

## CHAPTER IV

### FINDINGS AND DISCUSSION

This chapter elaborates the findings and discussion which is about the perceptions of EFL pre-service teachers' TPACK development during field teaching practice especially their Technological Knowledge (TK). The research finding provides the data and for the discussion presents the analysis of the research finding.

#### **4.1 Findings**

This study aimed at describing a group of EFL pre-service teachers to provide an understanding of their perceptions of TPACK specifically Technological Knowledge in their teaching in the classroom. This will provide information to lecturers or universities to take advantage of TPACK especially Technological Knowledge in their teaching process. This study used written reflection for the instrument template consisting of a series of questions and blank spaces where participants write their responses (Barkhuizen, 2014). The reflection of the study was divided into 5 questions related to one of the concepts of the TPACK framework which is Technological Knowledge. Technological Knowledge (TK) becomes one of the frameworks of TPACK that is implemented to investigate the EFL pre-service teachers' professional development in integrating technology into their teaching practice.

The findings of this study reported the results of data analysis of reflection accounts from three EFL pre-service teachers as the participants in order to

explore how their perceptions about TPACK development specifically to their technological knowledge during field teaching practice. With regards to Technological Knowledge, this study revealed that most of the participants tend to give a positive perception of their Technological Knowledge development during field teaching practice. Based on the result of the data analysis, there were several main themes emerged namely: (1) The basic technological knowledge of EFL pre-service teachers', (2) The easiness of EFL pre-service teachers' in operating technology, (3) The EFL pre-service teachers' mastery of technological skills, (4) The importance of using technology in teaching, and (5) The importance of having technological knowledge.

**Table. 4.1** Table of Finding

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**EFL pre-service Teachers' Perceptions of Technological Knowledge Development during Field Teaching Practice**

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1. The Basic Technological Knowledge of EFL pre-service Teachers'
2. The Easiness of EFL pre-service Teachers' in Operating Technology
3. The EFL pre-service Teachers Mastery of Technological Skills
4. The Importance of Using Technology in Teaching
5. The Importance of Having Technological Knowledge.

#### **4.1.1 The Basic Technological Knowledge of EFL pre-service Teachers'**

This section described the research findings showed a perception of EFL pre-service teachers' about their basic technological knowledge during field teaching practice. Two of three participants expressed their perceptions by providing various reasons that supported their arguments to be clearer.

The following were several statements in direct quotations mentioned by the three participants in their reflection writings. In order to know the basic technological knowledge of EFL pre-service teachers', the researcher uses written reflection. Reflection was carried out by three participant researchers. Based on the reflection, it is known that the EFL pre-service teachers' already have a basic technological knowledge that they have got in college in terms of how to run software products such as an operating system, a software application, or an automated web design tool.

This is in line with the opinion of P1, P2, and P3, which state their basic technological knowledge during field teaching practice in the classroom. This is illustrated in the reflections' answer:

“I already have basic knowledge of TPACK especially about technological knowledge which I have gained in the learning process on campus through courses that I have studied before, especially technology itself. I learned a lot about the basics of using a computer such as learning Ms. Word, Excel, Power Point, etc. Regarding Ms. Excel, I can use it in evaluating student learning outcomes. Meanwhile, Ms. Power Point itself, I can use power point as a visual tool to display materials or teaching materials in class” (P1)

The first participant stated that she already has the basic technological knowledge during her engaged to the field teaching practice in school. She said

that she had learned about technological knowledge through the course about basic technology that she learned in college. She assumed that the basic technological knowledge that she had totally came from her experience when learned about technology course in college. In addition to that, the basic technological knowledge that she had learned including how to use computer, Microsoft word, excel, power point, etc. She also added that, all of the knowledge about the basic technology really helps her in order to support her teaching activity in the classroom during field teaching practice. For example, she can take the advantage of the use Microsoft power point in delivering the material that she will teach in the classroom.

From the statement by the first participant above, it can be concluded that she has the basic technological knowledge that she got from the technology course in her college. Based on the statement, it can be proven that she already has the basic technological knowledge during contributing to the field of teaching practice.

