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Exploring Pre-service English Teachers' Self-Efficacy in the Practice of Online English Classroom

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ABSTRACT

This study focused on the concerns regarding pre-service teachers' experience of how to integrate technology into classroom teaching and the appropriate approaches to apply educational technologies for their students in the online classroom. The qualitative case study was used to get an in-depth analysis of pre-service teachers' self-efficacy. Moreover, this study used the self-efficacy theory proposed by Bandura to explore pre-service teachers' self-efficacy when using technology on purpose to teach in online ways. There were 10 participants from a private university in Indonesia with the English education department as their major. The data were collected through observation, written interviews, and in-depth interviews. The study revealed that there are some factors that would increase pre-service teachers' self-efficacy including their experience with technology, such as observing role models, social persuasion toward integrating technology, and physiological and emotional states of the pre-service teacher. However, the number of individuals and the area included in this study limits the scope of this investigation. As a result, more research is likely to address a broader range of topics, as well as viewpoints from in-service teachers.

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1. INTRODUCTION

As a global issue today, many schools encounter the COVID-19 pandemic and apply social and physical distancing in teaching activities (Dryhurst et al., 2020). Therefore, teaching and learning in Indonesia change from face-to-face learning to online learning as a government decision (Pusdiklat Kemdikbud, 2020). However, in the era of technology, several studies reported that teaching and learning had been conducted in the technological environment, especially in the English Language Teaching (ELT) context, in which the teaching and learning are conducted through computer and mobile-mediated chat-based communication (Andujar & Salaberri-Ramiro, 2021), Computer-Assisted Language Learning (Park & Son, 2020), Wiki-mediated writing (Rahimi & Fathi, 2021), and the adapting to online teaching (Konig et al., 2020). Although the rapid development of technology has altered our perceptions of what EFL teaching should require in the twenty-first century, Ranellucci, Rosenberg, & Poitras (2020) found that teachers continue to struggle with the use of technology in EFL teaching and learning because they feel

unprepared to integrate technology into their classroom. This challenge has raised concerns about pre-service teachers' knowledge of how to integrate technology into their classroom instruction and the best ways to incorporate educational technologies. In addition, the students of English as a Foreign Language (EFL) needed how to be critical thinkers and technologically literate learners, therefore technology could be used to extend content delivery material from teachers. Moreover, pre-service teachers' skill and knowledge of technology influence their readiness in teaching with integrated technology (Caena & Redecker, 2019). Brinkley, 2012 notified that technology in 21st-century learning is recently popular for 21st-century learners. Therefore, providing pre-service teachers with prior experience integrating technology into educational programs should prioritize improving their self-efficacy in technology integration (Wang et al., 2004; Park & Son, 2020; Mahalingappa et al., 2018). Moreover, in teaching with technology, the students could foster their knowledge by learning at home by themselves (Afrilyasanti, Cahyono, & Astuti, 2017).

Bandura (1997) explained self-efficacy as a person's belief about his abilities to perform and succeed in a particular task. There are four sources of developing a person's self-efficacy, enactive mastery, vicarious experience, verbal persuasion, and physiological and affective states (Bandura, 1997). Enactive mastery is the most influential source in developing self-efficacy (Bandura, 1997). Vicarious experience, as stated by Bandura (1997), became the second important factor in developing people's self-efficacy. Other's feedback and encouragement are other sources that foster people's self-efficacy when facing obstacles and difficulties. Moreover, people's anxiety and nervousness were indicated as negative physiological and emotional states, while, their confidence was a positive physiological and emotional state to increase their self-efficacy. Moreover, in the Asian settings, Mesurado, Salanga, and Mateo (2016) found that due to the need for distance learning, the students did not have the strongest autonomous learning. However, in Indonesian, teachers, and lecturers should fulfill pedagogic competence, personality competence, social competence, and professional competence acquired through professional education (Indonesia, 2005)

Moreover, there is a gap between what pre-service teachers were taught in their teacher education programs and whether they can integrate technology into English language teaching and learning activities (Tondeur et al., 2017). While, Yang and Kuo (2020) informed that as a focus of technology integration that can provide students autonomous learning as well as collaborate with peers to solve their problems, the teacher changes the method of teaching from the teacher's center to the student's center. Therefore, schools are now expected to maintain technological tools such as computers, tablets, laptops, and internet connections in order to support teachers and students in the online environment (Ruggiero & Mong, 2015) as important tools in integrating technology into online teaching to guarantee a range of learning possibilities (Andujar & Salaberri-Ramiro, 2021).

