepared with it. I think that "Crossword Lab" can be used because it can create a concept and word puzzles and it supports knowledge of vocabulary. "Learning App" can be used in gain reinforcement activities or elementary reading activities because it offers educational game support, "Storybird" or "Storyboard That" can be used because they support creative writing activities and text formation and comprehension activities. I believe that "Popplet" can be used in vocabulary activities or in creating mind maps related to grammar subjects because concept maps and webs can be designed with it. besides, it can also be used in reading comprehension, story mapping, and in K activities as a formal template. [Ö11]*
Storybırd [n=5]	
Cram [n=5]	
Quızızz [n=5]	
Educandy [n=4]	
Pooplet [n=4]	
Storyboardthat [n=3]	
Vokı [n=3]	
Classroomscreen [n=3]	
Neopord [n=2]	
Tagul[n=2]	
Crello [n=2]	
Prezi [n=2]	
Pıxel Art[n=2]	
Google Form [n=2]	

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Powtoon [n=1

Pıxton[n=1]

Scratch [n=1]

Lıveworksheet[n=1]

Gımkıt [n=1]

Quervısıon[n=1]

Socratıve [n=1]

Coggle[n=1]

Sketchboard [n=1]

Sutori [n=1]

Bamboozle[n=1]

Plıckers[n=1]

Emaze [n=1]

Jıgsawplanet [n=1]

Wakelet[n=1]

I am a Puzzle [n=1]

Thinklink [n=1]

Powtown [n=1]

A close examination of Table 6 makes it clear that the tools "Word Wall" [n=24] and "Learning Apps" [n=23] are primarily recommended by the participants. The statement "It would be right to use the web 2.0 tool suitable for what we want to teach. Every Web 2.0 tool is not suitable for every objective" by [Ö7] indicates that the purpose to which a Web 2.0 tool serves is the main factor which determines teachers' choice. Particularly the variation of templates that Web 2.0 tools have and the fact that students find the interactive activities amusing are the basis for the participants' recommendations. Some of the views stated by the participants are as follows:

We can prepare several activities on "Learning Apps" and "Word wall". We can make amusing games on "Nearpod". We can prepare grammar puzzles on "Crossword Labs". We can prepare posters for "Canva". We can monitor students' work from "Class Dojo". That is to say, we can benefit from it to address various objectives and to evaluate their accomplishment. [Ö14].

They make classes more amusing and more interactive. All the students can be engaged in classes in this way. [Ö31]

Teachers prefer "Tagul" in particular because it is fun… [Ö33]

Theme 2. The contributions of the educational use of Web 2.0 Tools

The participants were asked the question "explain the benefits of using Web 2.0 tools in teaching primary literacy and Turkish" within the framework of theme 2. The data obtained are shown in Table 7.

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Table 7. The educational use of web 2.0 tools

Categories	Codes
Contributions to in-class interaction	They secure motivation, fun, retention in learning, and self-confidence (n=17)
	Web 2.0 tools secure both individual learning and learning in groups. (n=3)
	They secure more active participation in lessons on the part of students (n=3)
	They secure that students recognize and use in daily life the technological tools that they are inclined to use (n=3)

As evident from Table 7, the contributions of Web 2.0 tools are considered in two main categories. One of them is the contribution to lessons. As evident from the code of "They contain concretization, auditory and visual interaction, gamification and activities which appeal to more than one sense" (n=18), they offer considerable benefits especially for primary school students in terms of cognitive and sensory development. The fact that those students' attention span is just developing, that subjects are understood through concrete learning, and that there is a need for revision over and over again and for feedback are all critically important. Web 2.0 tools can serve all these functions in addition to being fun. Moreover, the code formulated as "they secure motivation, fun, retention in learning and self-confidence" (n=17) in the category of contributions to in-class interaction points to how the tools influence students' attitudes towards participation in lessons. The samples from the raw data quoted below are indicative of the codes in the two categories.

A lot of interaction is necessary for learning a language. Web 2.0 tools have factors supportive of language teaching. Using them promotes students' achievement. It also ensures retention in learning. [Ö3]

Technological tools attract kids' attention more in a world which is digitalizing day by day. So, the tools we use offer advantages and they also make the process enjoyable because of their inclination towards using them. [Ö13]

The process of literacy can sometimes be challenging for kids. Using the tools at this point can motivate kids through games. They can do the activities that they would be bored doing if they were written on paper more enjoyably in this way. Besides, the tools make visual and auditory contributions to learning. [Ö14]

Theme 3. The Problems Encountered in Web 2.0 Tools and Recommendations for Solutions

The participants were asked two questions about theme 3 and two probing questions to receive more detailed answers.