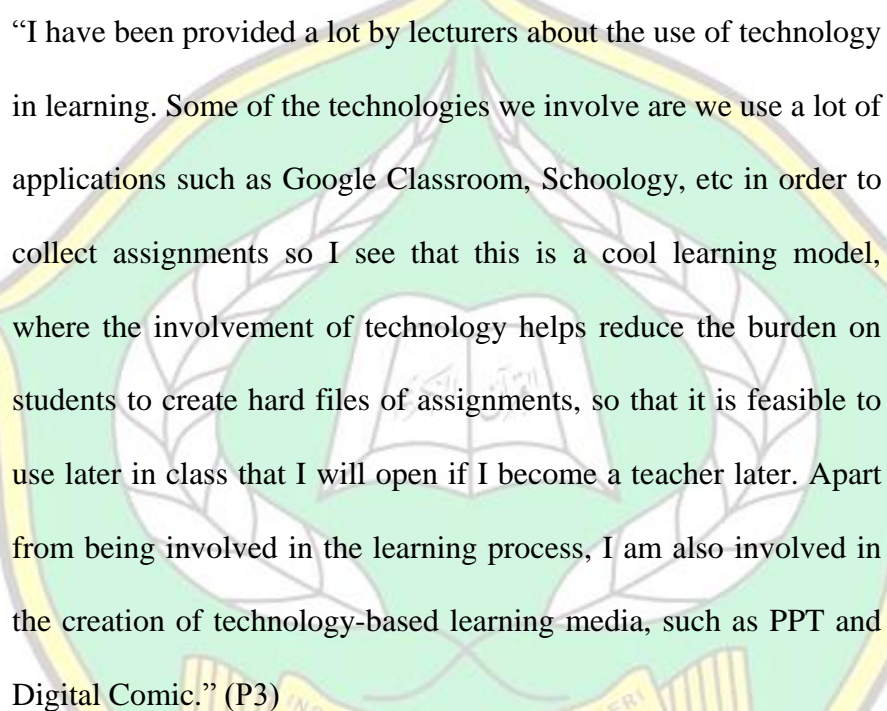
The similar statement also appeared to the other participant where she stated that she already has the basic knowledge of TPACK especially to technological knowledge that she got in college too. This is illustrated in P2 statement, as follow as:

“I already have basic knowledge about TPACK itself, especially technological knowledge like what I got while sitting in college. I am very familiar with technological knowledge such as how to use a computer, LCD projector, make Power Point, etc.” (P2)



Based on the statement of the second participant above, she admitted that she has learned about technology and she had familiar with it such as how to use the computer, LCD projector, make Power Point and etc since she was in college.

The last statement was expressed by the third participant who also had a basic technological knowledge that she had got from her lecturer in college. This is contained in the reflections' answer:



“I have been provided a lot by lecturers about the use of technology in learning. Some of the technologies we involve are we use a lot of applications such as Google Classroom, Schoology, etc in order to collect assignments so I see that this is a cool learning model, where the involvement of technology helps reduce the burden on students to create hard files of assignments, so that it is feasible to use later in class that I will open if I become a teacher later. Apart from being involved in the learning process, I am also involved in the creation of technology-based learning media, such as PPT and Digital Comic.” (P3)

Regarding the statement from the third participant above, she mentioned that she also had a basic technological knowledge that she got from her lecturer through the learning process since she was in college. There are some technologies that she used such as Google Classroom app, Schoology app, etc. She said that those kinds of technologies were amazing because they can help her in order to collect the assignment also her friend will not be able to copy and paste her assignment because the application was safe. She added that, those

technologies were recommended to apply when she become a teacher someday. In addition, in the process of learning she also involved to the creation of technology-based learning media such as making power point presentation and digital comic.

#### **4.1.2 The Easiness of EFL pre-service Teachers' in Operating Technology**

This point described the research findings showed a perception of participants related to the easiness of operating technology during field teaching practice. The three participants expressed their perceptions by providing various reasons that supported their arguments to be clearer.