Some studies have been conducted on pre-service teachers and their self-efficacy in integrating technology into teaching and learning. First, the research by Mahalingappa et al. (2018), aimed to investigate pre-service teachers' self-efficacy and knowledge through online experiences. The second study is delivered by Park and Son (2020), talked about the raised concern toward the use of technology in English Foreign Language (EFL) teaching. It investigated the language teacher education in fostering pre-service EFL teachers' knowledge and skills in the use of technology, such as computer-assisted language learning, in the Hong Kong context. It was discovered that pre-service teachers' attitudes, perceptions, and experiences with technology enhance their knowledge and skill in implementing technology in the classroom.

The differences between the present study and past studies are first, the use of technology as experimental research, however, the current study looks at how pre-service teachers develop their self-efficacy for success when integrating technology into online teaching. Second, the current study investigates how pre-service teachers develop self-efficacy for success when using technology in online teaching. This study aimed to explore the self-efficacy of pre-service teachers when integrating technology in EFL teaching and learning in the Indonesian context. Furthermore, this study hopefully could give insight to educators in preparing good teaching practices with technology. In addition, the students could

get the material from the teachers easily while learning with technology. Moreover, this research addressed a research question: what do the sources of self-efficacy influence pre-service teachers in integrating technology into online English classrooms?

2. METHODS

The researchers adopted a qualitative approach in line with the case study phenomenon that aimed at the case of online teaching and learning in the Indonesian context (Yin, 2018). The multiple data sources are collected by the researchers through observation, written interviews, and in-depth interviews. The researchers conducted observation in Muhammadiyah 5 private junior high school in the online classroom by taking pictures and notes when the participants were teaching English with integration technology. Then, the written interview was delivered to ask participants' perceptions about their experience in the use of technology for teaching and further asked in-depth which focused on their self-efficacy when integrating technology into their class. The in-depth interview was based on the sources of self-efficacy by Bandura (1997), including mastery experience, vicarious experience, verbal persuasion, and physiological and emotional states.

The research participants were 10 pre-service teachers (3 males and 7 females) from Universitas Muhammadiyah Surakarta in Indonesia who practiced English language teaching using technology by attending microteaching in online ways. Further, the participants conducted a 4-week online tutoring program in some junior and senior high schools in Indonesia.

Table 1. Pre-service teacher's demography

Name	Age	Teaching Experience	Last speaking scores	Current Semesters	Gender
HA	20	Micro teaching	A	8	Female
AH	19	Tutoring Program	A	6	Female
RM	20	Tutoring Program	AB	6	Female
DP	20	Micro teaching	AB	8	Female
TK	20	Micro teaching	B	8	Female
NN	20	Micro teaching	B	8	Female
EN	19	Tutoring Program	AB	6	Female
WS	19	Tutoring Program	B	6	Male
NH	21	Micro teaching	A	8	Male
MA	20	Micro teaching	AB	8	Male

The participants conducted teaching-learning in an online environment and the researchers did observation by following the online classroom and taking pictures and notes. Then, the written interview was collected through google-form and followed up with an in-depth interview for in-depth information related to pre-service teachers' self-efficacy. The in-depth interview was conducted with 10 pre-service English teachers for around 30-minutes and recorded in the form of a video. Respondents have different teaching experiences, including in micro-teaching and tutoring programs. Moreover, the respondents also have different speaking scores. Responses to the research question were triangulated from observation, written interviews, and in-depth interviews.

