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EXPLORING PERCEPTIONS OF PRE – SERVICE TEACHERS TOWARD TECHNOLOGY COURSES IN THE TEACHER TRAINING PROGRAM IN THE CONTEXT OF HIGHER EDUCATION

Abstract. This study investigates the perceptions of pre-service teachers on the role of technology courses in their current teacher training program/curriculum, as well as the extent to which they feel prepared on their ability to integrate technology into their classrooms. A semi-structured interview was conducted with 8 pre-service senior students. In addition, an online questionnaire was sent to 40 pre-service senior students of Suleyman Demirel University. A 5 point Likert Scale questionnaire with 29 items was used. Overall, the findings revealed that pre-service teachers have a strong positive attitude toward technology and high confidence in their competency in using technology. It must be borne in mind that the study was conducted with a small sample group of participants in one particular university. Therefore, further research is needed with an extended size of the sample as well as to expand the field of study.

Keywords: pre-service teacher preparation, SDU, pre-service senior students, perceptions towards technology courses, technology skills.

Information and communication technology (ICT) has become an essential element of the school curriculum and a crucial part of the transformation in education since it provides good opportunities for the education system (Al-Mahmood and Gruba 2007; International Technology Education Association 1996; Niederhauser and Stoddart 2001; Papanastasiou and Angeli, 2008).

Technology usage for teaching and learning foreign languages gained as much attention as in other subject areas. Over twenty years ago studies were keen on exploring computer technology itself, however, now the effective utilization of technology in teaching and learning language is at the center of attention (Liu et al., 2002). Lai and Kristonis (2006) claim that language learners' achievement levels improved with the use of computer technologies.

Furthermore, computer technology has advantages in the foreign language classroom, such as motivating learners (Lee, 2000; Hamerstorm et al., 1985), increasing their self-esteem (Dunkel, 1990), giving chance for experiential learning (Lee, 2000) as well as improving specific language skills including reading (Chun and Plass, 1996; Tozcu and Coady, 2004), writing (Al-Jarf, 2004) and vocabulary learning (Liu, 1994; Tozcu and Coady, 2004). Additionally, computer technology used by teachers, in general, gives a chance to learners to acquire a foreign language as well as learn to use computers, thereby to be prepared for twenty-first century's society by using authentic tasks such as keeping electronic portfolios, writing emails, conducting on-line chats, doing online research (Wang, 2005).

Darling-Hammond and Baratz Snowden (2005) stated that many pre-service teachers tend to use the technology for their own personal purposes rather than using them properly in the classroom. The authors claim that teacher training programs have a great influence on pre-service teachers' readiness to integrate technology into their teaching. For this reason, the preparation of pre-service teachers on utilizing technology in the classroom is considered the main goal of many high education institutions. Pre-service teachers' professional knowledge, skills, and abilities are important in the process of planning the teaching process most effectively (Karaca 2015; Zakaria and Khalid 2016).

Mishra, Koehler, & Henriksen (2011) argue that in many high education institutions that train future teachers, the curriculum includes only one technology course. The authors claim that this knowledge is not enough to effectively use technology in real classroom environments. They consider the planning of successful programs that integrate technology for teacher training as a key aspect of the effective teaching process. Accordingly, preparing pre-service teachers with only technical (ICT) skills is not sufficient to successfully incorporate ICT in their future teaching, since these skills limit pre-service teachers to create a classroom where productive twenty-first-century learning takes place which is aimed to improve critical thinking, collaboration, communication, and creativity skills. Consequently, teacher training programs need to integrate technology throughout all aspects of their education to introduce pre-service teachers with technology (Corkett, Kariuki, Brackenreed, & Waller, 2011).

Studies on instructional uses of technology provide information that teachers, in general, have insufficient knowledge on how to successfully mix technology in educating learners since they appear to be restricted in variety, depth, and capacity (Khalid, Karim, Husnin, 2018). Shulman (1986) suggests that teaching will be productive when it gives a specific type of knowledge,

pedagogical content knowledge (PCK) which means "the blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction" (p. 8). Considering that generally, teachers are limited in their knowledge about technology, McCormick & Scrimshaw (2011) claim that teachers seem to use technology as "efficiency aids and extension devices" instead of instruments that can "transform the nature of a subject at the most fundamental level" (p. 47).

Pre-service teachers' self-efficacy working with technology might be boosted if teacher education programs combine technical skills and views, that are currently held in pre-service teachers, with pedagogical practice (Ajayi, 2011; Puckett, Judge, &Brozo, 2009). Lambert & Gong (2010) stated that pre-service teachers who participate in technology-enhanced programs are less worried about computers and their concerns about how to effectively use technology for teaching and learning, and their self-efficacy substantially improved. Consequently, if pre-service teachers are not confident in utilizing and incorporating technology in their future teaching, they probably will not use technology at all or will do with less effort, perseverance, and resilience (Albion, 1999).

The *aim* of this study is to investigate the perceptions of pre-service teachers on their ability to integrate technology into a learning environment based on their university courses and active internship.

Research Questions:

1 To what extent pre-service senior teachers feel prepared with technology skills to integrate technology into their future teaching?

2 What are the perceptions of pre-service teachers on the role of technology courses in their current teacher training program/curriculum?

