Pre-service Teachers' Views about Digital Teaching Materials

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Abstract

This study aims to reveal pre-service teachers' views about digital teaching materials which they have in their Technologies in Teaching and Materials Design course. In this qualitative study, phenomenological design was used. The participants of the study consist of 55 pre-service teachers studying and taking the above-mentioned course at Gazi Faculty of Education.Data were collected through "Written Form for Pre-service Teachers' Views about Digital Teaching Materials" developed by the researcher. Content analysis method was used to analyze the qualitative data collected. Findings of the study showed that pre-service teachers found the preparation of digital teaching materials useful, interesting and gripping, suitable for the age of technology, effective for their field of study. They also stated that the use of this kind of digital teaching materials needed to be more common. The study also revealed that pre-service teachers found Web 2.0 tools which they learnt to use such as presentation (Emaze and Powtoon), discussion (Padlet and Voice Threat) and interactive evaluation (Kahoot and Plickers) technically different, unusual, attractive, user-friendly, enhancing creativity and visually rich. The most frequently emphasized strengths of using these tools in the classroom were being interesting, attention grabbing, enhancing motivation and permanence, enabling active participation and effective discussion atmosphere, providing instant feedback. The limitations of using these digital teaching materials in the classroom were stated as such: the need for internet, many characters and features not being free of charge, it may lead to distraction if not used effectively, students might make insulting comments on each other, some students might feel unhappy when their faults are revealed, competition may lead to ambition. Challenges of using these tools in the classroom were stated as such: the need for fast internet connection, some tools have parts that are not free of charge and it hinders complete use of the tool, some tools are difficult to use. Considering the views regarding how digital teaching materials would support teaching process, it was found out that pre-service teachers thought such materials would draw and raise attention, make the lesson enjoyable; diverse, original and effective content would be created; more practice would be possible, learning would become permanent and easier; students' active participation would be enabled; students' motivation would be

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increased; effective communication would be possible; technology would be involved in the process; students' success would increase.

Introduction

In the digital era, technology has a key role worldwide. Many social systems such as industry, economy and communication expect educational institutions to raise individuals who can use technology. Education system expects the same function from teachers (Akpinar, 2003). According to the standards of International Society for Technology in Education (ISTE, 2016), teachers seek opportunities to improve learning and teaching facilities and support student success: teachers develop a common vision for a learning environment supported with technology; they support the idea of providing students with a chance to equally reach educational technologies, digital content and learning opportunities in order to meet different needs of all students; they become a model for their colleagues in recognizing, discovering, adopting, evaluating and enhancing new digital resources and tools for learning. According to the standards of Association for Educational Communications and Technology (AECT, 2012), teachers develop themselves as reflective practitioners who show that educational technologies and processes based on contemporary content and pedagogy could be effectively practised; they make learning easy by creating, using, evaluating and managing effective learning environment. Pre-service teachers who are trained to teach future generations need to use technology as a tool, integrate it with their fields, and use it with the most suitable pedagogical methods. Faculties of Education have a major role in equipping pre-service teachers with these qualifications and the course of Technologies in Teaching and Materials Design, which was included in teaching curriculum from 1998 on as a compulsory vocational course by the Council of Higher Education, has a significant role.

As Yaman (2018) states, if technological support could be used timely and effectively for the new generation, who are born into the era of technology and are called digital local or z generation, it would enhance learning. Here the two important words to be highlighted about technological support are using it timely and effectively. Digital teaching materials which can be used in classrooms are also important technological supports. Although digital teaching materials seem to be related with technology, actually it is closely related with educational status which is the third structural dimension of educational program or of a course, also known as learning and teaching processes. They can also be effectively used in the evaluation step of the course, depending on the use. The important thing to

be emphasized here is that technology should not be used as a purpose, but as a tool to reach the goals. The need to know how to use digital tools existing in the digital era and to focus on how to include such tools timely and effectively in the teaching process as teaching materials is of great significance, and studies on this issue are needed.

In one study, teachers' views about digital educational tools used in teaching English language were explored. As the results of the study revealed, teachers stated that digital tools motivated students and improved their skills by making them eager to learn the language (Celik and Aytin, 2014). As Demirel maintains, using technology in learning environment makes teaching more motivating as the lessons are presented effectively. At this point, teachers need to have the required pedagogical approaches and skills to integrate technology into their lessons (Eryaman, 2007; Basal, 2016). Richards also highlights that using technology in teaching has become more important today because teachers need to keep pace with students' knowledge of technology (Richards, 2014). Designing and developing interactive materials with new technologies and organizing resources for teaching are elaborate skills for teachers (Schlosser and Anderson, 1994; qtd. in Basal, 2016). It's true that technology offers many options in making teaching interesting and more productive in terms of development (Yordming, 2017). There are various technologies in free web sources which can support the process for teachers and learners. One of these technologies is Web 2.0 technologies. Web 2.0 technologies offer a variety of options to prepare digital teaching materials.

