



Teachers' Opinions about Distance Web 2.0 Tools Training and Teachers' In-Class Web 2.0 Practices

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ABSTRACT

This qualitative research aims to determine teachers' opinions about in-class web 2.0 practices after distance professional development involvement. Twelve teachers from different public schools were selected purposefully as a sample group. The Web 2.0 and Distance Training Interview Form (WDTIF) was used after implementing web 2.0 tools in the classrooms to collect data. All interviews were audio-taped and transcribed. Then the data were analyzed by content analysis. The data analysis revealed that participating teachers recognized the different features of web 2.0 tools. Furthermore, it was found that teachers used web 2.0 tools for assessment, to create opportunities for collaboration, and to improve students' learning experience and engagement. Teachers also mentioned that distance education allowed them to participate in a professional learning community besides offering training opportunities. Distance education was also an affordable option for teachers who needs to travel to a distant location. During the interviews, the disadvantages of distance education were pointed out as well. These disadvantages were internet connection problems, lack of motivation and confidence, and face-to-face interaction. Further investigations were carried out to understand other related impacts of using web 2.0 tools in the classroom and distance teacher learning that arose during the study.

Keywords: Distance learning, web 2.0 tools, teachers, professional development.

INTRODUCTION

The development of information and communication technology has changed many aspects of life. If one compares fields such as education are considered, the use of technology has brought significant changes. The role of teachers, students, and schools has changed due to these rapid technological developments. These changes also affected research trends in education. Technology and its contributions to education have gained attention as a field of interest (Arat, & Bakan, 2011). Preparing teachers to use technology effectively in the



classroom also raised researchers' attention to develop this topic in detail (Bolick, Berson, Coutts, & Heinecke, 2003).

Teachers spend their entire lives surrounded by and using technology tools, yet they do not implement advances of technology in the classroom (Prensky, 2001). Due to a lack of technology integration training in teacher preparation programs, teachers lack experience and do not feel confident about implementing technology in the classroom (Carver, 2016; Lu, & Lei, 2012). Integrating technology into instruction requires having powerful technology, pedagogy, and content knowledge. As technology advances, the possibilities of using web-based technologies in education increases and benefits students of all ages. Blogs, wikis (What I Know Is), social networking are web-based technologies, and their use in education has emerged in recent years.

Web 2.0 tools allow users to communicate and collaborate while learning (Ajjan, & Hartshorne, 2008; O'reilly, 2005). For example, through different platforms, Wikis (What I Know is), individuals create Wikis, change content via adding, deleting, or editing. Wikis allow teachers to track students' learning progression and improve students' writing skills (Jonassen et al., 2008). Individuals use blogs to create and share their content with others. Blogs in education settings could be used for different purposes, including a source of information among teachers (Shaffer, Lackey, & Bolling, 2006) and a tool for improving writing skills and collaborative learning (Blood, 2002; Korucu and Yucel, 2005). Any individual with simple recording devices such as computers with access to the Internet may create recordings and publish them on different online platforms. In classrooms, podcasts could promote programs, activities, share school news, and record fields and classrooms (Williams, 2007). Social networking sites, including Facebook, Twitter, and Instagram, provide users a platform to create their profile, connect with others, and share opinions with their friends. Social networks are used for informal learning purposes, cross-cultural language learning (Selwyn, 2007). These tools are also used for creating a poster, a presentation, or a video; to brainstorm and assess (Aybat, & Dogan, 2017). Web 2.0 tools allow individuals to use higher-order thinking skills and problem-solving skills (Korucu, & Yucel, 2015). Web 2.0 tools allow users to work together and communicate by removing access barriers (Korucu, & Yucel, 2015) and increasing students' achievement (O'Bannon, & Britt, 2012).