Furthermore, the researchers analyzed the data through data condensation, data display, drawing, and verifying conclusions (Miles, Huberman, & Shaldana, 2014). The data condensation was obtained from observation, written interviews, and in-depth interviews. The data were condensed or grouped related to the pre-service English teachers' self-efficacy in integrating technology into the online classroom. Firstly, on this level, the data coding was conducted. Subsequently, in the data display, the data was displayed in the form of Excel. In doing so, the matter being discussed was easy to understand. Moreover, the drawing conclusion of this study was delivered in the form of a deep explanation to answer the research problems. In addition, the conclusion was the final part of the study and the

researchers would look again at the data display and data condensation to prevent data loss. Furthermore, the researchers concluded the results based on the research questions and the theory used.

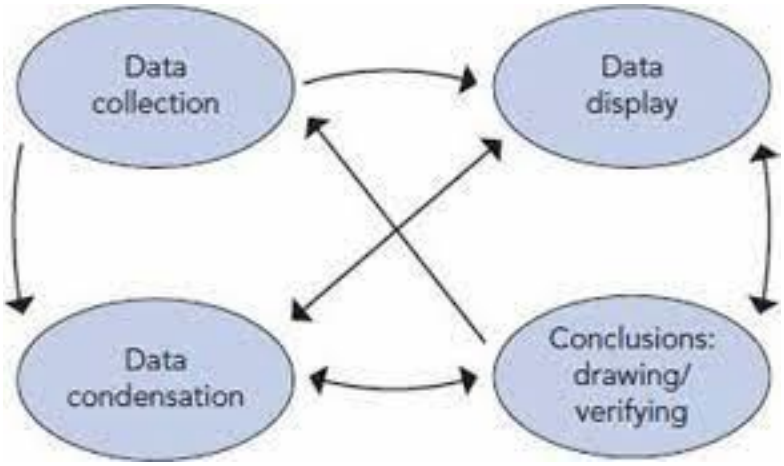

Figure 1. Components of Data Analysis by Miles, Huberman, and Saldana (2014)

3. FINDINGS AND DISCUSSION

The finding of this study found that the pre-service teachers improved their knowledge of using technology for teaching through experiencing the online English classroom and learning by self-taught. Moreover, they also increased their knowledge and skill through observing role models, including supervisors, peers, and lecturers when they could perform the teaching-learning successfully. The results are explained using four categories of self-efficacy resources which consist of mastery experience, vicarious experience, verbal persuasion, and physiological and emotional state (Bandura, 1997). Furthermore, there are four themes found that related to Bandura's framework of self-efficacy and its sources: 1. Performing teaching experience (mastery experience), 2. Observing the role models (vicarious experience), 3. Getting others' feedback (verbal persuasion), and 4. Managing emotional states (physiological and emotional state).

3.1. Performing Teaching Experience

The present study found that the participants experienced in the use of technology through self-training before commencing their teacher education program. The participant said that "my daily experience in the use of technology can be used as complementary knowledge when learning at the university" (RM's Written Interview). However, in self-learning with technology, pre-service teachers need to determine the suitable platform and method for teaching-learning in an online environment. Another participant affirmed that for distance learning, "technological knowledge is really helpful to prepare teaching strategies" (DP's Written Interview). In addition, one participant said that "when I am using WhatsApp video call with my students, it could also increase my knowledge in the use of technology for future teaching" (MA's Written Interview).

On contrary, another participant said that "I do not know how to operate a laptop to teach online because in the past people rarely and maybe did not use it for teaching practice, especially my teacher, but because of the pandemic, people have become more active in learning technology to create teaching more efficiently" (TK's Written Interview). Furthermore, when teaching by integrating technology, teachers should stay heed of the learning method as well as the student's needs. As the participant said:

"While we use technology for teaching, we need to consider and organize the suitable teaching method that creates the teaching-learning activity effectively so it will be more useful for the students. (HA's In-depth Interview)."