Creating digital teaching materials require a different approach and skill. A relevant study revealed that teacher training programs were inadequate in equipping their students with the knowledge and ability to integrate technology effectively with their curriculum or teaching methods; well-planned activities for designing and developing digital materials contributed positively to foreign language teachers' attitudes toward technology; a statistically meaningful difference was detected between teachers' attitudes toward Web 2.0 tools introduced in practice in line with the study; practical training for developing digital materials contributed to teachers' integrating technology effectively with their lessons. It was emhasized that integration of both pre-service and in-service applied technology training into their fields significantly helped teachers to adopt technological approaches (Basal, 2016).

At this point one is curious about the views of pre-service teachers regarding the use of digital teaching materials in teacher training. These being the starting point, this study reveals the views of pre-service teachers about digital teaching materials and hopefully it will contribute to literature in this field.

Aim

This study aims to reveal pre-service teachers' views about digital teaching materials which they have in their course named Technology in Teaching and Materials Design. In line with this aim, answers were sought for the following questions:

1. What are pre-service teachers' views about the preparation of digital teaching materials?

2. What are pre-service teachers' views about Web 2.0 tools for digital presentation, discussion and interactive evaluation, which they learnt to use?

3. What are pre-service teachers' views about the problems faced when preparing digital teaching materials?

4. What are pre-service teachers' views about how digital teaching materials would support the process in teaching?

Method

Phenomenological Design was used in this qualitative study. Phenomenological Design focuses on phenomena which do not have detailed and deep understanding despite being aware. In addition, research in phenomenology aims to find out what a phenomenon (event, concept, experience, perception etc.) means in individuals' lives (Yildirim and Simsek, 2016). This study is an attempt to discuss joint meaning of pre-service teachers' experiences in the phenomenon of preparing digital teaching materials, which is also a requirement for research in phenomenology (Creswell, 2014). The main focus of this study is the views regarding the phenomenon of preparing digital teaching materials in the course named Technology in Teaching and Materials Design.

Participants

Participants of the study consist of 55 pre-service teachers who are sophomores studying English Language Teaching and taking the course named Technology in Teaching and Materials Design in the Faculty of Education at Gazi University in the spring semester of 2017-2018 Academic year. Details about the participants are shown in Table 1 below.

Table 1. Participants of the Study

Groups	Gender		Total	%
	Female	Male		
Classroom 1	16	6	22	40.00
Classroom 2	11	4	15	27.27
Classroom 3	15	3	18	32.73
Total	42	13	55	100

As seen in Table 1, participants of the study consist of 55 pre-service teachers. There are 22 pre-service teachers in Classroom 1 (16 females, 6 males), 15 pre-service teachers in Classroom 2 (11 females, 4 males), and 18 pre-service teachers in Classroom 3 (15 females, 3 males).

6 pre-service teachers who previously used some Web 2.0 tools (Kahoot and Padlet) were excluded from the participants. Also, pre-service teachers who were repeat students were excluded from the participants as they took the course before and did not have to attend classes.

Data Collection Tools

"Written form for Pre-service Teachers' Views about Digital Teaching Materials" was prepared in order to reveal pre-service teachers' views about digital teaching materials which they had in the course named Technology in Teaching and Materials Design. When developing the form, the researcher did literature review first, examined studies, and completed the draft of the form by writing four open-ended questions which sought answers to research questions. The researcher got opinions of two experts in this field about the form and edited punctuation in one item in line with the experts' opinions. Besides, the form was applied to a student outside the study in order to detect required time for the questions and to test clarity of the questions. No changes were needed about the form since no problems occured, so final draft was completed. Questions related to pre-service teachers in the form of views are as follows: 1. What are your views about preparing digital teaching materials? 2.a. What are your views about the technical features of Web 2.0 tools of presentation (Emaze and Powtoon), discussion (Padlet and Voice Threat) and interactive evaluation (Kahoot and Plickers), which you learnt to use? b. What do you think are the strengths and limitations of using these digital teaching materials in classrooms? Please explain in separate groups. 3. What are the problems you face when preparing digital teaching materials? 4. Please explain your views about how digital teaching materials would support teaching process.

Written form of views is used to collect detailed data from the participants and interpret them instead of quantitative data (Cepni, 2012; Yildirim & Simsek, 2008). Participants write about their views together with the reasons regarding open-ended questions in the form (Merriam, 2009).

Application and Data Collection

This study was carried out by the researcher in the course named Technology in Teaching and Materials Design taken by sophomores studying English Language Teaching at the Faculty of Education in Gazi University in the spring semester of 2017-2018 academic year. The above-mentioned course was offered for 4 hours a week in the curriculum; 2 hours of theory, 2 hours of practice. Considering the content and scope of the course, starting from the fifth week of the semester, the weekly two-hour theoretical part was completed within the normal process. For the remaining two-hour practice part, a Web 2.0 tool was introduced every week, pre-service teachers were taught in details how to use them, sample course materials were examined and prepared. The order of introduction and use of Web 2.0 tools in the process is as follows: Emaze, PowToon, Padlet, Voice Threat, Kahoot, Plickers. In the selection of these digital tools, three categories were determined, namely presentation, discussion and interactive evaluation, and two tools for each category were chosen. The reasons for choosing these Web 2.0 tools are that they can be used in educational process, they are free of charge, they are user-friendly. Besides, considering the department of the participants, the tools had to be suitable for using in English language teaching. The process was completed in 6 weeks, 12 class hours. Pre-service teachers were asked to prepare samples regarding the tools introduced and used. They had to do this out of class and about their field of study. For the preparation of samples, participants were told that they could check the videos on the researcher's portal called Vitamin Ogretmen if they needed (Emaze; http://www.vitaminogretmen.com/videolar/1754#, PowToon: http://www.vitaminogretmen.com/videolar/1840, Kahoot and Plickers; http://www.vitaminogretmen.com/videolar/1619). The researcher provided the participants with necessary support and feedback individually out of class, via email.