Despite the popular belief that Web 2.0 tools are vital and beneficial for learning, some studies revealed that teachers do not use these tools due to the following reasons: lack of knowledge, lack of technical equipment, and parents' fears (Blannin, 2015; Chen, 2012; Korucu, & Karalar, 2017). Teachers are primarily responsible for integrating and using Web 2.0 tools in educational settings. Quality professional development cultivates teachers' skills and knowledge to integrate technology. Therefore, teachers should be equipped with the skills to integrate technology (Akpınar, 2003). Pan and Franklin (2011) identified three factors, including meaningful professional development and school administrative support, and self-efficacy affect classroom teachers' Web 2.0 tool implementation. Thus, teachers must continuously learn new technologies and know-how to implement them in the classroom. Different methods are used among educators to distribute information such as bulletins, professional development courses, workshops. Traditionally professional developments are designed for a short period, which can be one day or a week (Lieberman, & Pointer-Mace, 2008). With the rapid growth of the Internet, alternative delivery methods for professional development appeared (Lieberman & Pointer-Mace, 2008).

Distance education refers to a learning situation where the learner and the instructor are in different locations through different communication technologies (Usun, 2006; Belanger, & Jordan, 2000). Content in distance education is usually delivered via videos, video-conferencing systems, video-streaming (Fairbairn et al., 2000). Distance education provides a solution for education barriers such as lack of participants' time, availability of

professional development courses, funding, and travel expenses (Brown & Green, 2003; Karasar, 2004; Tyre, 2002).

Teachers especially working in disadvantaged areas, have no access to professional development. Therefore, governmental agencies support distance professional development (DPD) (Arat, & Bakan, 2011). DPD opens the door to many busy teachers that have no funds for participating in teacher training or have other similar restrictions (Yildiz, 2004). Most online professional development courses have set deadlines, allow participants to log on, participate in a discussion at any time that teachers are convenient, and complete the assignments (O'reilly, 2005). This flexibility in DPD allows learners to collaborate with other teachers to learn emerging technologies and instructional designs (Brown & Green 2003). Distance professional development does have barriers, too. These barriers are poor technology skills of users, inadequate access to the Internet or software, the feeling of isolation, and lack of motivation (Brown & Green 2003; Tyre, 2002). These barriers to the implementation of distance professional development are limited and easily overcome with careful planning.

Teachers are digital immigrants who have not grown up in the digital world (Prensky, 2001). Most of them were educated in the traditional education system and are not familiar with the use of technology in the classroom. Therefore, they are far behind digital narratives that grow up in a technology-rich environment (Prensky, 2001). Despite the efforts to train teachers on the implementation of technology, specifically Web 2.0 tools in the classroom, teachers still lack implementing Web 2.0 tools in their teaching (Wells & Lewis, 2006). The effective use of Web 2.0 technologies in education depends on teachers' proficiency level to integrate web 2.0 technologies into the curriculum, teachers' experience with Web 2.0 tools, and teachers' views and knowledge of web tools (Teo et al., 2019). For this reason, previous studies have explored the potential factors that explain teachers' intention to use web technologies. Teachers' positive intentions towards using technologies is a significant predictor of successful integration in the classroom (Sadaf et al., 2015; Alhassan, 2017; Ozerbas and Akin-Mart, 2017; Yaylak ve Inan, 2018; Caliskan et al., 2019; Teo et al., 2019; Onbasili, 2020). However, other factors including self-efficacy (DoBell, 2013; Efe, 2015; Alhassan, 2017; Birisci et al., 2018; Onbasili, 2020), available resources and technology in the schools (Alhassan, 2017; Yordming, 2017; Yaylak ve Inan, 2018; Alenezi, 2019; Okumus, 2019; Onbasili, 2020), personal factors (i.e., one teacher behavior influenced by her coworker) (Alhassan, 2017; Yaylak ve Inan, 2018; Alenezi, 2019), perceived usefulness of technology integration into teaching, and the ease of use (Majhi and Maharana, 2011; Alhassan, 2017; Altiok et al., 2017; Yaylak ve Inan, 2018; Okumus, 2019; Teo et al., 2019) also affects the integration of Web 2.0 technologies into teaching. Although different studies have explored the factors influencing teachers' intentions to use Web 2.0 tools, only limited studies have examined teachers' actual practices of Web 2.0 tools. Furthermore, there is no study regarding using the DPD program to enhance teachers' skills and professional knowledge about Web 2.0. Previous research also revealed that professional development regarding technology integration cultivates teachers' professional knowledge and skills for practicing Web 2.0 tools in the classroom (Lumpe, & Chambers, 2001). Due to teachers' professional development limitations, distance professional development becomes a way to enhance teachers' skills and knowledge. Therefore, we developed a DPD program for teachers from different subject areas. This study aimed to determine teachers' opinions about the Web 2.0 tools, DPD program, and teachers' in-class Web 2.0 practices. Two research questions guided this study are: (1) What are the teachers' opinions regarding their implementation of Web 2.0 tools in the classroom? (2) What are teachers' opinions regarding the DPD program about Web 2.0 tools?