Literature Review

2.1 TPACK Model

The initial aim of Technological Pedagogical Content Knowledge (TPACK) was to help P-12 teachers and teacher candidates to deal with the difficulties they face in integrating technology (Koehler & Mishra, 2008, 2009; Mishra & Koehler, 2006; Pierson, 1999). Shulman (1986) proposed the idea of good teaching that includes the content and pedagogy blended with the knowledge of technology hence requiring understanding and alignment of all three knowledge modes simultaneously. Koehler and Mishra (2009) presented the concept of TPACK relying on the idea that technology should have a connection with specific content areas. To ensure teachers are competent in teaching technology to the classroom, TPACK offers a comprehensive

foundation for technological knowledge and skills, along with the student knowledge, content, and pedagogy that teachers need. The framework is important for preparing pre-service teachers to be able to make rational choices when using technology in teaching specific content to a specific group. Also, this framework has a spectrum of approaches to teaching and learning, thus does not focus on one single pedagogical orientation (Tondeur, Hermans, van Braak, & Valcke, 2008).

TPACK model has a high impact on teacher training in information and communication technology (ICT) in terms of technological, pedagogical, and content knowledge. Therefore, it is important for this study to present theoretical foundations regarding the usage of technology skills in a classroom to explore pre-service perceptions of their attitude toward this. Teachers need to know the interaction of technology with other types of knowledge like pedagogical and content knowledge when they introduce technology to their classroom. Integration of technology into a classroom is a part of teaching practice and therefore, it is necessary to investigate "the theoretical foundations guiding their application and use in the classroom" (Rodríguez, Agreda Montoro & Ortiz Colon, 2019).

2.2 The Readiness of Pre-service Teachers

The theoretical review of the literature suggests that the concept of 'teacher's preparation for proficient work in its different viewpoints has been defined by many researchers. In pedagogy studies, the term 'professional readiness' is directly related to the results of vocational training and reflects the process of mastering professional knowledge, skills, and abilities necessary for mastering professional activities. Nevertheless, it should be noted that readiness for a profession cannot be limited only to the study of the procedural side of the professional-pedagogical activity. Future teachers also need a purposeful pedagogical activity to develop and form professional qualities that ensure effectiveness in the teaching profession (Bolshanina and Gribukova, 2020).

The readiness for professional activity is determined by the readiness of future teachers for the future profession (Mohamed, Valcke, and de Wever, 2016). The authors argue that for successful pedagogical activity in teacher education, conventional pedagogical training is completely insufficient. A future teacher must develop his reflexive skills and master pedagogical techniques, be able to adapt teaching methods and learn how to effectively build interaction in the classroom. In measuring readiness it is important to determine the inner strengths of the individual, his potentials, and reserves that are essential for increasing the productivity of professional activity in the future (Kravets, 2003).

2.3 Teacher Education Programs

Knowledge of teaching is different from knowledge about teaching. While it is possible to learn about teaching from theoretical perspectives, the knowledge of teaching, that is the professional content knowledge of teachers is acquired and progressed by active participation in teaching (Shulman, 1987).
The research by Yildirim (2008) suggests that there were struggles in finding and implementing successful and productive strategies for the preparation of pre-service teachers on integrating technology in their future teaching. Moreover, as stated by Cuban (2001) even though teachers use computers outside of the classroom extensively, school culture and instructional practices have not included technology into regular instructional practices.

Teacher education programs often disregard technology (Chien, Chang, Yeh, & Chang, 2012), thereby being criticized for not providing pre-service teachers with enough knowledge of how to use technology in teaching practice

(Montgomerie and Irvine 2001; Wilhelmsen et al. 2009; Chien et al. 2012; Tømte, Kårstein, and Olsen 2013). Research reveals that beginning teachers do not feel well prepared to utilize technology successfully in their teaching (Sang et al. 2010). Consequently, only a small number of beginning teachers managed to find various and productive ways of using technology, creating a student- centered learning environment (Bang & Luft, 2013; Gao, Wong, Choy, & Wu, 2011). In line with this, the research by Jing Lei (2009) presented that pre-service teachers were very proficient in using social networking resources, however, they lacked experience in Web 2.0 tools for classroom instruction. The result of Jing Lei's (2009) study suggested that many pre-service teachers were not proficient with more advanced technologies.

2.4 Digital Literacy in Teacher Education

Due to the continuous evolution of digital technology and society's various cultural and societal landscapes, reaching a singular digital literacy definition is challenging (Helsper, 2008).

Hagel (2012) stated digital literacy as a set of knowledge and skills that are necessary for the effective use of digital technologies and Internet resources. It increases our knowledge of digital technologies and helps to successfully integrate technologies into the educational process.

As for teacher education, it has generally involved the preparation of students for the use of digital tools and systems that are appropriate for educational settings (Admiraal et al. 2016). This approach assumes that doing this, "equips pre-service teachers with a set of basic competencies they can transfer to their future classroom practice" (Admiraal et al. 2016, p. 106). These approaches are typically focused on specific skills or topics, and they do not take into account the various socio-cultural contexts where technology use occurs

(Gruszczynska et al. 2013; Lim et al. 2011; Lund et al. 2014; Ottestad et al. 2014). Others have identified shortcomings in their approach that ignore wider considerations including ethical, digital citizenship, health, wellbeing, safety and social/collaborative elements (Foulger et al. 2017; Hinrichsen and Coombs 2013). The reconceptualisation of teacher education programs has suggested that the emphasis on digital literacy should be abandoned, and that broader digital competency models should be used to support the needs of future teachers.

Therefore, taking into consideration the above-mentioned studies, our research paper aims: (1) To examine whether pre-service teachers in the faculty of Humanities at SDU, have been prepared with sufficient knowledge and technology skills for teaching. (2) To seek suggestions for improvement of the current practice.