Once the six-week process was completed, "Written Feedback Form regarding Pre-Service Teachers' Views about Digital Teaching Materials", which was prepared by the researcher, was given to the participants by allocating free time to fill in that form. Forms were applied by the researcher.

Data Analysis

Content analysis method was used for the analysis of the qualitative data. Content analysisenables the revelation and comparison of world views, attitudes, prejudices, opinions. Similar data are gathered around common themes (Marvasti, 2004). The forms were numbered first in the study. Within this context, written forms of the data were coded, then they were combined under sub-themes depending on similarity in meaning, the sub-themes were gathered under main themes. In the final step of content analysis, the relations among the themes which were obtained in the light of the data were determined and findings were explained. In order to identify the reliability of coding, the coding list prepared by the researcher separately for each question was also used by another researcher

and the coding process was completed. The codings provided by the two researchers were matched and differences were identified. Miles and Huberman's (1994) Agreement Reliability = x100 Agreement + Disagreement formula was used and coding match percentage was calculated separately for each question. Accordingly, coding match percentages were; 82% for the first question, 80% for the second question, 82% for the third question, and 81% for the fourth question.

Findings

Pre-service Teachers' Views regarding the Preparation of Digital Teaching Materials

First of all, pre-service teachers' views regarding the preparation of digital teaching materials were examined. Findings obtained as a result of the interviews are shown in Table 2.

Table 2. Pre-service Teachers' Views regarding the Preparation of Digital Teaching Materials

Theme	Sub-themes	Sample Views of Pre-service Teachers
Preparation of Digital Teaching Materials	Useful	S6 *"Our era is the era of technology. Even three-year-old children can use mobile phones, tablets etc. Thus, using technological materials at school will keep pace with the era and make education more fun because we had fun while preparing and using … their use should be taught and made common."*
	Interesting and attention-grabbing	
	Suitable for Technological Era, modern, updated	S8 *"I wish such programs had been used in our time, then we would have been at a very different level. The use of these tools should be made more common."*
	Effective in teaching English	S10 *"I found them really useful in general. They are effective materials in teaching English. These are different and convenient materials unlike ordinary teaching materials.*
	Fun to prepare and use	
	Should be used more commonly	S13 *"Really effective in teaching English. It is appropriate for English."*
		S22 *"They were quite fun. They were the ones for which I told myself 'if I used in the classroom, students would love them'. Besides, I had fun while preparing materials."*
	Making teaching and learning easy	
	Economical	S23 *"In my opinion the use of these materials is really interesting and useful. They particularly develop our creativity."*
	Appealing to more than one sense	S31 *"With the developing technology, smart phones, smart boards, using social media are at their peak. We live in an age when little children can download and play games on the tablet even before they learn to speak. As a teacher, it would be boring trying to catch up with them by using traditional materials. It would be more effective to keep pace with them on a platform which they know well and where they have fun. So, I think that preparing and using course materials on digital platforms is useful and convenient."*
	Unusual, different	
	Enhancing creativity	
	Enhancing self-confidence	
	Motivating for the course	S34 *"For me it is quite useful. These are applications which revive visual intelligence."*
	Reviving visual intelligence	S35 *"For me preparing digital teaching materials is more economical and interesting compared to traditional teaching materials."*
	Enhancing permanency	S44 *"I think they are very useful. I believe that such digital programs should be used more commonly."*
	Although using some of the tools can be difficult, the results make happy	S46 *"If I hadn't taken such a course, I would feel insufficient when I become a teacher. All pre-service teachers need to know about these tools and the use of such tools should become more common."*

* Pre-service teachers have more than one view.

*Views were ordered from the most frequent ones to the least.

When pre-service teachers' views about the preparation of digital teaching materials were examined from Table 2, it was found that more than half of the participants (f=38) stated it was useful. In addition, it was found that pre-service teachers regarded preparing digital teaching materials as interesting and attention grabbing, suitable fort he technological era, modern, up-to-date, effective in teaching English, fun and they stated that its use had to be made more common, respectively. Moreover, it was stated to be making learning easy, economical, appealing to more than one sense, unusual and different. There were also views emphasizing that preparing materials in the digital environment improved creativity, enhanced self-confidence, motivating for the lessons, reviving visual intelligence and increasing permanency. Other than these views, there were also views, very few though, stating that although it could be challenging at first to prepare digital materials, the results made happy.