METHODS

a) Research Design and Study Group

Teachers' opinions about in-class web 2.0 practices and distance professional development (DPD) program about Web 2.0 technologies were investigated with a case-study design. Based on research and descriptions by Merriam (2015), this study examined carefully various areas ranging from interviewing the participating teachers, training them to use and integrate Web 2.0 tools in the classroom, and interviewing with teachers after classroom implementation.

A convenience sampling method was used to select twelve teachers (four male and eight female; ages range 21-45; three middle school science teachers, two elementary school science teachers, three kindergarten teachers, one computer education (ICT teacher) from different public schools. The convenient sampling method allows researchers to select subjects that represent the population and are most convenient to recruit for the study (Balci, 2016; Yildirim, & Simsek, 2005). The participating teachers volunteered to participate in the study because they were comfortable using the Internet, were eager to learn new technologies, and adapt to their instruction methods.

b) Data Collection

The data were collected with semi-structured interviews with teachers after implementing Web 2.0 technologies in the classroom. Interviews are vital tools in qualitative research to collect detailed and meaningful information from interviewees and contribute a body of knowledge that is conceptual and theoretical (Yin, 2003). Semi-structured interviews allow an interviewer to be a part of the interview process and expand the interviewee's responses (Merriam, 2015). After teaching, interviews with the teachers helped the researchers construct a general understanding of how DPD about Web 2.0 technologies affected teachers' teaching practices. The researchers developed the interview protocol, Web 2.0, and Distance Training Form (WDTIF), based on the literature. Interview questions provided understanding and insight for interviewees and guided conversations rather than solid questions (Merriam, 2015; Patton, 2014). The first draft of the WDTIF consisted of 15 questions and modified after four experts' opinion was taken. The modified version of the form was used in interviews with five teachers who enrolled in the DPD program. After the pilot study, interviewing five teachers, necessary changes were made, the latest version of the form was created. The latest version of the WDTIF consisted of 14 questions. After participants involved in the DPD program and the teaching, interviews were conducted with teachers. Each teachers' interviews were audio-recorded and lasted for 30-45 minutes.

c) Data Analysis

To determine teachers' opinions about in-class web 2.0 practices and distance professional development (DPD), the data collected from an instrument, the WDTIF, and analyzed with content analysis methods. Through content analysis, a large amount of data transforms into a summary of the results (Mostyn, 1985). The authors transcribed data from interviews. Each teacher in the study was represented with the letter "T." The numbers from 1 to 12 were used to label teachers as well. Teachers' identities were kept anonymous. Following, researchers read teachers' transcribed interviews separately then discussed their interpretations of data. Researchers agreed on the codes and perceived the meaning of teachers' responses. Inter-coder reliability was calculated by using the following formula $[(\text{Consensus} / \text{Consensus} + \text{Disagreement}) * 100]$ and found as $91/113 * 100 = 0.81\%$

(Miles, & Huberman, 1994). Since the inter-coding results were above 80%, the coding was reliable (Miles, & Huberman, 1994).

d) Distance Professional Development

Participating teachers received six weeks (2 hours per week) DPD regarding Web 2.0 technologies (Table 1).