Methodology

3.1 Type of Research

In achieving the objectives of this study, a mixed-method, which includes quantitative and qualitative approaches, was used to collect the necessary data. This is an exploratory case study that aims to study the perceptions of pre-service teachers toward technology usage in the classroom. The exploratory case study is used when there is a need for detailed and quality information that can lead to new problems that should be addressed.

The research paper investigates to what extent pre-service teachers feel prepared with technology skills to utilize technology in their classrooms and their perceptions toward ICT courses in the teacher education program.

The quantitative data of the study is analyzed using Excel spreadsheets, while the qualitative data were analyzed using thematic analysis in order to identify the common themes that appeared during the interviews.

3.2 Data Collection

Primary qualitative and quantitative data were examined through interview and questionnaire. No experiments were conducted, so, there are no pre-and post-tests.

3.3 Participants

The study was conducted with the samples selected from 48 senior students both female and male gender, at SDU, the academic year 2020-2021. 40 participants took the questionnaire with 29 items in order to find the answer to the RQ (1). 8 senior students were asked in an individual interview that addresses investigating the answer to the RQ (2).

3.4 Research Instruments

The instruments that were selected for this study are the questionnaire and the individual interview.

3.4.1 Interview.

In order to gain a better insight into the possibilities for improving the results of the study, questions for an interview were adapted. Moreover, it aimed to fill uncovered perceptions and opinions of the participants. The researchers selected participants by considering their level of knowledge. The interview was in a written and structured form since the researchers are aware of all aspects of the study. This interview was conducted via WhatsApp and the responses were received in written form.

3.4.2 Questionnaire.

The researchers conducted a questionnaire to measure the objective relation of the participants toward technology courses in the teacher education programs. The questionnaire that is used in this study is a 5 point Likert Scale which was adapted from the original 7-point Likert Scale format, ranging from 'Strongly Agree' to 'Strongly Disagree'. There were 20 questions in the questionnaire. It was made in Google Forms so that the results are automatically demonstrated in an Excel Sheet so that it is convenient for making the statistics effortlessly. In addition, the questionnaire was conducted online, through WhatsApp, which is advantageous for a few reasons. First, it is not time-consuming because the participants were given a week to complete the questionnaire. Second, it creates a free environment for the participants so that they can fill in the form without any pressure.

3.5 Consent Letter

Senior students at SDU were introduced to the consent letter where they learned about the purpose and process of the current research paper. They were aware of the letter before giving an individual interview and taking the questionnaire as well. This consent letter states that the names of participants will be anonymized in the reporting of the results and all information will remain confidential.

3.6 Validity and Reliability

The interview questions were adapted by the researchers and meticulously checked by the scientific supervisor. The answers of the respondents were not distorted in order to achieve accurate results. Also, to keep the high validity in the study the researchers' personal attitudes, biases and feelings were thoroughly minimized. Since the responses were taken in audio and written forms the researchers cannot misinterpret the data of the study.

The questionnaire was also checked by the scientific supervisor. In addition, it was completely anonymous so that the participants were asked to answer honestly. Moreover, the researchers cannot change the responses since all the answers are automatically represented in graphs and Excel sheets.

Results

The findings of this study are displayed in two parts: (1) interview analysis and (2) questionnaire analysis.

4.1 Qualitative Findings

The interview had 7 semi-structured questions and was divided into three categories: (a) background characteristics, (b) technology use, (c) influence of pre-service training.

1. How did/do you use technology in your classroom and what for?

The data demonstrates that all participants use technology for interactive learning, that is-to make lessons more interesting and entertaining. 4 of the participants, AR 1, AI 2, SM 5, AL 7, most of the time conduct online lessons, therefore technology is an inseparable part of their teaching. Participants, AI 2, KD 3, SM 5, Erke 8, use web platforms and resources to play games because they believe that it is important to utilize gamification for the engagement of the students. Majority of the interviewees' prefer using Kahoot, Quizlet, and Quizizz. For instance, AR 1 uses Quizlet for vocabulary, Kahoot and Quizizz for revision; AI 2 tries to integrate interactive platforms such as Learning Apps, Quizizz, and Jamboard; Erke 8 makes use of Kahoot and Quizizz for tests. In addition, participants shared that they use Youtube videos for songs and dance exercises, karaoke for listening, web platforms to demonstrate media materials and make digital flashcards, PowerPoint Presentation (PPT) and Google Slides for introducing the themes and memorization. Finally, SM 5 shared having advanced knowledge of technology and the ability to use it in various ways.

2. Could you describe a lesson in which you used technology to support your teaching practice?

The findings revealed that participants mostly used Kahoot, Quizlet, PPT, and Google Slides to support their teaching practice. For example, LU 4 and Erke 8 utilized Kahoot to check understanding of the topic and KD 3 played Kahoot and Quizlet, only in the beginning or in the end, to revise and reinforce the taught vocabulary/grammar/reading passage. The interviewees, LU 4, SM, and AD 6, usually started their lessons by turning on an interactive whiteboard (IWB) and connecting IWB to their personal laptops which had an internet connection. After that they showed presentations, LU 4 used Google Slides while SM 5 and AD 6 PPT, as visual for introducing grammar rules and pictures as lead-ins. 2 of the participants, AR 1 and AI 2, demonstrated the ability to integrate technology into the whole lesson successfully. AR 1 started the offline lesson by singing a song from YouTube with students as a warm-up which develops pronunciation, accent, and rhythm. Then she introduced new vocabulary with Quizlet cards and did drill exercises on this platform. In the

middle of the lesson to warm up the students, she used YouTube for physical activities. Finally, at the end of the lesson AR 1 distributed handouts which are taken from the British Council or other websites, or alternatively send a Quizizz as homework. SM 5 uses a similar method to AR 1, for instance, usage of the music with lyrics on to learn new words and improve vocabulary. Meanwhile, AI 2 conducted an online lesson via Zoom. The combination of technology and the lesson was successful. The participant explained the theory by using Google Jamboard virtual whiteboard, then WordWall to check their understanding and, ultimately, a video fragment from a popular cartoon on iSLCollective to explain how the taught rules work in context.