Pre-service Teachers' Views about Web 2.0 Tools for Presentation, Discussion and Interactive Evaluation, which They Learnt to Use

In the second step of the findings of the study, pre-service teachers views regarding Web 2.0 tools for presentation, discussion and interactive evaluation were examined in line with the second sub-question. As a result of the interviews, the findings regarding Emaze and Powtoon were shown in Table 3; findings regarding Padlet and Voice threat in Table 4; and findings regarding Kahoot and Plickers in Table 5.

Pre-service Teachers' Views regarding Emaze and Powtoon Presentation Tools

Table 3. Pre-service Teachers' Views regarding Emaze and Powtoon Presentation Tools

Theme	Sub-themes	Sample Views of Pre-service Teachers
TechnicalFeatures of Emaze and Powtoon presentation tools	Rich in visual materials	S9 *"You can choose and set everything your way, which enances creativity."*
	Useful	
	Unusual and different from traditional presentation tools	S13 *"Visually quality. Presentations in any field could be prepared, templates are various."*
	Enhancing creativity	S16 *"Visually rich. Also rich in 3D transitions and animation."*
	Templates regarding different themes are various and effective	S20 *"Templates to be used are so rich. There are templates about different themes and that's effective."*
	Easy to add videos, pictures and sounds	S32 *"Very different from other presentation tools I know and they are also user-friendly. Besides, I think that they would be very useful in education process."*
	Quality	
	Rich in 3D transition and animation features	
	User-friendly	

		Easy to share on social media	
Strengths of using these presentation tools in the classroom		Interesting and attention grabbing fort he student	S7 *"These are presentation tools which maket he lessons fun. I think they would be effective particularly in teaching English to young learners."*
		Enhancing focus	S17 *"Not an ordinary presentation; more attractive for students."*
		Making the lesson fun	
		Increasing motivation	S18 *"I wish I had known these tools before. These are more than presentations. I think they would increase permanency of whatever is learnt. Also, I'd like to be assigned as a teacher at once and use these tools in my lessons since they maket he lessons fun."*
		Enhancing permanency	
		Effective in teaching English language	
Limitations of using these presentation tools in the classroom		Need for internet, downloading unavailable	S12 *"It might be distracting if long texts are used, then it wouldn't be fun."*
		Many characters and features not being free	S20 *"Using Powtoon is a little difficult and time-consuming."*
		Distracting if not used effectively	S42 *"They cannot be used without internet connection, internet is a must."*
		Powtoon is difficult to use, time-consuming, requires higher skills	S48 *"Many characters and features are not free; those free of charge are not good. I had difficulty in using and it took much time."*

* Pre-service teachers have more than one view.

*Views were ordered from the most frequent ones to the least.

When pre-service teachers' views regarding Emaze and Powtoon presentation tools in Table 3 were examined, it was found that participants stated that technically these presentation tools were rich in visual aspects, they were useful, unusual and different from traditional presentation tools, they enhanced creativity, templates about different themes were rich and effective, it was easy to add videos, pictures, and sounds, they were quality, 3D transitions and animation features were rich, they were user-friendly and easy toshare on social media. For strengths of using Emaze and Powtoon presentation tools, pre-service teachers stated that they were interesting and attention grabbing for the students; they enhanced focusing; they made the lessons fun; they enhanced motivation and permanency; finally, they were effective in teaching English language. Participant pre-service teachers stated that they needed internet to use these presentation tools, the tools could not be used without internet connection, and they regarded this as a limitation. Furthermore, some other limitations stated by the participant pre-service teachers were that manu characters and features were not free, those that were free were not sufficient in terms of variety, these presentations tools could distract students if not used effectively. Participants also stated that Powtoon required higher skills and it was difficult to use, and it was time consuming.

Pre-service Teachers' Views regarding Padlet and Voice Threat Discussion Tools

Table 4. Pre-service Teachers' Views regarding Padlet and Voice Threat Discussion Tools

Theme	Sub-themes	Sample Views of Students
Technical Features of Emaze and Powtoon presentation tools	Practical	S14 *"Links can be copied and pasted, sounds can be used to comment, write or to add videos, which enriches the tool."*
	User-friendly	S28 *"It is user-friendly. We can also use it on our smart phones."*
	Different	
	Suitable for teaching English language	S32 *"It looks like social media but it is educational."*
	Similar to social media	S43 *"Adaptation of traditional discussion atmosphere into digital environment. We're bored with traditional methods. Using technology enriched the discussion environment."*
	Rich in visual aspects	
	Can be used on smart phones	S55 *"It's suitable for teaching English language, particularly writing and speaking skills."*
	Rich in adding pictures, sounds and videos in discussions (Voice Threat)	
Strengths of using these discussion tools in the classroom	Open to different points of views	S7 *"Students have the opportunity to see different points of views."*
	Offers effective discussion environment and enhances interactivity	S5 *"It's very effective in taking the interaction in the classroom outside."*
	Enables critical thinking	S17 *"Useful in group homework, it offers interaction and enhances critical thinking."*
	Offers brainstorming	S18 *"A great tool to use in brainstorming in the classroom."*
	Can be used out of class	S20 *"It is a chance for students who are too shy to speak in the classroom. They can actively participate here. It may enhance students' critical thinking skills."*
	Offering chances to reach more than one view at the same time	
	Enables active participation	S22 *"I can reach the views of many friends at the same time."*
	Opinions and views can be shared	S30 *"It offers effective discussion environment."*
	Offers group work	S32 *"It enables active participation of all students. It also increases interactivity among students."*
Limitations of using these discussion tools in the classroom	Students might make insulting comments on each other	S6 *"Students might get bored if the comments are too long."*
		S7 *"Cannot be used without internet."*
	Certain points could be missed by students when they post redundantly	S15 *"It may get complicated when there are too many posts."*
		S17 *"Internet is a must to use it."*
	Students might get bored with long comments	S21 *"Students might make insulting comments on each other's views."*
	Need for internet to use	