However, pre-service teachers' experience regarding technological knowledge varied depending on the experience they got in the university program. Seven participants said that their experience with technology improved significantly when attending university, "I improved my knowledge and skills about technology after studying in the teacher education program and attending the online learning (RM's Written Interview)." In addition, "using video conference for teaching in the online learning can help to improve my technological knowledge (NN's Written Interview)." Furthermore, the participants mentioned that their lecturer also influenced their experience in the use of technology for teaching and learning. While one participant mentioned that he experienced knowledge about technology from his senior high school, and further said:

"When I studied in senior high school, my teachers were teaching using PowerPoint and sometimes I used the internet and YouTube for helping me when studying. I thought those are reasons for me to learn more about teaching with technology." (WS's In-depth Interview)

This finding is in line with the research of Park & Son (2020), which found that the school had an impact on the students when they attended the program, as well as their interest in technology. Moreover, the pre-service teachers with technological knowledge had classified themselves as digital natives (experiencing technology by self-learning) and enhanced their technological competence before entering university (Park & Son, 2020). In addition, Al-Awidi & Alghazo (2012) found that pre-service teachers improved their skills in integrating technology by working hard with the internet to find out how to integrate technology in teaching, both through their own learning and in attending university programs. This finding is supported by Erdem (2007) who concluded that pre-service teachers' success in teaching might enhance self-efficacy beliefs. Furthermore, these findings also corroborated results from other studies that pre-service teacher teaching experience impacted the development of their self-efficacy (McDonnough and Matkins, 2010; Krause, 2010; and Gurvitch and Metzler, 2009; Al-Awidi & Alghazo, 2012).

Several studies suggest developing the knowledge of pre-service teachers effectively in technology integration could be through their teacher training program by their experience in teaching while connecting their knowledge and skills to teaching practices (Sun, Strobel, & Newby, 2017; Tondeur, 2018). However, Lin and Gorrell (2001) reported a decrease in pre-service teachers' self-efficacy due to the experience in teacher education programs, as well as these findings that the pre-service teachers do not get suitable learning material from their lecturers. In addition, pre-service teachers who teach by integrating technology successfully happened when pre-service teachers have higher knowledge in the use of technology and confidence in online teaching, as impacted by increasing self-efficacy belief for future teaching (Clark et al., 2015; Flores, 2015). Moreover, these findings give an authentic opportunity that the pre-service teachers' experience in technology and its practice in teaching helped to increase their confidence as well as self-efficacy beliefs concerning technology integration in ELT (Aydin and Boz, 2010).

3.2. Observing The Role Models

Pre-service teachers improved their self-efficacy in teaching by integrating technology through role models when they were successful in conducting an online classroom. Four participants were attending the tutoring program and taught English in an online classroom for four weeks. One participant said that "I got several experiences in line with integrating technology for teaching through my supervisor" (TK's Written Interview). In teaching English for the online classroom, the participants

prepared the teaching material with their supervisor. This study found that the participants were guided by their supervisor and observed the supervisor when teaching. In addition, HA said that:

> *"My supervisor used online platforms such as Quizizz, WhatsApp Group, Google Meet, and Zoom when teaching to give us several examples on teaching with integrating technology in the online classroom (HA's In-depth Interview)"*

However, teaching by integrating technology in the school context has several obstacles, such as poor signal, different students' needs, disturbing behavior, and students who are passive while attending the online classroom. Several strategies are delivered by the supervisor for the participants to anticipate the obstacles. One participant said:

> *"My supervisor gave several examples of flexibility and creativity in the online teaching toward the students. He informed to prepare another material in a PPT file and video file if there is a bad signal. Furthermore, he also reminded to create teaching-learning fun so that the students are not bored." (RM's In-depth Interview).*

The participant also said that the supervisor opened a consultation session, "In the consultation session, my supervisor stated that making online learning more creative to make the classroom fun. Moreover, my supervisor also helped in developing the online material and method for teaching with integrating technology and giving several suggestions." (RM's In-depth Interview)

Teaching in distance learning, whereas nine participants mentioned that the lecturer needed to conduct teaching-learning creatively to better improve pre-service teachers' experience with technology for teaching. One participant said that "my lecturer used different online platforms and websites when teaching to give new insight on using technology and it is quite helpful (MA's Written Interview). In addition, one of the participants said that "the lecturer can influence our knowledge in integrating technology if the lecturer is more interactive with students" (WS's Written Interview). While one participant stated that:

> *"My lecturer gave assignments and online material through WhatsApp group and face-to-face through video conferences. I think it can influence us to do the same method. However, it would more effective if the lecturer explains how to use technology in detail and efficiently by discussing with students interactively." (AH's In-depth Interview)*

On contrary, five participants said that "our lecturer did not deliver the material from video conference, only through PPT file. It made us did not understand what application is used for the online learning" (NN's Written Interview). Moreover, one participant said that she did not improve her knowledge about technology from the lecturer, "because my lecturer was new in teaching with technology and she was lack in knowledge and skills in the use of technology" (AH's Written Interview). Hence, if the lecturer faced difficulty and obstacles in integrating technology into teaching, the participants would face a hard time preparing to teach by incorporating technology. One participant said:

> *"My lecturer did not deliver the use of the platform and its features; we would not understand how to integrate technology with a such platform into teaching (TK's In-depth Interview)"*

However, five participants stated that peers helped them when preparing material to integrate technology in teaching through informal discussion. The participants said that "if I do not understand the material from the lecturer, my friends will help me, and we discuss the material together. Discussing with friends feels relaxed and enjoyable" (WS's Written Interview). Moreover, the participant also said that peers often introduced some new platforms, resources of teaching, and methods.

"My friends frequently invite me to discuss about several platforms to teach, learning internet sources, and methods for teaching and how to integrate them into technologies that still unfamiliar with, and they share ideas for incorporating them into the teaching and learning process." (WS's In-depth Interview)

This study found that the participants improved their knowledge about technology for teaching from the lecturer who was interactive. Moreover, the participants could succeed in teaching through observing the role models, and further increase their self-efficacy. Therefore, success in integrating technology by the participants when in the tutoring program was influenced by the supervisor through observing when teaching and giving guidance on preparing the material which was suitable for the student's needs in the online classroom. These findings in line with Park & Son (2020), found that the supervisor in the tutoring program plays a critical role in experiencing to teach English with integration technology. Therefore, the success in integrating technology in the tutoring program was influenced by the supervisor when the participants observed the supervisor successfully teaching online.

Moreover, the participants also mentioned that they need to discuss with peers the teaching material, online platform, and teaching strategies for improving their knowledge about teaching online. Furthermore, they got the material and teaching guide from the lecturer, and they feel more relaxed when discussing with peers. In addition, pre-service teachers' confidence in using the specific platform when teaching could increase their self-efficacy beliefs (Al-Awidi & Alghazo, 2012). Results suggest that pre-service teachers from modeling and observing the role models when teaching could improve their experience and self-efficacy belief for future teaching. In addition, Al-Awidi & Alghazo (2012) stated that they highlight potential benefits by modeling others. By modeling others, the pre-service teacher could increase their self-efficacy beliefs (Schunk et al., 2008).

3.3. Getting Others' Feedback

The social persuasion of the participants in integrating technology is influenced by the factor of the pandemic era. In the pandemic era, they were prepared to be able to teach with incorporated technology. While, social or verbal persuasion (see. Bandura, 1997) can be an influential factor to the pre-service teacher when developing their self-efficacy. Verbal persuasion involves others when giving suggestions, criticizing, and encouraging pre-service teachers in integrating technology. In addition, others' feedback is also indicated as a successful predictor for the pre-service teacher to develop self-efficacy.

One participant said that he prepared to teach using technology just because of the pandemic COVID-19. However, the participant did not get experience from senior high school class and teacher about learning with integration of technology (WS's Written Interview). Moreover, the participants came from some rural areas with low connectivity and a lack of technological knowledge. Therefore, the situation of the pandemic created an opportunity for them on learning technology in teaching was very useful. However, they faced difficulties while preparing to learn how to integrate technology due to some obstacles, such as limits in technological use, low signal, and lack of technological experience. One interviewee said:

"Teacher education program conducts a good plan when starting to prepare the pre-service teacher to integrate technology in teaching. However, I have lacked the use of technology in my house because of low signal." (DP's Interview)

One participant said, "I learn about using technology for teaching from my friend. Even though, I could prepare the material for teaching from my teacher education program and my lecturer when attending several video conferences" (RM's Written Interview). Furthermore, this study also found some participants got motivation on using several platforms and media for teaching by discussing with

peers, asking peers and supervisors, and getting criticism and suggestions from peers, supervisors, and lecturers.