Table 1. *The content of the Web 2.0 DPD*

Week	Objectives	Subject	Time
1	To understand the aim of the research study, its importance, and ethical norms. To understand the nature of technology and technological literacy.	Introduction to the study Nature of technology Introduction to technological literacy	2 hours
2	To learn technology practices and the ways of integrating them into classroom instruction	Technology practices and their application in the classroom	2 hours
3	To learn Web 2.0 Technology	Web 2.0 Technology	2 hours
4	To learn Web 2.0 technology, practice them in different scenarios	Web 2.0 Technology	2 hours
5	To learn Web 2.0 technology; practice them in different scenarios; develop a lesson in different content areas.	Web 2.0 Technology	2 hours
6	Being able to use Web 2.0 Technology appropriately.	Web 2.0 Technology	2 hours

DPD was developed in three stages (Figure 1): (1) The content of the DPD about Web 2.0 technologies were created. (2) Pilot study: One teacher volunteered to participate in DPD. Researchers analyzed the strengths and weaknesses of Web 2.0 curriculum; the teacher's feedback about the curriculum collected; curriculum revision made based on researchers' observations, experiences, and teacher's feedback (3) DPD: The DPD took six weeks and was carried out in two different portals: eTwinning(www.etwinning.net) and Sinnif (<https://www.sinnif.com/>). eTwinning is a part of the Lifelong Learning Community Program of the European Commission and brought the different communities of schools and researchers in Europe. Sinnif is a Turkish online platform in which educators teach different subjects in an online environment. Teachers were required to complete the activities that the researcher developed and collaborated with colleagues on documents using Google Docs and Spreadsheet (<http://docs.google.com/>). Teachers used Prezi (<https://prezi.com/>) to create a presentation, created assessment activities with Kahoot (<https://kahoot.com/>), created lesson plans using Google Docs and collaborated with other participants, created concept maps (<https://www.mindmeister.com/>), used Padlet (<https://padlet.com/>) to follow announcements and homework, and QR codes (<https://www.qrstuff.com/>). All these activities are potential direct applications in the classroom. A deductive approach was adopted for the training.



Figure 1. Stages of Training Process

FINDINGS

The results of the semi-structured interviews were summarized based on the codes that emerged from teachers' answers. First, teachers were asked to define Web 2.0 to explore their perceptions of Web 2.0. According to participant responses: "Web 2.0 is a collection of applications where the users interact with content through internet technologies.", "Web 2.0 technologies aim to enhance creativity, information sharing, collaboration among students-students and students-teachers. Tools also improve communication among teachers, parents, and students, help students to solve learning problems, facilitate learning, improve instructional activities, enable to track students' learning, support meaningful learning". For instance, T1 reflected: "Web 2.0 is an interactive environment where students enhance interpersonal relationship skills. Students will use different platforms, such as Google Docs, to leave comments on each other's work. They evaluate each other's work, improve their work." T4 commented, "Web 2.0 technology empowers students' problem-solving skills. While working together, students undertake different roles, possibly this leading to improve their problem-solving skills, communication skills as well." T10 pointed out, "Web 2.0 influences teaching because teachers can communicate with the students and parents. Web 2.0 will help science teachers teach the topic in-depth. They can go beyond the book. Even some applications can help students to understand abstract ideas. Things that students cannot see are hard to teach for the teachers. Various applications will provide different students' learning environment."

Next, the importance of using Web 2.0 in the classroom was asked to the teachers. Using Web 2.0 technologies allow participants to have a voice, support student-centered syllabus. Web 2.0 technologies also encourage students to become responsible for their learning, gain knowledge and skills critical for today's workforce, allow teachers and students to exchange ideas and experiences, and expand their knowledge and professional capabilities. For instance, T3 stated, "Teachers and students must have Web 2.0 skills and network building skills. They should have social media responsibility and practice. Being an active participant in Blogs, wikis, social networking, and other collaborative tools enhance these skills. These skills are critical for today's information technology, and workforce demands these skills as well." T12 reflected, "Web 2.0 technologies are easy to use and available for everyone. Teachers and students can easily access these tools and receive content updates. They offer a unique way of sharing information." T9 highlighted, "Web 2.0 technologies increase student engagement. For instance, students can use the podcast to deepen their learning."