The following were several statements in direct quotations mentioned by the three participants in their reflection writings. In order to know the easiness of the EFL pre-service teachers' in operating technology, the researcher uses written reflection. Reflection was carried out by three participant researchers. Based on the reflection, it is known that the technology that the EFL pre-service teachers' used in the classroom was easy to operate.

This is in line with the opinion of P1, P2, and P3, which state the easiness of EFL pre-service teachers' in operating technology in the classroom. This is illustrated in the reflections' answer:

“For me it is very easy to operate, starting from the technology which is already easily accessible and also I am used to using it. The LCD projector is indeed easy to operate, for example I just plugged in some connecting cables and then connected it to my

laptop and the screen will display the learning material that I will do through the PPT that I have made.” (P1)

The first participant said that the technology that she implements in the classroom is very easy to operate. She mentioned that, the technology that she used is quite simple and accessible to use it. In addition to that, she utilized the LCD projector when teaching in the classroom because this technology is very easy to operate as she states in reflection. She only needs to connect the cables of LCD projector to her laptop and then the screen of her material will show automatically.

The similar perception was also expressed by the second participant who also felt that the easiness in operating technology that she used in the classroom. This is contained in the reflections’ answer:

“The technology that I use during the teaching process is easy to operate. I just need to bring my laptop and projector as extra tools. All you need to do is connect the laptop to the projector, then the PPT will be displayed the material automatically.” (P2)

According to the second participant response above, she mentioned that the technology that she used in the classroom is very easy to operate. She said that, she only needs to prepare her laptop and an LCD projector, then she can connect her laptop to the LCD, therefore, the PPT which contain her material will show automatically.

The other one statement comes from the third participant where she also gives the similar perception regarding the easiness in operating technology when she did teaching in the classroom. The third participant also felt the easiness in operating technology. This is illustrated in the reflections' answer:

“In my opinion, the PPT displayed on the LCD is very easy and simple. I just need to connect the laptop to the LCD projector by using an HDMI cable so that the LCD can project the image on the laptop. The ease of operation of this technology comes from my habit of using LCDs in the learning process at campus such as doing presentation in the classroom, which indirectly makes me familiar with the procedures for operating LCDs”. (P3)

Based on the statement of the third participant above, she said that the technology that she implemented in the classroom was very easy and straightforward to use. She just needs to connect her laptop to the LCD projector by using an HDMI cable to operate the technology. After that, the material will elucidate by the screen. She acknowledged that the easiness of technology operation actually comes from her habit when she followed the learning process in college because she often used this kind of technology (LCD projector) when did a presentation in the classroom. In addition, she also mentioned that the easiness to utilize the technology is based on her habit when she did the learning process on campus such as doing presentations. Therefore, she stated that she had familiar with the method or procedures of operating the technology (LCD projector).



#### 4.1.3 The EFL pre-service Teachers' Mastery of Technological Skills

This part described the research findings showed a perception of EFL pre-service teachers' about their mastery of technological skills during field teaching practice. Two of three participants expressed their perceptions by providing various reasons that supported their arguments to be clearer.

The following were several statements in direct quotations mentioned by the two participants in their reflection writings. In order to know the EFL pre-service teachers' mastery of technological skills during field teaching practice, the researcher uses written reflection. Reflection was carried out by two of three participant researchers. Based on the reflection, it is known that the EFL pre-service teachers' was mastered the technology that they used during their teaching practice in the classroom because of their habitual factor. As said by P1 and P2:

“I have quite mastered the technology that I use when teaching because I have often used it. For example, I often use an LCD projector and PPT when making presentations in the classroom. So that, during PLP II, I have familiar to use it. Moreover, my lecturers on campus also used the same technology so I was very familiar with it.” (P1)

Regarding the first participant's statement above, she had mastered the technology that she utilized in the classroom because she often used it (habit) such as when making presentation in the classroom. The technology that she used was an LCD projector and PPT (Power Point) in order to deliver her material. In

addition, she mentioned that during PLP II, she had familiar with technology that she used because her lecturer on campus also used the same technology when they are did teaching in the classroom. Therefore, that is why she was mastered with the technology that she implemented in the classroom during field teaching practice.