* Pre-service teachers have more than one view.

*Views were ordered from the most frequent ones to the least.

As seen in Table 4, pre-service teachers stated about the technical features of these discussion tools that they were practical, user-friendly, different, suitable for teaching English language, they were similar to social media, rich in visual aspects, they could be used on smart phones, rich in adding pictures, sounds and videos to discussions. As the strengths of Padlet and Voice Threat, participants stated that different points of views could be seen, these tools offered effective discussion environment

and enhanced interactivity, they enabled critical thinking, they offered an environment for brainstorming, they could also be used out of classroom, many different views couldbe reached at the same time, they enabled active participation, opinions and views could be shared, students had a chance to have group work. On the other hand, as limitations of using these discussion tools, pre-service teachers stated that students might make insulting comments on each other's views, they might miss some parts in the case of too many posts, they might get bored with long comments, and these tools required internet to use.

Pre-service Teachers' Views about Kahoot and Plickers Interactive Evaluation Tools

Table 5. Pre-service Teachers' Views about Kahoot and Plickers Interactive Evaluation Tools

Theme	Sub-themes	Sample Views of Pre-service Teachers
Technical Features of these interactive evaluation tools	Very different	S8 *"Easy to prepare and use. Great opportunity to add pictures and videos to the questions."*
	Easy to prepare and use	
	Practical	S18 *"You may prepare as many questions as you wish, check and use others' questions, add pictures and videos to questions. I've already got addicted to it."*
	Enable students to add pictures and videos to questions	
	Unlimited number of questions	S55 *"Easy to use and prepare; different."*
	Questions prepared by others could be used	
Strengths of using these interactive evaluation tools in the classroom	Fun	S1 *"It makes asking oral questions fun."*
	Attention grabbing	S3 *"Unusual and attention grabbing ... practice is enabled with questions."*
	Effective	
	Being in the game format	S8 *"Quite fun ... You have the opportunity to evaluate the success of a class quickly. Enables the teacher to revise the subjects."*
	Enable active participation of all students	
	Instant feedback	S12 *"Being able to check the statistics and archieve them is very important."*
	Offers statistical data which can be archived	S33 *"It's fun to deal with questions from different points of views ... There is competition in the classroom and these tools make the lessons interesting, increase permanency."*
	Enhance motivation	
	Lead to competition	S35 *"It's a strength to see the result instantly and correct the mistakes."*
	Enhance interactivity in the classroom	S39 *"Their being in the game format makes the process fun."*
	Practising the subjects	S40 *"It's very effective that these tools enable active participation of all students."*
	Increase permanency	S49 *"Bringing technology into the classroom, turning lessons into games."*
	Draw attention to the lesson	
	Instant evaluation	S55 *"They are interactive and appeal to the whole class."*
	Opportunity to revise the subjects	
	Integrating technology into the classroom	

Limitations of using these interactive evaluation tools in the classroom	Monitoring mistakes may lead to frustration	S6 *"Need for internet may pose problems."*
	Competition may lead to ambition	S11 *"The need for smart phones for Kahoot might be a limitation since using smart phones in secondary and high schools is banned."*
	Need for internet to use	
	Smart phones are required (for Kahoot)	S35 *"Some students might be unhappy with their mistakes monitored."*
		S52 *"Competition may lead to ambition unnecessarily among students."*

* Pre-service teachers have more than one view.

*Views were ordered from the most frequent ones to the least.

As seen in Table 5, regarding Kahoot and Plickers interactive evaluation tools, pre-service teachers stated most frequently (f=42) that these tools were different. It was also found that participants stated these tools were easy to prepare and use, they had the opportunity to add pictures and videos to questions, there were unlimited number of questions, and students might check and use questions prepared by others. The most frequently mentioned (f=48) strength of using Kahoot and Plickers interactive evaluation tools in the classroom was that they were fun, and they made dealing with questions fun. Besides, as for strengths of using these interactive evaluation tools in the classroom, pre-service teachers explained that these tools were interesting and attention grabbing, effective, they were in the game format and enabled active participation of all students, they offered instant feedback and statistical data, the data could be archieved, they enhanced motivation and created a competitive atmosphere, they increased interaction in the classroom, they enabled practice, increased permanency, raised attention towards lessons, offered instant evaluation and revision, and these tools integrated technology into the classroom. On the other hand, pre-service teachers stated some views about the limitations of using these tools in the classroom; some students might be unhappy with their mistakes monitored, competition might lead to ambition, internet was required to use these tools, using Kahoot required smart phones.