The third research question examined the benefits of Web 2.0 technologies. The results of the study indicated that the participants think that the use of Web 2.0 technologies has significant benefits, including (1) Social (2) Professional (3) Technological (Table 2).

Teachers mentioned that using Web 2.0 technologies in teaching helps students build a sense of community, increases communication and collaboration among student-student and student-teacher, and allows sharing stories from a distance. For instance, T10 reported, "This year I communicated with my students through Easy Class outside of the classroom. I uploaded sources, homework through the website. Students discussed the classroom materials on discussion forums before teaching. I believe this allowed my students to connect with their classmates and me outside of the classroom."

T11 stated, "Edmodo postings, comments, and feedbacks were the first interactive environment my students had experienced." The Use of Web 2.0 technologies also enhance students' motivation, enrich students' learning experiences, increase students' engagement with content, create opportunities for students to collaborate, allow students to engage with new literacies, creates a sense of ownership in learning, support the use of alternative assessment methods. For instance, T4 stated, "I used Molecular Workbench (<http://mw.concord.org/modeler>) along with physical models to teach face change. This technology allowed students to visualize invisible structures such as atoms, molecules. During the class, I also created questions with Kahoot. Students enjoyed the activity."

Furthermore, teachers reported that Web 2.0 tools are easy to use, save time, and save copying materials costs. Web 2.0 technologies provide a flexible learning environment that extends learning beyond the classroom. For example, T2 stated, "Students took a virtual trip to Field Museum and explored the fossils without traveling anywhere or paying any money. Since my students were low-income, virtual field trips are a great way to bring outside to the inside of the classroom."

Table 2. *Advantages of Web 2.0 technologies*

Theme	Code	Teachers
Social	Freedom to share	4, 6, 3
	Encourage collaboration among students	1, 10
	Relationship building from a distance	7, 10
	Connecting with other's stories	9, 11
Professional	Facilitate motivation among students	6, 11, 8
	Support 21 st century learning	2, 8, 11, 1, 3, 4, 10, 9
	Support the use of alternative assessment	7
	Facilitate teaching	6, 7, 9, 11, 12
	Increase in Technology literacy	7, 12
Technological	Responsibility	9, 11
	Cost savings	2, 3, 10, 9, 7
	Time-saving	12, 4, 6, 8
	Flexibility	1, 4, 5, 10, 12, 11

Table 3 illustrates the teachers who use Web 2.0 technologies in the classroom. Notably, there is heavy use of Web 2.0 technologies in the classroom.

Table 3. *The Frequency of Web 2.0 Technology Use*

Theme	Code	Teachers
The Use of Web 2.0 Technologies	Frequency	
	Always	T1, T3, T4, T6, T7, T10
	Sometimes	T2, T5, T11, T12
	Frequently	T8, T9

The fifth research question examined the areas of Web 2.0 technologies use in the classroom. The results of the study indicated that Web 2.0 technologies were used for different purposes, including (1) Content share, (2) Teaching, (3) To create visuals and books, (4) Communication, (5) Assessment (Table 4). For example, T4 mentioned, "I created a classroom Wiki to share educational databases such as Britannica Encyclopedia's, Bilim Cocuk (Science and Kid)." T12 also highlighted, "I used Padlet to announce students' homework and Prezi to create a presentation. Also, I should not forget Kahoot. It is a fun way to ask questions."

Table 4. *The areas of Web 2.0 Technologies Used*

Theme	Code	Teachers
Content share	Weebly	T4
	Google classroom	T8, T12, T4
	Easy class	T11, T1, T3, T10
	Edmodo	T11
	Wiki	T4
Creating visuals and books	Canva	T5, T6, T7, T10
	Book creator	T9
Teaching	Edpuzzle	T9, T10
	Prezi	T3, T12
	Quiver, expeditions	T1, T6
	Animato	T8, T5
	Youtube	T11, T8
	Pawton	T1
Communication	WhatsApp	T3, T7
	Facebook	T2
	Padlet	T6, T10, T12
	Classdojo	T4
Assessment	Kahoot	T4, T7, T9, T11, T12
	Quizizz	T7, T11

Following, the barriers that teachers faced while implementing Web 2.0 technologies were asked. Teachers stated that due to limited access to technology resources such as blocked websites and computer labs, they could not use Web 2.0 technologies. Additionally, T2 explained that she did not use Web 2.0 technologies because it does not match the lesson goals she was teaching. Other respondents mentioned that since eighth-grade curricula were information-dense, and teachers prepare students for the national exams, they often prefer not to use Web 2.0 tools. Technology addiction, training expenses, time management, and noise were other barriers teachers explained during the interviews.