Besides, another statement was also revealed by the second participant regarding her mastery of technological skills during field teaching practice. This is illustrated in P2 statement, as follow as:

“I have mastered the technology that I use during the teaching process well. Because when we are in college, we are used to making PPT for each of the existing courses.” (P2)

Based on the statement of the second participant above, she said that she had mastered the technology that she used during the teaching process in the classroom because she is usually implements that technology very often when she was in college. For instance, she often makes PowerPoint in every course that she took in college, therefore it makes her familiar with the technology.

#### **4.1.4 The Importance of Using Technology in Teaching**

This point described the research findings showed a perception of participants regarding the importance of using technology in teaching during field teaching practice. The three participants expressed their perceptions by providing various reasons that supported their arguments to be clearer.

The following were several statements in direct quotations mentioned by the three participants in their reflection writings. In order to know the importance of using technology in teaching, the researcher uses written reflection. Reflection was carried out by the three participant researchers. Based on the reflection, there were several points related to the importance of using technology in teaching namely: having an interesting learning media, increasing teachers' value in teaching, and also increasing students' interest in learning. All of the participants stated that using technology in teaching was very important with different reasons.

This is in line with the opinion of P1, P2 and P3, which state the importance of using technology in teaching. This is illustrated in the reflections' answer:

“For me it is important, when teaching in the classroom I am no longer confused in choosing effective learning media for students because technology is now developing very rapidly. Therefore, it can make me easier in order to design or create interesting learning media through the use of available technology.” (P1)

The first participant stated that teaching in the classroom using technology is important because it can help her to create an interesting learning media for her students. Also, it can make her not confused in terms of choosing an effective learning media because she thought that nowadays technology has grown rapidly. Therefore, using technology in teaching can make her easier to design and create interesting learning media in order to support her teaching process in the classroom.

Besides, a similar perception was revealed by the second participant who stated that using technology in teaching it is very important because it can be used as an interesting learning media for the students. This is illustrated in the reflections' answer:

“I think, it is very important to take advantage of the use of technology to support teaching activities in the classroom. It has become a must for prospective teacher students to follow technological developments which will later be used as interesting learning media in the classroom. The use of technology in teaching is also very important to do because it will be very beneficial for the teacher himself. For example, when the teacher has good technological skills or knowledge, this will add to their value as a professional teacher.” (P2)

From the statement of the second participant above, she said that technology is very important to be implemented in the classroom because it can support her teaching activities in the classroom. In addition, she mentioned that as a pre-service teachers', she must take the advantage of technology development which will helps her to choose an interesting learning media in teaching. Other than that, she also said the use of technology in teaching can increase teachers' value in teaching. For instance, when a teacher has good technological skills and has a good understanding of technological knowledge itself, it can be good for her to increase her value as a teacher especially being a professional teacher.



The same thing was expressed by the third participant which also mentioned that the use of technology in teaching is important because it can increase students interest in learning. This is contained in her statement, as follow as:

“Yes, very important. I think that using technology nowadays will be very helpful to increase students’ interest in learning because they can feel that learning becomes easier. For example, when I teach in a class where there is no LCD available, I use a WhatsApp group to send material in PPT to students. So, they can access the material easily from their cell phones and no longer need to take notes on the material I explain.” (P3)

Regarding the answer of the third participant above, she said that using technology is very important and it can be very helpful in order to increase students’ interest in learning. For example, when she did teaching and implemented the technology into her teaching process, students will fell that learning becomes easier than before because technology provides a simple way in terms of providing material. In addition, when the school did not provide an LCD in the classroom, she said that she can send the material to the students’ through WhatsApp, therefore the students’ can access the material more easily.

#### 4.1.5 The Importance of Having Technological Knowledge

This part described the research findings showed a perception of participants regarding the importance of having technological knowledge. The three participants expressed their perceptions by providing various reasons that supported their arguments to be clearer.