3. What is the added value (an **improvement** or **addition** to something that makes it **worth** more) of using technology to support your teaching practice?

The results indicate that all participants hold the opinion that technology use makes lessons: (a) more interactive so students do not get tired quickly, (b) interesting and exciting, (c) way easier to conduct and create a relaxed atmosphere for students, consequently they will actively participate in class. AD 6, AI 2, and LU 4 shared that usage of technology improves student-teacher relationships, makes the learning process more personalized, and allows teachers to track the progress of every student. AD 6 believes that students better remember new facts and information which directly influences their academic performance. According to SM 5, “Modern world requires modern technology-based classes”, and AR 1, “Technology makes you closer to students because technologies are a part of their life.”

4. Based on your own experience, what are the good things about integrating technology into classrooms? What are the problems?

The findings disclosed interesting ideas related to this one. Some common benefits of integrating technology into the classroom are: 1) it saves so much physical energy; 2) it gives lessons more entertaining content; 3) increases teamwork and collaboration, as mentioned LU 4, “inexperienced students can get help from experienced users of technology”; 4) additional materials and new sources of information that can be useful and helpful. LU 4 says that the more the teacher uses technology, the more students feel that the teacher is considering their interests. Also, Erke 8 expressed that students learn how to make presentations and use new technologies together with the teacher and that we need to adapt faster to technologies and to accept them for useful purposes. According to participants there are common problems such as 1) not all students have devices to use in the lesson; 2) sound in videos might not work; 3) poor quality internet can occur; 4) inability to control the attention span of the

students; 5) no electricity. AD 6 and AR 1 shared thoughts that sometimes it is not easy to find reliable material among tons of available materials and choose appropriate activities related to the topic, moreover, it requires time. Consequently, AR 1 and AI 2 think that students can easily get used to technologies and demand them every lesson. Lastly, AI 2 and SM 5 consider low ICT literacy of students, that is-lack of ICT knowledge, as the main problem because it makes the learning process harder and the teacher has to think of something different on hand.

5. Do you believe that your pre-service education provided you with the necessary competencies and skills to integrate technology into your teaching practice?

6. of the participants believe that they learned quite enough about technology in order to, 1) be an EFL teacher at an ordinary school, 2) use redesigned Skype, 3) use e-resources. However, 2 of the participants expressed disagreement with this one. For instance, AR 1 thinks that the curriculum could have had more preparation for online teaching and how to integrate technologies. Consequently, the interviewee says that in terms of using technologies university's pre-service education made a marginal impact. Finally, AI 2 shared:

No. All of the platforms, skills, and activities required for online teaching were learned through practice and outside sources by myself. My pre-service education did not prepare us for virtual teaching at all. I can not recall any course which specifically gave us at least adequate theoretical knowledge on online platforms. For instance, I was not even aware of Zoom and could not use Skype for education before the pandemic. We had a course of ICT, however, it gave us too general knowledge on using applications as Excel but it was not a productive course for specifically future educators.

7. What learning experiences from your pre-service education were the most meaningful for helping you to integrate technology into your teaching practice? The data demonstrated that two courses, ICT and Instructional technology and materials development, helped the participants to get acquainted with Google Slides, Google Spreadsheets, PPT, Prezi, Zoom, Webex and to find interesting games and create a personal website. In addition to these courses, AR 1 added one more course called Critical Thinking where students were taught how to identify reliable materials and how to carefully choose websites. Erke 8 says that people remember information well that is shown in practice, therefore she remembered most from the teachers' methods used during the lessons rather than the usual theory. According to AI 2, Virtual peer teaching classes were the most effective and productive since they allowed students to see how virtual classrooms work. Before these courses, the interviewee knew only how to join

classes on online platforms like Zoom and had no knowledge of using it for teaching purposes. However, then she had the opportunity to conduct a real online lesson where she learned how to use the platform's functions for teaching. Moreover, AI 2 faced a challenge, that is-to humanize the classroom and transmit the energy and enthusiasm throughout the screen.

8. What would you add to/change from your pre-service education to feel better prepared to integrate technology in your teaching practice?

One of the participants believes that what the university does for students' technological competence is quite enough for teaching while others shared that there is a need for a change. The results suggested the following changes for pre-service education because only one course cannot be enough to integrate technology into the classroom: 1) more updated courses; 2) more practice rather than simple theory; 3) courses on constructing the lesson and its components; 4) introduce students to the platforms for education and teaching. AI 2 shared an interesting idea on this one - adding a separate practical course of Virtual teaching to the undergraduate program of pre-service teachers. She believes that the content of the course should be divided into two parts. The first part should focus on technological tools and train students to create and adapt assignments into virtual format through educational online platforms. The second part should focus on the psychological side and give proper knowledge on keeping motivation in online classrooms, humanizing digital class, and the mental well-being of students and teachers. AR 1 expressed an impressive view as well.

More knowledge about online education and technologies, probably additional courses or programs. And this program should be from 1-2 years of education, not only last semester. I wish we could have more practical knowledge about technologies, maybe peer teaching lessons or teachers' real cases as an example.