Have you encountered any problems while using web 2.0 tools in teaching Turkish and primary literacy? Probe 1: If yes, could you please describe them and the reasons for encountering them?

What recommendations do you have for solutions to the problems you have encountered while using web 2.0 tools? Probe 2: Exemplify your recommendations in question 7.

While 10 participants said that they did not encounter any problems, 23 of them described the problems they had encountered and the probable recommendations for solutions to the problems. Table 8 shows the problems and recommendations for solutions comparatively.

Table 8. The Problems and Recommendations for Solutions

Participants' short answers		Categories				
No	Yes	Problems encountered →	Causes		Recommendations for solutions	
10	23	Codes		n	Codes	n
		Inadequate class time	All the students want to use the tools	2	Group work rather than competition should be prioritized .	1
					Short links that students can reach can be prepared. The links should be sent to students through EBA or WhatsApp	1
		Students have difficulty in doing the activities given	Forgetting to translate the language of Web tools into Turkish for students	2	More time should be spent and more practice should be made in using the tools.	1
		Students become addicted to the area of informatics	Digressing from the objective of the course	1	Continuous exercises should be done on how to use the tools.	1
		It takes a long time to learn web 2.0 tools.	Unavailable Turkish language support for certain Web 2.0 tools or Turkish support is paid	15	All the Web 2.0 tools should offer the option of Turkish language.	5
					School administration should pay for the tools.	1
					Google Translate should be used or a similar tool should be chosen. For example, "Crello" should be chosen if "Canva" demands payment after using it for a while.	4
					videos on Youtube should be watched to learn how to use the tools or videos on how to use them should be made and sent to parents.	2
		Inadequate technological possibilities for internet access in	Failure to ask students to do certain work	6	The technological infrastructure of the school should be improved, parents should be informed of the issue through seminars.	6

students' home and at school.			The Ministry of National Education should have a wide network of the internet. Additionally, telephone operators should not make their users spend from their quota for the internet used in education.	2
Unavailability of mobile applications of Web 2.0 tools	Families who do not have computers cannot use the applications. (Story jumper)	1	Equality of opportunity should be provided .	3
Teacher-centered use	The teacher is not adequately competent in an application. There are no guides.	3	Teachers should be offered training in this respect.	3

The most significant problem that the primary school teachers encountered in preparing content for Turkish and primary literacy and in using the content was that web 2.0 tools used did not have Turkish language support (n=15). Therefore, the participants recommended that Turkish language support for the tools should be offered or similar tools should be developed to overcome this problem- which was of critical importance in mother tongue teaching. The examples given by the participants [Ö26] and [Ö28] are supportive of the information given in the Table.

My students had difficulty in using "Quizizz" in distant education. We started to use "Gimkit" because it had a simpler interface. Online competitions can be prepared on both applications. [Ö26]

While "Storybird" (preparing stories)-which is a nice tool for literacy skills- allows using 7 days for free, "storyboard That" is a tool that does the same thing and which is free of charge. There are also other tools. It would make your work easier to research the tools, group them, and choose from them according to your need. [Ö28]

Another remarkable problem was stated as "inadequate technological possibilities for internet access in students' home and at school" (n=6). Certainly, such cases are problems that are beyond teachers' capabilities and which limit the use of internet-based applications. The recommendations made by the participants show that both schools and the Ministry of National Education should make certain arrangements in this respect. The examples given by [Ö3] and [Ö19], for instance, support the information given in the Table.

Guidance is difficult due to students' lack of technological tools and due to parents' inadequate knowledge of the subject. The infrastructure in schools is also insufficient. [Ö3]

The ministry should have a wide network of the internet in distant education, or we should provide all the kids with equal opportunities. [Ö19]

A close examination of Table 8 makes it evident that another remarkable problem is teachers' inadequate competence in the application and the absence of a guide concerning the applications (n=3). It is recommended that teachers should be offered training to overcome the problem. Problems encountered

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and the recommendations made apart from the ones mentioned above are described in Table 8. The example given by participant [Ö29] is supportive of the information given in the Table.