The following were several statements in direct quotations mentioned by the three participants in their reflection writings. In order to know the importance of having technological knowledge, the researcher uses written reflection. Reflection was carried out by the three participant researchers. Based on the reflection, there were several points related to the importance of having technological knowledge namely: supporting professional competence as a teacher, improving teaching quality, supporting career, and developing teaching skills.

This is in line with the opinion of P1, P2 and P3, which state the importance of having technological knowledge. This is illustrated in the reflections' answer:

“Along with the development of knowledge and technology today, it has become the reason for the importance of teachers applying technological knowledge in the learning process, this can be my support to become a professional teacher who is able to compete in the midst of global currents. It is very important for everyone as an educator to be in accordance with the new era in terms of technology to make teaching skills more quality, because students can only accept according to their interests and will not be interested in things that are not up to date”. (P1)

Based on the perception of the first participant above, she said that applying technological knowledge in the teaching and learning process is very important in this era. She said that by having a good technological knowledge can support her competence as a professional teacher in the future, especially in the midst of the global current. In addition, she also said that the importance of having technological knowledge can improve her teaching quality in the classroom. For example, sometime the students' will enjoy if the teaching process appropriate to their interests, therefore they can be more enjoy to learn. As a consequence, she applies the up to date technology to support her teaching in classroom so that the students will enjoy learning and her teaching quality will improve as well.

The second participant was also stated that the technology is important with the particular reason for circumstance. This is along the lines of the participants' answer below:

“It is very important for me as a prospective teacher in the future to have a basic knowledge of TPACK, especially knowledge of technology to support my career as a reliable and professional teacher.” (P2)

Based on the second participants' answer above, she also said that having technological knowledge is important especially for her as a pre-service teacher in order to support her career in the future. In terms of supporting career, she said that by having technological knowledge, it can be one of the important factors to support her career as a professional future teacher.

The other perception was revealed by the third participant who stated that the importance of having technological knowledge can develop her teaching skills in the future. This is illustrated in the reflections' answer below:

“Yes, very important. I feel that knowledge of technology will be very helpful for teacher candidates like me to develop my teaching skills in the future. I can develop learning media that are in line with the interests of my students later. Certainly, that would be difficult to do if I didn't have any knowledge, because I would have a hard time seeing things that are trending in children's learning.”

(P3)

Based on the response of the third participant above, she mentioned that is very important to have a basic knowledge of TPACK specifically to the technological knowledge in order to develop her teaching skill in the classroom. For example, she can use technology as a learning media which connects with students' interest, therefore the students will enjoy the class and the class circumstances also fun. And this is one of the ways to develop her teaching skill actually.

## **4.2 Discussion**

This section presented a discussion dealing with the research finding about EFL pre-service teachers' perceptions of TPACK specifically their technological knowledge development during field teaching practice in school. The research findings revealed that mostly show that the implementation of technological



knowledge in schools has been very successful. This study perceives EFL pre-service teachers through their contribution to the field teaching practice, they strongly apply one of a framework of TPACK which is technological knowledge in schools. This study reveals the technological knowledge understanding of EFL pre-service teachers' and investigates how they apply technological knowledge in their classroom (Mishra and Koehler, 2009). The data were obtained through reflection and from the data of this study, five main theme emerged, namely: (1) The basic technological knowledge of EFL pre-service teachers', (2) The easiness of EFL pre-service teachers' in operating technology, (3) EFL pre-service teachers' mastery of technological skills, (4) The importance of using technology in teaching, and (5) The importance of having technological skills. Technological knowledge in this study means the knowledge of the technological tools both hardware and software such as computers, internet, digital videos, and commonplace technology including projector, interactive whiteboard, software program, etc also how technology can be implemented in teaching process (Mishra & Koehler, 2006).