4.2 Quantitative Findings

This part presents the overall results taken from the questionnaire. At the time of this questionnaire, the participants had little classroom teaching experience. The questionnaire describes pre-service teachers' beliefs about integrating technology, their confidence level, and the technology proficiency level. It contains 2 questions of general information, 7 questions (statements) used to measure beliefs of participants, 9 questions (statements) to measure their confidence level, and 11 questions (statements) of the technology proficiency level.

4.2.1 General information.

Figure 1

As it is illustrated in the circle graph, there were a total of 20 respondents. The vast majority (97.5%) of respondents had any experience in teaching English and others (2.5%) had no experience.

Figure 2

Teaching experience

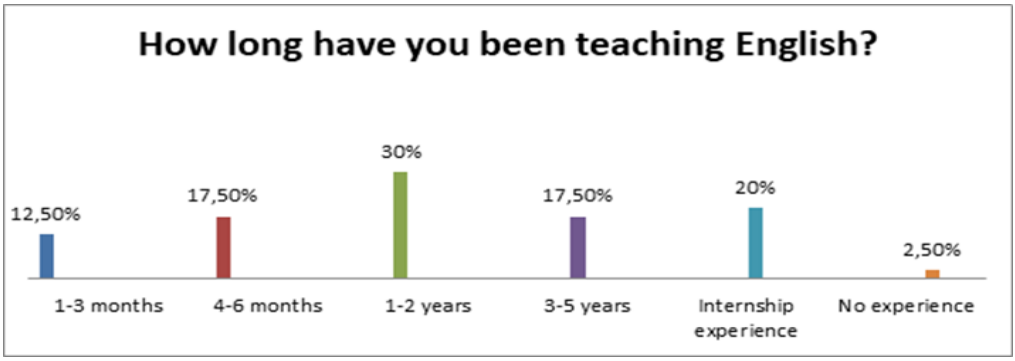

Figure 1 shows the respondents' teaching experience. Overall, it is seen that most of the senior students at SDU (30%) had 1-2 years of experience in teaching English, while 20% of them had this experience during their internship. This chart also demonstrates that respondents (12.5%) had at least 1-3 months experience of teaching, while some (17.5%) had about 3-5 years. The rest of the respondents (17.5%) had 4-6 months of teaching experience. Only one respondent (2.5%) had no experience in teaching English.

4.2.2 Beliefs

This data presents pre-service teachers' beliefs towards technology. There were 7 statements with a degree of agreement on a scale of 1-5, strongly disagree, disagree, neutral, agree, and strongly agree.

Table 1

Beliefs

	Strongly Disagree/ Disagree	Neutral	Strongly Agree/ Agree
1. Computers are generally reliable.	7.5%	17.5%	75%
2. Computers and related technologies will isolate students from one another.	20%	60%	20%
3. I am interested in computers and related technologies.	5%	2.5%	92.5%
4. I am interested in learning new technologies.	2.5%	-	97.5%
5. I am interested in learning technologies that will help my teaching in the future.	5%	10%	85%
6. I believe that technologies can help me teach better.	2.5%	7.5%	90%
7. I believe that technologies can help my students learn better.	2.5%	2.5%	95%

This table reveals that most respondents (75%) believe that computers are generally reliable, and also they (92.5%) are interested in computers and related technologies. Only 5% of respondents are not interested in computers and related technologies, and they (5%) disagree with the statement that learning technologies will help them teach in the future. The vast majority (92.5%) believe that technology can help them and their students learn better, while others (2.5%) think vice versa. 20% of participants are of the opinion that computers and related technologies will isolate students from one another, however, a similar percentage of them disagree with this statement.

4.2.3 Confidence

Table 2 below demonstrates 7 statements with a degree of agreement on a scale of 1-5, strongly disagree, disagree, neutral, agree, and strongly agree, to show pre-service teachers confidence level to integrate technology.

Table 2

Confidence

	Strongly Disagree/ Disagree	Neutral	Strongly Agree/ Agree

1. I feel confident in using technology in my learning	17.5%	2.5%	80%
2. I feel confident in using technology to teach.	22.5%	12.5%	65%
3. I feel comfortable using technology.	5%	10%	85%
4. I do well with computer technologies.	2.5%	12.5%	85%
5. I feel confident in utilizing a drill and practice programs (i.e. educational software that engages students in multiple-choice, true and false, or "worksheet" type of questions) in my instructional practices with students.	10%	7.5%	82.5%
6. I feel confident in utilizing basic authoring applications such as word processors, spreadsheets, and graphic organizers in my instructional practices with students.	10%	25%	65%
7. I feel confident in utilizing advanced authoring applications such as web publishing software, presentation software (i.e. PowerPoint and/or collaborative groupware in my instructional practices with students.)	10%	12.5%	77.5%
8. I feel confident in utilizing the World Wide Web in my instructional practices with students.	17.5%	17.5%	65%
9. I feel confident in utilizing networked communication resources (i.e. e-mail, social media, school/university websites, mobile apps, etc.) in my instructional practices with students.	15%	2.5%	82.5%

Table 2 shows that pre-service teachers (80%) feel confident in using technology significantly more than those (17.5%) who do not feel confident. Overall, it can be seen that statements number 3 and 4 show the highest percentage of respondents who agree with these statements, however, the same statements display the lowest percentage of respondents in the options of "Disagree" and "Strongly Disagree". In statements, number 2, 6, and 8, most

respondents, 65% out of 100% answered that they "Agree" and "Strongly Agree", while less than 25% of respondents do not agree with them. The percentage of respondents (82.5%) who chose the options "Agree" and "Strongly Agree" in statement number 5 is the same as in statement number 9. Statements number 1 and 9 (" I feel confident in using technology in my learning", "I feel confident in utilizing networked communication resources") indicate the lowest number of pre-service teachers who are "Neutral" about these statements, whereas statement number 8 (I feel confident in utilizing the World Wide Web) has the highest percentage.