Pre-service Teachers' Views regarding the Problems Faced in the Preparation of Digital Teaching Materials

In this study, pre-service teachers' views regarding the problems faced in the preparation of digital teaching materials were examined in line with the third sub-question. The findings as a result of the interviews are shown in Table 6.

Table 6. Pre-service teachers' views regarding the problems faced in the preparation of digital teaching materials

Theme	Sub-themes	Sample Views of Pre-service Teachers
Problems faced in the preparation of digital teaching materials	Need for internet	S2 *"I had problems with the internet. Some programs require high internet speed."*
	Internet speed	
	In some programs having difficulty at first, but then getting easier after a few trials	S5 *"In some tools some of the features were not free and it limited the use of the program and I had to look for alternatives."*
		S12 *"I did not face many problems. I just had problems with the internet when preparing. Some tools were also challenging."*
		S17 *"Using some of the tools may be time consuming but this is quite normal to get good results."*
	Using some programs can be time consuming	S35 *"At first I had difficulty in using these tools, but after a few attempts I understood that preparing these programs was in fact easy and fun. Besides, internet is required to use them."*
	Some programs require good equipment	S36 *"At first I had difficulty in using these tools because I had never used such tools before. But after a few attempts I saw that they were really easy."*
	Limited use due to sections that require payment	S37 *"Internet speed being low caused some problems in preparing the materials."*
	Having difficulty in using some of the programs	S42 "Because we were not familiar with these materials, learning to use them took some time."
		S43 *"At first I had difficulty in using these digital materials as I had never used them before, but I coped with the problems once I got used to them."*
	Not being able to use technology well	S52 *"I'm not very good at using technology, so I had some difficulty."*

 * Pre-service teachers have more than one view.

 *Views were ordered from the most frequent ones to the least.

As seen in Table 6, the majority of pre-service teachers (f=46) stated that the need for internet posed problems when preparing digital teaching materials. Participants also emphasized that high speed internet was needed and if not, it would cause problems. For some programs participants had difficulty at first but they found it easier to use after a few attempts. Pre-service teachers also stated that some programs took much time and some programs needed good equipment. The fact that some parts of the tools were not free prevented participants from complete use of the tools. On the other hand,a few pre-service teachers (f=4) explained that they had difficulty in using these tools at first since they were not good at using technology.A few of the pre-service teachers (f=8) stated that they had no problems at all. One of the pre-service teachers explained that s/he did not have any problems because s/he could use the technology very well:

S14 "I had no problems at all because I'm very good at using technology. So, it was really fun to prepare something with these tools and focus on educational aspects."

Pre-service Teachers' Views about How Digital Teaching Materials would Support the Process

In the study pre-service teachers' views regarding how digital teaching materials would support the learning and teaching process when they became teachers were analyzed in line with the fourth sub-question. The findings as a result of the interviews are shown in Table 7.

Table 7. Pre-service teachers' Views regarding How Digital Teaching Materials would Support the Learning and Teaching Process

Theme	Sub-themes	Sample Views of Pre-service Teachers
How digital teaching ma [How digital teaching materials would support the learning and teaching process]	Attract attention and raise curiosity	S6 *"I think these materials will offer an atmosphere without stress and anxiety."*
	Make the lesson fun	
	Create colorful, original and effective content	S7 *"I believe that they will be useful in making the lessons more fun and motivating the students."*
	Practising and enhancing permanency	
	Making learning easy	S13 *"I think these materials can increase success in terms of learning and they can draw students' attention because they are fun."*
	Enable active participation of students	
	Increase student motivation	
	Communicate effectively and create positive classroom atmosphere	S14 *"I believe thanks to these materials I will be able to maket he lessons more effective, memorable and fun."*
	Offer variety and make the lessons fun	S30 *"I'm sure they will be more interesting for students."*
	Make the lessons productive and effective	
	Integrate technology into the classroom	S32 *"I think they will be useful in grabbing students' attention. With these materials I'm sure lessons will be more fun. So, student participation, motivation and success will increase."*
	Increase student success	
	Offer an atmosphere without stress and anxiety	
	Develop oneself	
	Enhance interaction	
	Make the lessons more exciting	

* Pre-service teachers have more than one view.

*Views were ordered from the most frequent ones to the least.

As seen in Table 7, majority (f=40) of the pre-service teachers stated that digital teaching materials would be useful in attention grabbing and raising curiosity. Besides it was found that the participants stated digital teaching materials would support teaching by making the lessons fun, creating colorful, original and effective content, enabling practice and enhancing permanency, making learning easier, encouraging active participation of students, enhancing student motivation, communicating effectively and creating a positive classroom atmosphere. It was also found that participants stated using digital teaching materials would offer variety in lessons, they would make the lessons productive and efficient, integrate technology into classrooms, increase student success, offer an environment away from stress and anxiety, improve students, enhance interaction and make the lessons more exciting.