To begin with, the findings showed that all of the participants in this study indicated that they have the basic technological knowledge while conducting the field teaching practice at school. This is because they have gone through learning experiences before they contribute to the field of teaching practice when they were still in college. They have got a basic technological knowledge through the technology course that they took in college. This is proved by the first participant reflection's answer, she said "I already have basic knowledge of TPACK

especially about technological knowledge which I have gained in the learning process on campus through courses that I have studied before, especially technology itself. I learned a lot about the basics of using a computer such as learning Ms. Word, Excel, Power Point, etc. Regarding Ms. Excel, I can use it in evaluating student learning outcomes. Meanwhile, Ms. Power Point itself, I can use power point as a visual tool to display materials or teaching materials in class". The participant has a basic technological knowledge and the types of technology that they used is including PPT, LCD, projector, speaker, picture, microphone, video, and computer as shown in the reflection. These types of technology are categorized as advanced or new technology as stated by Mishra and Koehler (2006). In addition, this is in line with a study conducted by Ruggiero and Mong (2015), stated that teachers still use PowerPoint as a tool for their teaching in a classroom.

Furthermore, in regards to the easiness of EFL pre-service teachers in operating technology, it is indicated that all the participants in this study felt easy in operating technology that they used in the classroom. This is proved by the third participant reflections' answer, she said "In my opinion, the PPT displayed on the LCD is very easy and simple. I just need to connect the laptop to the LCD projector by using an HDMI cable so that the LCD can project the image on the laptop. The ease of operation of this technology comes from my habit of using LCDs in the learning process at campus such as doing presentation in the classroom, which indirectly makes me familiar with the procedures for operating LCDs". Depending with research conducted by Lestari and Asari (2022) which

showed that the use of LCD projector and PowerPoint are the most frequently used by participants because of the ease of use, which impact students' understanding positively on the material being taught and become more active in class. In addition, Kalonde and Mousa (2016) explain several factors that influence teachers in choosing the technology used for learning activities, namely, ease of use, making lessons more interesting, students and teachers becoming motivated and happy, also improve the presentation of the material. The technology mentioned by participant above sound familiar and easy to use or access.

Moreover, regarding the EFL pre-service teachers' mastery of technological skills during field teaching practice, it is indicated that the EFL pre-service teachers' was mastered the technology that they used during their teaching practice in the classroom because of their habitual factor. This is proved by the second participant reflections' answer, she said "I have mastered the technology that I use during the teaching process well. Because when we are in college, we are used to making PPT for each of the existing courses." The finding by Singh and Kasim (2019) also showed that pre-service teachers have a good mastery of technological knowledge. Pre-service teachers were able to use and integrate technology into teaching.

In addition, in terms of the importance of using technology in teaching, it is indicated there were several points related to the importance of using technology in teaching namely: having an interesting learning media, increasing teachers' value in teaching, and also increasing students' interest in learning. One of those

such as increasing students' interest in learning, this is proved by the third participant reflections' answer, she said "Yes, very important. I think that using technology nowadays will be very helpful to increase students' interest in learning because they can feel that learning becomes easier. For example, when I teach in a class where there is no LCD available, I use a WhatsApp group to send material in PPT to students. So, they can access the material easily from their cell phones and no longer need to take notes on the material I explain." This is in line with a study conducted by Ohlson et al. (2013) which stated that it is very important to use technology in teaching process. By using technology can increase students' interest in learning because they felt more comfortable and the learning process become easier.

Lastly, in regards to the importance of having technological knowledge it is indicated that there were several points related to the importance of having technological knowledge namely: supporting professional competence as a teacher, improving teaching quality, supporting career, and developing teaching skills. One of those such as developing teaching skills, this is proved by the third participant reflections' answer, she said "Yes, very important. I feel that knowledge of technology will be very helpful for teacher candidates like me to develop my teaching skills in the future. I can develop learning media that are in line with the interests of my students later. Certainly, that would be difficult to do if I didn't have any knowledge, because I would have a hard time seeing things that are trending in children's learning." This is in line with a study conducted by



Alayyar, Fisser, and Voogt (2012) showed that technological knowledge help the teachers' to provide a better teaching and learning process.