Table 5. *Barriers to Web 2.0 implementation*

Theme	Code	Teachers
Barriers	Technology addiction	T1, T6, T7, T12
	Time management	T3, T7, T10
	Lack of social interaction	T6, T8
	A lack of available/working technology	T3, T10
	Limits creativity	T5
	Not suitable for every lesson goal	T2
	Information-dense curriculum	T7
	Expenses for training	T10, T8
	Noise	T11

The second part of the interview was designed to determine teachers' opinions regarding DPD about Web 2.0 tools. The first question examined how DPD affected teachers' use of Web 2.0 technologies. Most of the teachers indicated that DPD affected their teaching positively and generally enjoyed learning Web 2.0 (Table 6). For instance, T2 mentioned that "DPD positively affected my teaching. I integrated Web 2.0 into my teaching and maximized the learning opportunities for my students. I started to use a variety of technologies. During the training, I also developed new skills, and the skills have opened a new aspect of my profession." Even though most teachers expressed the advantages of taking DPD, two teachers shared their unexpected responses with the researchers. The participant said, "Some teachers own their learning process and thus may choose to drop out when they want to. Drop out of the course was unlike in a traditional school system where learning is strictly controlled. I believe when the teacher thinks they learned enough; they drop out." As stated, teachers consider dropout positively. Leaving the course without completing means, the teacher already gained enough knowledge and skills. This finding raises the question, "Is the definition of dropout in distance education different than dropout in the traditional school system?"

Table 6. *The effect of DPD on Web 2.0*

Theme	Codes	Number of Teachers
Effects of DPD	Positive	9
	Negative	3

Next, teachers were asked to define what benefited them while participating in DPD. Teachers noted the ability to work anytime, the ability to work from Internet-accessible computers, no money cost, the flexibility of reaching the course materials, and contribution to teachers' professional knowledge (Table 7). For example, T5 said, "DPD is suitable for teachers who live in disadvantaged regions. There is no professional development about Web 2.0 in my area. Therefore, this course has benefitted me." T10 also pointed out, "With this course, I gained information about Web 2.0, started to integrate into my curriculum."

Table 7. Reasons for taking DPD about Web 2.0

Theme	Codes	Teachers
Reason of taking	Quality of the trainer	T1, T3, T5, T7, T8, T9, T11
	Contribution to professional development	T2, T5, T10, T11, T12
	Ability to work anytime	T1, T4, T6, T7, T11
	Location	T1, T5, T6, T7
	Variety of course offerings/	T1, T2, T5, T9
	Pre-packaged course materials	
	Distance	T1, T4, T5
	Ability to work from any Internet-accessible computer	T4
	The flexibility of reaching the course materials	T9
	Stipend	T3

Teachers were asked how DPD about Web 2.0 benefitted their qualifications (Table 8). Data suggest that teachers were unfamiliar with Web 2.0 and ill-prepared to use Web 2.0 tools before the DPD. After the DPD, teachers gained knowledge about Web 2.0 technology. They developed lesson plans. After teaching, respondents claimed they gained an understanding of how to integrate Web 2.0 pedagogically. Teachers' interest was also increased even if some teachers still have limited technological equipment. This result was unexpected, and future research would need to be conducted to investigate how a lack of equipment affects teachers' interest.