For example, I started my journey of using Web 2.0 tools with "Kahoot, Padlet" activities. They could not connect "Kahoot". The students who came to class with their iPad had difficulty connecting "Zoom" and "Kahoot". But we did not give up. We tried again and again. They use it better than me. In short, students should not be underestimated because they are open to learning and discovering. [Ö29]

4.Conclusion, discussion and suggestions

This study aimed to analyze primary school teachers' experiences of using Web 2.0 tools to teach primary literacy and Turkish. Integration of web 2.0 tools into the primary school learning and teaching process is shown figure 1.

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Figure 1. Integration of web 2.0 tools elementary teachers learning and teaching process

(https://infograph.venngage.com/edit/205df45e-c946-40d8-8e81-512089343e98)

An examination of the collected data in terms of learning and teaching demonstrated that the most remarkable code in the category of the advantages of using Web 2.0 tools was that the tools made it possible for students to be more active, to learn by having fun and to see various examples in a shorter time. These results are similar to the ones obtained by Warnich and Gordon (2015), by Fırat and Köksal (2017), and (Efe, 2014) showing that web 2.0 tools made classes more efficient, more interesting and more amusing, by Eva and Nicholson (2011) and Karadağ and Garip (2021) showing that these tools are a popular and amusing way of attracting students' attention and by Shon and Smith (2011) showing that Web 2.0 tools are amusing. In parallel to the results obtained in the current study, A. Korucu and Yücel (2015) also concluded that Web 2.0 tools may have significant effects such as increasing permanent learning, making the educational and instructional process more effective, making concept teaching easier, making the teaching and learning process easier and promoting efficiency in education and instruction. Huang et al. (2009) also emphasize that Web 2.0 tools offer learning environments that support learning, secure active participation, encourage collaboration and increase student participation. As apparent from the above-mentioned studies, it is important to integrate Web 2.0 tools into learning environments to support the learning and teaching process. Turhan and Bayram (2017), in a similar vein, also concluded that web 2.0 tools were described in positive words, that they provided interactive learning environments with various features, that they increased willingness to write, and that there was a desire to use them continuously in writing classes. When they were used for writing activities, it was found that the participants tended to describe these activities in positive words, they found them more versatile and communicative compared to traditional course books and moreover, according to the participants, these activities supported the development of mental skills. Similarly, Kutlu Demir (2018) and Wang and Lieberoth (2016) found that using the tools had several contributions such as increasing students' participation in learning environments, drawing their attention to lessons, making the process more amusing, developing higher-order thinking skills and motivating students.

In the category of how Web 2.0 tools were used, it was found that they were mostly used for reinforcement, homework, and measurement and evaluation purposes. While Karadağ and Garip (2021) stated that Learning Apps, one of the Web 2.0 tools, could be used for reinforcement and revision in Turkish teaching, Warnich and Gordon (2015) stated that the tools support measurement and evaluation. When the reasons for using Web 2.0 tools were examined, it was found that they were mostly used for active learning, concretization and gamification. The finding points to the use of gamification and concretization in the learning and teaching process for promoting student participation. Baran, Canbazoğlu-Bilici, and Mesutoğlu (2015) point out that students can use the skills they have gained by using the Powtoon program especially in preparing homework. When which Web 2.0 tools primary school teachers used and how they used them were examined, four categories emerged: assessment, gamification, language skills and data collection and presentation. Dağhan, Kibar, Çetin, Telli, and Akkoyunlu (2015), in a study conducted with the participation of pre-service teachers, looked at the effects of web diaries used within the context of a course on lessons and found that they were beneficial to pre-service teachers in terms of researching and presenting knowledge. It is thought that pre-service teachers' knowledge of how to use the tools in their classes will also enable them to use the tools in their future classes for educational purposes (Arabacıoğlu & Dursun, 2015; Eren, Avci, & Kapucu, 2015). An analysis of the codes for the four categories indicated that the application Wordwall was preferred the most in the category of assessment while the application Learning App was preferred the most in the

category of gamification, the applications Storyjumper, Pooplet, and Voki were preferred the most in the category of language skills and the application Canva was preferred the most in the category of data collection and presentation. The greatest number and variation was found in the category of language skills. As different from the finding obtained in this study, Tatlı, Akbulut, and Altınışık (2016) found that the Web 2.0 tools which were reported by pre-service teachers to be used the most frequently were Powtoon, Quizmaker, and Edrawmax, respectively. The reasons for preferring the above-mentioned tools were stated to be their allowing preparing concept maps, fishbone, concept cartoons, and concept networks. In addition, Barseghyan (2015) also found that Powtoon was the most popular alternative in preparing PowerPoint presentations. On checking at what stages of lessons web 2.0 tools were used in the category of teaching Turkish, the codes of assessment, reinforcement, revision, and grammar were found to be the main codes. Even though web 2.0 tools were used at every stage of primary literacy teaching, they were prominent mostly at the stages of sound teaching (feeling the sounds, recognizing them, and finding them in words) and literacy (sounds, syllables, words, sentences, texts).