4.2.4 Proficiency

Table 3 illustrates how proficient pre-service teachers felt about technology integration. There were 11 statements on a scale of 1-5, no experience, beginner, moderate, substantial and expert.

Table 3

Proficiency

	NoE	B	M	S	E
1. Setting up a video conference and using digital video cameras	-	7.5%	17.5%	52.5%	22.5%
2. Editing pictures, audio, and video files	-	7.5%	32.5%	30%	30%
3. Publishing pictures (e.g., on Flickr.com), audio files, and video files (e.g., on Youtube.com)	5%	-	17.5%	55%	22.5%
4. Scanning and editing documents	-	12.5%	7.5%	32.5%	47.5%
5. Using word processing programs (e.g., Microsoft Word, WordPerfect)	-	10%	12.5%	32.5%	45%
6. Using presentation software (e.g., PowerPoint, Google Slides, Prezi)	2.5%	-	5%	42.5%	50%
7. Using electronic spreadsheets (e.g., MS Excel, Google Sheets)	2.5%	15%	7.5%	57.5%	17.5%
8. Managing, storing and backing up files on servers, CDs, zip disks, etc.	12.5%	12.5%	25%	32.5%	17.5%
9.Finding and evaluating information from Web searches	5%	2.5%	22.5%	45%	25%

10. Searching electronic library databases for books, articles, and other resources	5%	15%	20%	42.5%	17.5%
11. Using Web 2.0 tools in the classroom (e.g., Skype, Storybird, Wordle, etc.)	5%	22.5%	25%	25%	22.5%

Table 3 above demonstrates that half of the pre-service teachers (50%) were "Experts" in statements number 4 and 6, whereas statement number 8 has the highest "No experienced" respondents than in other statements. The vast majority of respondents (32.5%) had a "Moderate" level of proficiency in statement 2, however, statement number 6 shows that only 5% out of 100% were "Moderate". Statements 1, 2, 4, and 5 do not have "No experienced" pre-service teachers, while statements 3 and 6 do not have "Beginner" level respondents. Overall, we can see that statement number 7 shows that nearly 58% of respondents had a "Substantial" level of proficiency, whereas statement 11 has the lowest percentage of respondents who were at the same level (25%).

Discussion

The overall results indicate that pre-service senior teachers at SDU substantially feel prepared in using technology and teaching with technology. The data suggests that the respondents are considerably confident and proficient in integrating technology into their classrooms. Consequently this finding answers the research question of the extent to which pre-service seniors feel prepared with technology skills to integrate technology into their future teaching. The study demonstrated weak results in the second research question - the perceptions of pre-service senior teachers on the role of technology courses in their current teacher training program/curriculum. The reason is that only three questions of the interview were aimed to find the data for the second research question while the other four were about background characteristics and technology use.

Overall, the findings of this study could answer research questions 1 and 2 and presented results adequately. However, unexpected results appeared as well. It is somewhat surprising the responses of the interviewees' were controversial on their perceptions about technology in their teacher training program. A number of respondents were quite satisfied with what the university program provides whereas others consider that one ICT related course cannot provide students with adequate knowledge. Interesting facts were given by Mishra, Koehler, & Henriksen (2011). They stated that in many high education

institutions that train future teachers, the curriculum includes only one technology course. The authors claim that this knowledge is not enough to effectively use technology in real classroom environments.

The questionnaire data suggests that the vast majority of respondents have a positive attitude towards computers and related technologies. They believe that technologies help them teach better and help their students learn better. The majority of pre-service teachers at SDU feel prepared with the necessary knowledge to integrate technology into their future teaching. It was discovered through the questionnaire that most respondents feel confident in utilizing drill and practice programs, and networked communication resources in their instructional practices with students as well. In addition, both interview and questionnaire data reveal that respondents expertise to utilize presentation softwares such as PowerPoint, Google Slides, Prezi. Nevertheless, many of them have little experience in using some of the Web 2.0 technologies with great potential for classroom application, such as Skype, Storybird, Wordle. It means that respondents are not well-prepared to use recently developed technologies. This result supports Jing Lei's (2009) claims that pre-service teachers are good at using basic technologies, however, they are not proficient in utilizing advanced technologies.

5.1 Limitations

The senior students' inclination toward technology integration in their future classrooms could be of great importance for the university to improve in relation to the ICT courses. While this study does have important implications for the university's pre-service teacher training programs, a few limitations need to be considered. The first limitation was that the current study relied exclusively on student perceptions of technology courses; no measure of actual skills was assessed. Obviously, an examination of attitudes should normally precede research that attempts to measure direct integration, as the identification of specific attitudinal pros and cons will help better define the skills that are being targeted. While it is reasonable to believe that pre-service teachers who hold positive attitudes toward technology will be more likely to ultimately integrate these technologies, this assumption requires an inference that was not directly examined within the present research design. Another limitation was that the sample that was examined was intentionally delimited to moderately sized, one particular university. It is possible that the characteristics derived from the present sample may not generalize to pre-service teachers who attend other universities. It is recommended to use a larger sample size with an extended number of universities in order to gain more accurate data and to make a research paper more valid and reliable. It is also recommended that future research

beginto examine instances of actual technology integration.