Furthermore, teachers stated that they used social networks, wikis after they gained prerequisite technological knowledge. Since teachers understand the technological aspects of pictures on the Internet and the videos, they know how to use them pedagogically within lessons in different content areas. Teachers highlighted that their Technological Pedagogical and Content Knowledge (TPACK) did change. For instance, T1 said, "I did not know how to integrate Web 2.0 before DPD. For instance, after the course, I learned Web 2.0 technologies such as Edmodo, Google Classroom, and Kahoot. Moreover, in the class, I tried to use them in different content and observed students. Based on feedback that I received them, I understand how to use them." Another teacher, T4, stated, "I posted thought-provoking questions every week in Google Classroom, and students commented. I used a rubric to assess students' posts and comments."

Table 8. Effects of DPD on teachers' qualifications

Theme	Codes	Teachers
Technological Pedagogical Content Knowledge (TPACK)	Technological knowledge	T1, T2, T4, T10
	21st-century skills knowledge	T3, T7, T8, T9
	Content knowledge	T6, T9, T11, T12
	General knowledge	T5, T9
	Pedagogical content knowledge	T6, T12, T3, T2, T10
	Technological pedagogical content knowledge	T2

Teachers were asked to barriers while participating in DPD. They listed barriers as lack of time, face-to-face interaction, lack of motivation, technology addiction, slow Internet,

lack of confidence, and familiarity with the online system (Table 9). For example, T3 said, "While I was in the system, external factors such as the cry of my kid distract me." T10 also highlighted another point "Slow internet connection, and internet cut off is a big problem for me." T11 stated, "I used to spend less time on Social media sites such as Facebook, Twitter. However, after participating in this course, I found myself spending more time on Social Media, especially while I was waiting for scheduled course time."

Table 9. *Barriers of DPD*

Theme	Codes	Teachers
Barriers	Lack of face-to-face interaction	T1, T3, T4, T5, T6, T8, T9, T10, T12
	Lack of motivation	T2, T7, T8
	Lack of confidence	T8
	Lack of familiarity with the system	T3, T9
	Technology addiction	T2, T4, T11
	Technical difficulties including slow Internet connection	T10

DISCUSSION and CONCLUSION

The study investigated teachers' opinions about in-class web 2.0 practices and distance training. Interview data revealed that teachers define Web 2.0 as a collection of technologies where users interact with content through internet technologies. Web 2.0 technologies enhance creativity, information sharing, collaboration among students-students and students-teachers. Furthermore, Web 2.0 technologies improve communication among teachers, parents, and students, help to solve learning problems, facilitate learning, improve instructional activities, enable to track students' learning, support meaningful learning. Findings in the studies (Aijan, & Hartshorne, 2008; Cheung, & Lee, 2010; Korucu, & Karalar, 2017) are further supported by this current study since teachers' definition of Web 2.0 has similarities with the definitions in these studies. In these studies, Web 2.0 technologies were defined as a collection of tools that improve students' interaction, motivation, facilitate teaching, enhance learning experiences.

Teachers use Web 2.0 technologies for different purposes: (1) to encourage students to increase their voice in the classroom (2) to support collaboration among students (3) to facilitate students' motivation (4) to increase technology literacy and to facilitate teaching (Becta, 2008; Boulous, & Wheelert, 2007; Dabbagh, & Kitsantas, 2012; Dumitrescu, 2015; Greenhow, Robelia, & Hughes, 2009; Hartshorne, & Ajjan, 2009; Huang, Jeng, & Huang, 2009; Kamel-Boulos, & Wheeler, 2007; Karvounidis et al., 2014; Vance, 2012; Rogers-Estate, 2014; Joebagio, & Akhyar, 2018). The current findings are similar to some of the previous literature. Korucu and Yucel (2015) pointed out that the use of Web 2.0 technologies support students to be active learners and facilitate teaching. Tekinarslan (2008) and Redecker et al. (2009) also concluded that the use of Web 2.0 technologies increase students' motivation. Teachers mostly used wikis, google classroom, social networking sites, and photo/video sharing sites, which corresponds with the findings of Korucu and Karalar (2017) (Table 4). Korucu and Karalar (2017) claimed that teachers used different Web 2.0 technologies, including Facebook, Prezi, Lawton, Videocast, Social Networks, Blog, Google tools, measurement, and evaluation tools for teaching. Teachers used Web 2.0 technologies for different purposes: (1) Content share (2) Teaching (3) To create visuals and books, (4) Communication, (5) Assessment. For instance, teachers used Youtube to share content or as an instructional delivery tool, and to facilitate motivation. Blogs, on the other hand, are used in other studies (Bennett et al., 2012; Churchill, 2011; Lei et al., 2012) to share content as