The participants stated that social persuasion from others affected them when integrating technology into teaching. Peers, Supervisors, and lecturers provide social persuasion by giving feedback and suggestions, and critics in using technology that encourage the participants. One of the participants said that "My supervisor gives me some suggestions for trying various platforms to be more varied in learning to increase students' enthusiasm for learning" (AH's Written Interview). While the use of the internet spread rapidly, a supervisor suggested the use of narrated PowerPoint and learning videos, due to the signal problem when conducting teaching-learning through video conferences. Furthermore, the supervisor also suggests giving more explanations through WhatsApp groups to all students.

One of the participants stated that the lecturer gives suggestions and criticism when the participant consults her work on preparing to teach with technology, sometimes, the lecturer gives corrections on it.

> *"The lecturer gives me criticism and suggestions, and corrected some of my mistakes and if there is the material that I don't understand, I can ask the lecturer." (HA's Interview)*

These findings showed that the participants integrate technology into their teaching activities because of the pandemic issue. Nowadays, the pandemic issue has moved academic activities into distance learning, especially by using technology. However, there are some of the participants who live in rural areas which have not been better facilitated with technology as well as the supporting systems like good signal and cellular data. In preparing pre-service teachers to be better suited to distance learning with technology, teacher education programs play an important role, including recognizing the pre-service teacher's needs, encouraging pre-service teachers in the use of technology, promoting technology-enhanced learning and teaching (see. Wong, 2016; Park & Son, 2020).

These findings showed that the participants received encouragement and positive feedback both from peers, supervisors, and lecturers. The participants declared that peers helped them by giving a long and relaxed discussion related to the material of teaching online since the participants still felt a lack of information and material in teaching with technology. As Al-Awidi & Alghazo (2012) concluded that the encouragement and support the participants achieved from others influenced their self-efficacy beliefs.

3.4. Managing Emotional Stage

Pre-service teachers' feelings when integrating technology impacted their development of self-efficacy. Bandura (1997) stated that some pre-service teachers' self-efficacy can be impacted by their feeling, mental, physical, and internal states. Therefore, such feelings experienced by the pre-service teachers, especially when integrating technology into online teaching become an influential matter in developing their self-efficacy. Lower their stress-level can be impacted their success in teaching-learning activities.

Four participants expressed self-confidence and pleasant feeling when integrating technology into teaching. The participants experienced positive physiological and emotional states after trying to integrate technology into teaching and finished successfully. One of the participants said that self-support can maintain positive feelings when there is a problem such as anxiety, nervousness, and sick.

> *"I try to stay focused when teaching with technology integration and do self-support to bolster my mood." (DP's Interview)*

One of the participants has high self-confidence that has been seen when facing difficulty, she tries to improve her knowledge and skill by learning through books or searching the internet. Moreover,

this feeling of positive state can help the participant on preparing the teaching with technology integration successfully.

> *"I do always improve my knowledge about teaching with technology when facing difficulty, so I can improve my knowledge about some platforms for teaching with technology (EN's Interview)"*

Some participants said that they experienced negative feelings when teaching with integrating the technology such as worries, nervousness, and anxiety. Some factors were reported by the participants related to the influence of negative feelings that they experienced such as lack of confidence in integrating technology, fatigue that results in drowsiness during online learning, and low internet connection. One of the participants stated that fatigue makes him feel sleepy when teaching online and also makes he is not focused.

> *"When I'm tired and dizzy I become less concentrated and focused in integrating technology in learning." (NH's Interview)*

Three participants said that they experienced low internet signals and sometimes they got a problem fixing the connectivity. "When bad signal makes us uncomfortable while teaching. On the occasion, we teach with a video conference platform that needs better connectivity. When we try to fix the connectivity but we lack technological knowledge" (DP's Written Interview). In addition, one of the participants mentioned that learners' attitude also influences their negative feelings when integrating technology into teaching activities.