Conclusion

In general, this study was conducted to yield some insights related to the perceptions of pre-service teachers at SDU and to find the extent to which they feel prepared on their ability to integrate technology into a learning environment. The difference of this study from other studies is that this study addressed one particular university and may not be generalized to other higher education contexts. Moreover, the research is aimed to provide reasons that influence whether students have bad or good perceptions of technology courses. Based on a quantitative and qualitative analysis of this study, it can be concluded that pre-service teachers at SDU feel well-prepared to utilize technology successfully in their future teaching. The results reveal two different attitudes of respondents to technology courses in their current teacher training program/curriculum. Some pre-service teachers stated that the teacher training program provided them with sufficient knowledge of integrating technology into their classrooms; others, on the contrary, claimed that only one course was not enough for teaching and suggested including more updated courses that improve their technology skills. According to this study, findings are unique for particular students, that is - students of SDU. The results of this study might be helpful in designing a teacher training program, namely a curriculum, for pre-service teachers at SDU. Also, the research with a larger sample size with a slight change in context may provide different results. For that reason, further studies should be taken into account to expand the number of participants and include more and various universities.

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ЖОҒАРЫ БІЛІМ БЕРУ КОНТЕКСТІНДЕГІ МҰҒАЛІМДЕРДІ ОҚЫТУ БАҒДАРЛАМАСЫНДАҒЫ ТЕХНОЛОГИЯ КУРСТАРЫ БОЙЫНША ДАЯРЛЫҚ МҰҒАЛІМДЕРІНІҢ ҚАБЫЛДАУЫН ЗЕРТТЕУ.

Аңдатпа. Бұл зерттеу мұғалімдерді даярлаудың қазіргі бағдарламасындағы/оқу жоспарындағы технология курстарының рөлі туралы, сондай-ақ олардың технологияны сыныптарына кіріктіру қабілетіне қаншалықты дайын екендіктерін сезіну дәрежесін, сонымен қатар болашақ мұғалімдердің қабылдауын зерттейді. Жоғары курстың 8 студентімен жартылай құрылымдық сұхбат жүргізілді. Сонымен қатар, Сүлеймен Демирел университетінің 40 жоғары курс студенттеріне онлайн сауалнама жіберілді. 29 элементтен тұратын 5 баллдық Likert шкаласының сауалнамасы қолданылды. Тұтастай алғанда, нәтижелер мектепалды

даярлық мұғалімдерінің технологияға деген позитивті көзқарасы және олардың технологияны қолданудағы құзыреттілігіне жоғары сенімі бар екенін көрсетті. Зерттеу бір университетте қатысушылардың шағын іріктеу тобымен жүргізілгенін есте ұстаған жөн. Сондықтан іріктеудің кеңейтілген көлемімен, сондай-ақ зерттеу өрісін кеңейтумен қосымша зерттеулер қажет.

Түйін сөздер: болашақ мұғалімдерді даярлау, СДУ, жоғары курс студенттері, технология курстарын қабылдау, технология дағдылары.

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ИССЛЕДОВАНИЕ ВОСПРИЯТИЙ БУДУЩИХ УЧИТЕЛЕЙ КУРСОВ ПО ТЕХНОЛОГИЯМ В ПРОГРАММЕ ПОДГОТОВКИ УЧИТЕЛЕЙ В КОНТЕКСТЕ ВЫСШЕГО ОБРАЗОВАНИЯ.

Аннотация. В этом исследовании исследуется восприятие будущими учителями, готовящимися к работе, роли курсов технологии в их текущей программе подготовки учителей, а также степень, в которой они чувствуют себя подготовленными к тому, чтобы интегрировать технологии в свои классы. Было проведено полуструктурированное интервью с 8 студентами старших курсов. Кроме того, онлайн-анкета была разослана 40 студентам старших курсов Университета Сулеймана Демиреля. Был использован опросник по 5- балльной шкале Лайкерта, состоящий из 29 пунктов. В целом, результаты показали, что преподаватели, готовящиеся к работе, имеют сильное положительное отношение к технологиям и высокую уверенность в своей компетентности в использовании технологий. Следует иметь в виду, что исследование проводилось с небольшой выборочной группой участников в одном конкретном университете. Следовательно, необходимы дальнейшие исследования с увеличенным размером выборки, а также для расширения области исследования

Ключевые слова: предварительная подготовка преподавателей, SDU, старшие курсы университета, восприятие технологических курсов, технологические навыки.

Appendices

Appendix A

Interview questions:

1 How did/do you use technology in your classroom and what for?
2 Could you describe a lesson in which you used technology to support your teaching practice?
3 What is the added value of using technology to support your teaching practice?
4 Based on your own experience, what are the good things about integrating technology into classrooms? What are the problems?
5 Do you believe that your pre-service education provided you with the necessary competencies and skills to integrate technology in your teaching practice?
6 What learning experiences from your pre-service education were the most meaningful for helping you to integrate technology in your teaching practice?
7 What would you add to/change from your pre-service education to feel better prepared to integrate technology in your teaching practice?

Appendix B

Questionnaire:

General information

1 Do you have any experience in teaching English?
2 If you answered "Yes", how long have you been teaching English?

Beliefs

This data presents pre-service teachers' beliefs towards technology. There were 7 statements with a degree of agreement on a scale of 1-5 ("Strongly Disagree", "Disagree", "Neutral", "Agree", and "Strongly Agree").

1 Computers are generally reliable.
2 Computers and related technologies will isolate students from one another.
3 I am interested in computers and related technologies.
4 I am interested in learning new technologies.
5 I am interested in learning technologies that will help my teaching in the future.
6 I believe that technologies can help me teach better.
7 I believe that technologies can help my students learn better.