Results, Discussion and Implications

This study aimed to reveal pre-service teachers' views regarding digital teaching materials. Considering the views regarding digital teaching materials, findings of the study revealed that pre-service teachers found these materials useful, attention grabbing and interesting. This finding has similarities with the results of other studies (Celik ve Aytin, 2014; Yamauchi, 2008; Weber, 2014; Putman, 2014; *Rioseco, Paukner*-Nogués, ve Ramírez-Muñoz, *2017;* Yordming, 2017; Cam, 2018).Besides, when the views which regarded preparation of digital teaching materials as avantgarde were examined, participants' responses were remarkable. Pre-service teachers emphasized that even little children could use digital tools easily, so they stated that it was of great significance they used such tools. Using such technologies in classrooms would offer an alternative way for the teacher to reach students who were already using them. Using such technologies in the classroom which students are familiar with would enable to build up sound bridges between the teacher and the students (De Weber vd., 2007; Akt, Başal, 2016).

Another remarkable result of the study was the emphasis that digital teaching materials were effective in teaching English language. Another finding was that pre-service teachers stated they found preparing digital teaching materials fun. As literature review shows there are a number of studies on digital tools which found that such digital tools were fun (Kuriakose ve Luwes, 2016; Solmaz andCetin, 2017; Chou, 2017; Iwamoto, vd., 2017; Yapici ve Karakoyun, 2017; Demirkan, Gurişik and Akın, 2017; Cam, 2018). Another remarkable finding was that pre-service teachers stated use of such digital tools needed to be made more common. In his PhD dissertation titled 'A Suggested Program of Vocational Development to Improve Lecturers' Technological and Pedagogical Field Knowledge', Cam (2018) found that majority of lecturers who participated in his study stated it was their first encounter with such applications and that they had not gone through a contemporary education system based on technology. As Cam emphasized, that finding revealed the fact that teachers were not trained in line with contemporary requirements, which would bring to mind that attempts to make faculties of education contemporary were insufficient. Besides, Cam highlighted that considering innovations in teacher training programs, integrating technology into classrooms was a must (Cam, 2018).

As for pre-service teachers' views regarding Emaze and Powtoon presentation tools, it was found that they regarded these tools as rich in visual aspects, useful and effective, different from traditional presentation tools, unusual and enhancing creativity. Rioseco et al. (2017), in their study to reveal students' views regarding developing learning activities about undergraduate teacher training, found that students had positive views about using Powtoon and that students found it useful in the field of education and it also encouraged challenging creativity not only for teachers but also for students.

Strengths of using Emaze and Powtoon presentation tools in classrooms were stated as such: they grabbed students' attention, enhanced focusing, made the lessons fun, increased motivation and permanency. It was particularly emphasized that these tools were attention-grabbing, different from traditional presentation tools students were familiar with, so they were interesting and they enhanced focusing. Taking these into consideration, it could be maintained that digital tools would affect motivation. Rioseco et al. (2017) similarly found in their study that undergraduate students regarded Powtoon as a motivating tool in order to create interactive materials through animations and videos.

Participant pre-service teachers also stated that these digital presentation tools would be effective in teaching English language. *Literature review shows that there are studies which support this result; Weber (2014), for example, emphasized that these digital presentation tools could be used in any classroom, they would be useful particularly in English language classes. Similarly, Rioseco et al. (2017) agreed on that.*Findings regarding the limitations of using these digital presentation tools revealed that pre-service teachers stated internet was needed to use these tools in the classroom and that they could not be used without internet. While the free parts of these presentation tools cannot be downloaded as they are used in classrooms, they can also be downloaded into a computer by paying certain amount of money and then can be used anywhere without internet. Even though pre-service teachers were informed about this, it was found that many of them ignored it. In addition, it should be remembered that digital environment includes online works. As a limitation of using these tools, participants stated that many of the characters and features were not free of charge, those which were free lacked variety and were not so good. Similarly, Rioseco et al. (2017) found in their study that while some students stated using Powtoon was easy, others stated it was complicated. Besides, some students who participated in their study saw restrictions in free accounts as a serious problem and they stated they could reach many tools and resources only through charged membership. In fact, some features of these tools being free of charge is important in recognizing, using, and experiencing the tool. Once it is proved to be effective, it could be used more productively by paying the required amount. Pre-service teachers were told about this throughout the reserach process and it was emphasized that they could work with these tools comprehensively and fully by paying for them.

Results regarding Padlet and Voice Threat revealed that pre-service teachers stated these tools were practical, user-friendly, different, and suitable for teaching English language. Using these tools is quite easy, which was also emphasized by the participants. It was also found that pre-service teachers highlighted these tools looked like social media, they were rich in visual aspects and they could be used on smart phones. Considering this finding, it could be maintained that students who use smart phones in everyday life and follow social media in this era of technology have fun using smart phones in the classrooms as well.