In the theme of learning and teaching process, the participants made several recommendations related to web 2.0 tools but they recommended mostly Wordwall and Learning App. Two categories emerged in the theme of the educational use of web 2.0 tools. In the category of contributions to lessons; one of the categories, the participants mostly talked about the benefits in several areas such as concretization, auditory and visual interaction, gamification, activities appealing to more than one sense and primary literacy: making students feel the sounds, allowing them to work on syllables, words, sentences, and texts and Turkish: listening, watching, speaking, reading, comprehension, writing, self-expression, visual reading, conceptual knowledge, working with texts, vocabulary, concepts, grammar, dictation, reading fast. Turhan and Bayram (2017), Fattah (2015), Ince and Akdemir (2013), Grosseck (2009), Shih (2011), Sofia (2015), Thompson (2007) also point out that the tools had contributions in many aspects such as developing writing skills, supporting group work and increasing peer support. In the category of contributions to in-class interaction in the same theme in the current study, motivation, fun, retention in learning and self-confidence were among the issues which were the most remarkable. Similarly, Akcay and Arslan (2010) also argues that students will have the opportunity to see the weaknesses and strengths of their work and thus, their self-awareness will increase. Nandhini (2016) also states that web tools are effective in enabling students to interact with their classmates and with their teachers. Norton and Hathaway (2008), in a study conducted in primary schools, found that web 2.0 tools such as blog, podcast, and wiki were used in primary education in the USA and that they yielded positive results especially in attending to individual differences, in enabling communication and in developing students' and parents' motivation. McGrail and Davis (2011) used blogs to develop students' writing skills at the level of primary education and found that the students who used blogs established better relations with their readers by displaying more rational approaches towards them and that they could develop their writing skills by having experience in forming a community of writers. Nair, Tay, and Koh (2013) also used blogs at the level of primary education and they observed that students were as motivated in this way as writing with pen and paper and that they achieved self-development in writing when the process was managed well.

Finally, on examining the codes in the theme of problems and recommendations for solutions, it was found that the most frequently encountered problems were "it takes too much time to learn Web 2.0 tools" and "inadequate technological possibilities for internet access in students' home and at school", and the causes for the problems were described as unavailability of Turkish language support for certain Web 2.0 tools or extra payment for Turkish support and failure to ask for students to do certain work. As for recommendations for the solutions, the participants said that Google Translate should be used or

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a similar tool should be used and they gave examples such as using "Crello" instead of "Canva" if it demanded payment after using it for a while. They also recommended that the Ministry of National Education should have a wide network of internet. Another recommendation was that telephone operators should not make their users spend from their quota for the internet used in education. The findings demonstrated that the teachers had generally positive perspectives of Web 2.0 tools, that they thought the tools were useful and that they also displayed their beliefs in their use of the tools. It was also found here that there were no obstacles in front of using the tools if they had the adequate infrastructure and if the conditions in their schools were improved. The following recommendation can be made to researchers and practitioners in accordance with the findings obtained in this study:

1. Applied in-service training sessions, seminars, etc. should be offered by the Ministry of National Education primarily to primary teachers so that students at the first stage of education can use Web 2.0 tools effectively, and thus, their awareness of the issue should be raised and their skills in using the tools should be promoted. In addition, more space should be allocated to such tools in instructional technologies and material development courses in pre-service teacher training to increase their efficacy in this respect, and pre-service teachers should be given practical activities.

2. This study used a qualitative research design. Teachers' knowledge, skills, attitudes, etc. could be analyzed by using quantitative research design or mixed design.

3. This current study was conducted with the participation of primary school teachers. Similar studies could be conducted with the participation of pre-service teachers, primary school students, or with teachers of other branches and other stages of education.

4. Ministry of National Education should provide teachers with sufficient support to solve problems if they encounter any problems in the process.

5. The benefits and purpose of those tools should be explained to parents in detail and their support in the process should be asked to make students use the tools outside the classroom.

6. Considering the purpose of using web 2.0 tools, it is important to make teachers aware that they can use many applications for different purposes.

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