Confidence

Table 2 above demonstrates 7 statements with a degree of agreement on a scale of 1-5 (“Strongly Disagree”, “Disagree”, “Neutral”, “Agree”, and“Strongly Agree”) to show pre-service teachers confidence level to integrate technology.

1 I feel confident in using technology in my learning.

2 I feel confident in using technology to teach.

3 I feel comfortable using technology.

4 I do well with computer technologies.

5 I feel confident in utilizing drill and practice programs (i.e. educational software that engages students in multiple-choice, true and false, or “worksheet” type of questions) in my instructional practices with students.

6 I feel confident in utilizing basic authoring applications such as word processors, spreadsheets, and graphic organizers in my instructional practices with students.

7 I feel confident in utilizing advanced authoring applications such as web publishing software, presentation software (i.e. PowerPoint and/or collaborative groupware in my instructional practices with students.)

8 I feel confident in utilizing the World Wide Web in my instructional practices with students.

9 I feel confident in utilizing networked communication resources (i.e. e-mail, social media, school/university websites, mobile apps, etc.) in my instructional practices with students.

Proficiency

How would you rate your proficiency in the following skills? Please check your response on a scale of 1 to 5. Thanks.

1 =No experience

2 = Beginner (little skill)

3 = Moderate (can use some already-prepared applications, or can perform the task with help)

4 = Substantial (can use and create/customize many applications on my own, or can perform the task on my own)

5 = Expert (could teach others how to use and create/ customize many applications, or can teach others how to perform the task)

1 Setting up a video conference and using digital video cameras

2 Editing pictures, audio, and video files

3 Publishing pictures (e.g., on Flickr.com), audio and video files (e.g., on Youtube.com)

4 Scanning and editing documents

5 Using word processing programs (e.g., Microsoft Word, WordPerfect)

6 Using presentation software (e.g., PowerPoint, Google Slides, Prezi)

7 Using electronic spreadsheets (e.g., MS Excel, Google Sheets)

8 Managing, storing, and backing up files on servers, CDs, zip disks, etc.

9 Finding and evaluating information from Web searches

10 Searching electronic library databases for books, articles, and other resources

11 Using Web 2.0 tools in the classroom (e.g., Skype, Storybird, Wordle, etc.)

Appendix C

Consent Letter

Consent Form for the TFL senior students' participation in a research study entitled "Preparation of pre-service teachers: the voices of the students in relation to technology. A Descriptive Case Study of Senior Students at SDU".

Dear Participant,

You are invited to show your honest attitude towards teaching English as Foreign Language; to share your experience of teaching EFL if there is any. We would like to thank you in advance. We genuinely appreciate your contribution to the study. Please spend a few moments looking through the letter and sign below in agreement.

Purpose:

The purposes of the study are:

1 to investigate the perceptions of pre-service senior teachers on their ability to integrate technology into a learning environment based on their university courses and active internship;

2 to study pre-service senior teachers' beliefs about feeling prepared with technology skills to integrate technology into their future teaching.

Participant selection:

You were selected as a participant in this paper because you are a TFL senior student/an EFL teacher. Please note you are not criticized whether you are saying right or wrong. We are interested in your motivation towards teaching and we would like to receive honest information.

Confidentiality and privacy:

Researchers and supervisors highly respect the privacy policy. Therefore, any piece of information selected for this paper will remain confidential and will be disclosed only with your permission as well as your name will remain anonymous. The data is accessible only to the research personnel. All of the materials: audio/video recordings, interview answers, questionnaire responses will not be sent to any third party. All information that identifies you will be kept confidential and stored in a secure file that will be password protected. The primary researchers will keep all the information provided by you confidential to the greatest extent possible. By signing this form, you are authorizing access to your questionnaire and interview by research personnel. Such access will be used only for purposes of verifying the authenticity of the information collected for the study, without violating your confidentiality, to the extent permitted by applicable laws and regulations.

Refusal/Withdrawal:

Your decision concerning your participation in this study is voluntary and will not affect relationships between the research personnel and you. If you do not want to participate in this study anymore, you can withdraw your consent and discontinue participation at any time.

Contact:

If you have any questions about this study, you can contact us, Primary Researchers: BerikkyzyKanshaiym, [Student of Suleyman Demirel University], +7 747 177 3040 (cell phone), or at 170302028@stu.sdu.edu.kz ; Netaliyeva Gulnara [Student of Suleyman Demirel University] +7778 890 3437 (cell phone), or at 170302069@stu.sdu.edu.kz .

Transcriptions from the interview with pre-service teachers SDU:

"Not really, I remember we had a Critical Thinking course and we had IT and materials development, and somehow it helped, but I think the curriculum could have had more preparation for online teaching and how to integrate technologies as well. So in terms of using technologies our pre-service education made a marginal impact."

"It should 'match' your lesson. While preparing activities, I had troubles in choosing appropriate activities for my topic. It required time. Moreover, I never used technologies in a different way, only as a tool to show presentation. So, I think it would make my life easier, if there was one list of tools that I can integrate in specific topic. For instance, ordinal numbers."

"I have nothing to add since I believe that what our university does for our technological competence is quite enough for teaching."

"No. All of the platforms, skills and activities required for online teaching were learnt through practice and outside sources by myself. My pre-service education did not prepare us to virtual teaching at all. I can not recall any course which specifically gave us at least adequate theoretical knowledge on online platforms. For instance, I was not even aware of Zoom and could not use Skype for education before the pandemic. We had an ICT course of ICT, however it gave us too general knowledge on using applications as Excel but it was not a productive course for specifically future educators." "In ICT course in sophomore year I learned many new things which I am using right now, and will be helpful in the future too. It was about the Google Spreadsheet use which is significantly valuable for me."

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