> *"Sometimes the opening is smooth, then confused, then there are students who suddenly ask questions, sometimes causing panic. When students are passive, it also lowers their enthusiasm for learning." (AH's Interview)*

This study found that pre-service teachers experienced negative emotional states because of low signal, lack of technological knowledge, and lack of experience in teaching online (Rahimi & Fathi, 2021). The negative emotional states of pre-service teachers would decrease their self-efficacy when integrating technology into teaching. In addition, the participants who experienced a lack of technological knowledge and skills to integrate technology into online teaching felt anxious and nervous (Konig et al., 2020). The participants' negative physiological and emotional states could influence their success in online teaching as well as decrease their self-efficacy. While the participants who experienced technical knowledge and skills in technology integration have arisen their self-efficacy as well as their confidence in online teaching (Yang and Kuo, 2020). For successful online teaching, while integrating technology, it should be critical for pre-service teachers who experienced a lack of technological knowledge and skills since it influenced them as future teachers (Tondeur et al., 2017). Since the emotional states of the pre-service teacher are important, the teacher education program, as well as the lecturer, could support and encourage them to have positive attitudes and control their thought and actions in order to help them reduce stress and negative attitudes (Redmann and Kotrlik, 2009).

4. CONCLUSION

The results of this study established that synchronous and asynchronous learning models are achieved by the participants through their experience in teacher education programs. However, their technological knowledge and skills started to develop in high school. In addition, the success in teaching online could be seen through some factors, including efficacy for classroom management, instructional strategies, and student engagement. In order to examine the success of pre-service teachers in integrating technology into online teaching, this study explored in-depth the source of self-

efficacy toward the development of pre-service teachers' confidence in online teaching. This study showed that the pre-service teachers' self-efficacy would increase through some factors, including their experience in the use of technology, observing role models in the use of technology, social persuasion toward integrating technology in teaching, and physiological and emotional states of the pre-service teacher to integrate technology in teaching. Although the findings indicated that pre-service teachers experienced several challenges while integrating technology into online teachings, such as engaging with passive students in online learning, the poor connection of both teacher and students, and the lack of experience in using technology, especially to integrate it into online teaching and learning. This study showed that pandemic issues such as social-environment force the pre-service teachers to integrate technology as well as the teacher education programs' rule. While the pre-service teacher's knowledge and skills in operating some platforms are influenced by their self-learning experience and in the teacher education program. Furthermore, their experience in integrating technology with teaching material is achieved through experience in the teacher education program and observing lecturers and supervisors. In addition, some of the pre-service teachers who have experienced the lack of technology and its integration into teaching got feedback and suggestion

This study concluded that the pre-service teacher's experiences in the use of technology are the main factor to success in integrating technology into online teaching. Moreover, observing the peers, supervisors, and lecturers in technology integration is also important for another source. In addition, others' feedback and encouragement increased the confidence of the participants. The first implication of pre-teaching, teachers have to observe students' needs before conducting the online class, and pre-service teachers also need to be supported by the institution, supervisor, lecturer, peer, and students. The second implication of the in-teaching, asynchronous classroom gives beneficial of a low-speed internet connection, however, the synchronous classroom is also needed to deliver the material directly and monitor the students. This study also indicated the culture swift probably appear after COVID-19 because they have already emerged the notion of flexibility and accessibility replacing communication tools with learning management tools. The third implication post-COVID-19 is that educators believe the learning process could not be isolated in the face-to-face classroom, but there are various models that they could try with integrating technology. The limitation of this study is that the data collected was only from a private university in Indonesia and could not be generalized for all contexts of culture and situation. Moreover, the issues with blended teaching-learning through online teaching and learning could still be observed further in another research.

Conflicts of Interest: Declare conflicts of interest or state "The authors declare no conflict of interest." Authors must identify and declare any personal circumstances or interests that may be perceived as inappropriately influencing the representation or interpretation of reported research results.

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