well. These results suggest that teachers' proficiency, familiarity with Web 2.0 technologies affect technology use. Ertmer and Ottenbreit-Leftwich (2010) argued teachers' skills and knowledge for using technology significantly affect teachers' classroom use of Web 2.0 technologies. Furthermore, this study shows that social networking sites are commonly used among teachers. This finding did not agree with the results that other researchers claimed (Gray et al., 2010; Lenhart & Madden, 2007). The previous literature claimed that though teenagers frequently used social networking sites, teachers did not use them.

Findings from the second part of the interviews are consistent with the findings from the review of the literature. Teachers agree with the benefits of DPD, as identified in the literature. Teachers in rural areas often have to travel great distances from their cities to receive professional development. Teachers may spend up to 1000 TL in travel costs, and spend several days away from family and classroom. Time is also another determining factor that affects teachers' participation in DPD. Going to the workshop means time away from class and family. This study shows that DPD requires less time away from class and family and offers flexible scheduling, which corresponds with the findings of Taslibeyaz, Karaman, and Goktas (2014). They found that DPD shortened the training duration, implementation, and evaluation of the practices and direct access to information empowered teachers TPCAK (Gurbuz, 2014; Hammond, Rennie, & Dickson, 2007; Sirin, & Tekdal, 2015). DPD reduces the isolation that rural teachers face and allows them to reach out to other colleagues (Herrington, & Herrington, 2001). Teachers agree that DPD offers ongoing support from other teachers and internet resources.

Participating in a distance-delivered professional development requires teachers to be self-motivated. Distance learning places a large amount of responsibility on teachers. Teachers interviewed in the study see this as a barrier, which agrees with a study conducted by Muhirwa (2009). Muhirwa (2009) reported that teachers lack motivation during the DPD. Teachers also shared other barriers as identified in the review of literature such as lack of confidence, lack of face-to-face interaction, lack of familiarity of the system that used for DPD, technical difficulties including slow Internet connection (Becta, 2008; Bingimlas, 2017; Muhirwa, 2009; Rowland, & Rubbert, 2001). Bingimlas (2017) stated that DPD causes spending more time on the Internet, especially while waiting for instruction. Internet connection problems are another concern that arose in the study. Teachers did not share some of the barriers, including technology addiction, which was mentioned in the literature.

Teachers described the DPD experience positive. They were satisfied with the DPD; mentioned that in terms of professional development outcomes, they were similar. This finding was supported by other researchers (Carswell, & Venkatesh, 2002; Gurbuz, 2014; Housing, 2004; King, 2001; O'malley, & McCraw, 1999). Teachers also mentioned DPD improved teachers' Technological Knowledge, 21st-century skills Knowledge, Content Knowledge, General knowledge, Pedagogical Content Knowledge, and Technological Pedagogical Content Knowledge (Bacigalupo, Ferrari, & Punie, 2009; Beldarrain, 2006; Dexter, Anderson, & Becker, 1999; Fahad, 2009; Usal, & Albayrak, 2005; Usta, & Korkmaz, 2010).

Some research limitations are considered in this study. First, this case study lacks statistical generalizability. Statistical generalization was not the goal of the case study. Second, since the researchers developed and taught DPD, their biases, prejudices, and attitudes shaped the interpretation of the findings. Interviews were used as only one data source, and it may be possible that these biases still exist. Using multiple data sources reduces biases and allow researchers to triangulate the information.

While this study examined teachers' opinions about in-class web 2.0, further longitudinal research needs to be conducted to determine the factors influencing teachers'

intent, level of use, and ability to integrate Web 2.0 in the classroom. Future researchers also should conduct classroom observations about the ways of teachers' technology integration.

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