Strengths of using Padlet and Voice Threat discussion tools were stated as such: different opinions and points of views could be seen, they offer effective discussion environment and enhance interaction, they encourage critical thinking, they offer a suitable atmosphere for brainstorming, they could be used out of classroom, a number of views could be reached at the same time, they enable active participation and group work. Putman (2014), who found similar results with those of this study, asserts that the number of users who could arrange a wall on Padlet at the same time should not be limited. Putnam also maintains that when the changes could be seen instantly, it would enhance the opportunity for collaboration. He regards Padlet as an effective application in order for students to join group discussions and share ideas about learning.

Limitations of using Padlet and Voice Threat discussion tools were stated as such: students might make insulting comments on each other's views, students might miss some parts in the case of too many posts. Deni and Zainal (2015), in their study where they used Padlet in teaching communication skills, stated that some introverted students were not able to cope with their fear of sharing because of reasons resulting from either low self-confidence or anxiety.

As for the findings about Kahoot and Plickers interactive evaluation tools, the study revealed that these tools were easy to prepare and use and they were practical. It could be maintained that pre-service teachers did not have difficulty but had fun in preparing these tools. Strengths of using these tools were stated as such: fun, effective, attention grabbing, being in the game format. Literature review on interactive evaluation tools reveals that there are similar findings in that answering questions by using these interactive tools is fun (Kuriakose and Luwes, 2016; Solmaz andCetin, 2017; Chou, 2017; Iwamoto, et al., 2017; Yapiciand Karakoyun, 2017).Another strength of using these tools in the classroom was that they encouraged active participation of the students and offered instant feedback. Instant feedback helps students to correct their mistakes (Kuriakose & Luwes, 2016). The fact that programs such as Kahoot and Plickers give instant feedback and enable students to correct their mistakes serve to the purpose of interactive evaluation (Zengin, Bars and Simsek, 2017) and show which points need revising or making effort (Sellahewa, 2012). That interactive evaluation tools such as Kahoot and Plickers give feedback instantly facilitates creating effective teaching and learning environment (Elmahdi et al., 2018).

Some other strengths of using interactive evaluation tools such as Kahoot and Plickers are that they offer statistical data and the data can be archieved, they enhance motivation, create competitive atmosphere, increase in-class interaction, enable practice and permanency, raise attention for the lessons, offer quick evaluation and revision, integrate technology into the classroom. Limitations of using these tools in the classroom were stated as such: some students might feel unhappy with their mistakes monitored, competition may lead to ambition, internet is needed to use them and smart phone is required for Kahoot.

Regarding the problems faced in the preparation of digital teaching materials, the findings revealed that the majority of pre-service teachers emphasized the need for internet as a problem. Besides, the participants stated that internet speed needed to be high, otherwise there would be problems in preparing the materials. Participants stated that they had difficulty in using some of the programs at first but it got easier after a few attempts, some programs were time consuming and some others required good equipment. Powtoon, in particular, requires good equipment. As it is a comprehensive program, weak equipment may slow down the speed of work. In fact, this challenging situation does not result from the program itself, it is important that being well-equipped is important to work with such programs. Another problem stated by the participants was that the programs are not completely free. Pre-service teachers explained that since some parts of the program were not free of charge, they did not manage to fully use it. As stated earlier, such programs offer certain features for free to introduce them but the rest are to be paid for. On the other hand, a few pre-service teachers stated that they did not have any problems at all and one of them explained that he did not have any problems because he was really good at using technology. This finding of the study shows that today using technology is a must and the important thing is to use technology as a tool to reach goals, not as a goal to reach. It is a significant requirement that instead of spending effort to use technology, one needs to know how to use it and focus on how it could be effectively integrated into education process.

Findings regarding the views of pre-service teachers about how digital teaching materials would support learning and teaching process show that pre-service teachers' responses were as such: draw attention and raise interest, make the lessons fun, create colorful, original and effective content, allow practice and increase permanency, make learning easy, encourage active participation of students, enhance student motivation, communicate effectively, create positive classroom atmosphere. Participants also stated that such tools would enrich lessons and offer variety, make the lessons productive and efficient, integrate technology into classroom, increase student success, offer an environment away from stress and anxiety. At this point, it could be stated that pre-service teachers get bored in lessons and they need diversity in classes, so they think when they become teachers using digital teaching materials would support the process and they are eager to design and use digital teaching materials. Literature review on this topic revealed that Basal (2016) stated in his research, the participants who learnt to use Web 2.0 tools would prepare materials using these tools, thus, integrating technology into their classrooms. Besides, in his PhD dissertation Cam (2018) mentioned that lecturers and pre-service teachers thought about using these tools in the teaching process for their positive aspects.

In line with the results of the study, possible implications would be as such: these digital teaching materials that would facilitate and enrich arranging educational environment need to be introduced and encourage in-class practices. Therefore, it would raise awareness in making lessons

more effective, productive and fun. In order to do this, arrangements need to be carried out in teacher training programs, digital teaching materials need to be developed in the course Technology in Teaching and Materials Design, and while doing this pedagogical aspect needs to be given priority apart from technological aspect. Qualitative research could be carried out in order to evaluate the effect of digital teaching materials on student success. Considering technical problems in the applications, educational environment could be supported and developed accordingly.

Declaration of Deconfliction: In this study, free versions of Web 2.0 tools were used.

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