

The Pre-service Teachers' Internship Program during the Pandemic: Prospects for a New Landscape of Teacher Education

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Abstract

COVID-19 pandemic has made education goes online including teacher education programs. For the first time, pre-service teachers needed to teach online to school students when they were going through a teaching internship program. This study aimed to determine issues and challenges faced by pre-service teachers when teaching online during the internship program. The main theory used as the framework was the behaviorist perspective on education. A number of 71 pre-service teachers had filled in online surveys that included reflections of teaching for each online teaching session conducted. The reflections were used as the data source. Data were analyzed using a qualitative analysis method, namely coding strategies. Themes were generated and discussed. This study found three primary challenges faced by the pre-service teachers: (1) internet accessibility among school students, (2) students' interest and attitude toward online learning, and (3) knowledge and skills of conducting online teaching and learning including assessment of student learning. Implications for teacher education programs are discussed and recommendations are made to inform teacher educators and other relevant parties such as governments and philanthropies about ways to improve practice of online teaching of pre-service teachers.

Key-words: Teaching Internship, Pre-service Teachers, COVID-19 Pandemic, Teaching Reflections, Qualitative Research.

1. Introduction

Since the pandemic of COVID-19 has happened around the globe in early 2020, many countries go for online education (Affouneh, Salha, & Khlaif, 2020). Schools have been closed to curb the spread of the corona virus (Bozkurt & Sharma, 2020). Uses of educational technologies or digital education platforms have become a must to ensure education can still be delivered to school students. Even though online education is not new for the world, its usefulness and eminence has only become explicit when the pandemic occurs. Due to a no-choice scenario, teachers and students need to teach and learn online.

When school were closed, teacher education programs need also to be changed into online modes because universities were also closed. Certain groups of pre-service teachers needed to teach at schools for teaching internship programs. They also affected with the pandemic and must also teach in online environment to school students.

In this study, pre-service teachers in a university were researched in terms of their practice of teaching online to school students during the pandemic. The reason was that the study would be able to inform teacher education programs' administrators to take necessary action to help pre-service teachers to teach online better. The fact that the pandemic rarely happens, the researchers had taken the opportunity to understand pre-service teachers' thoughts regarding their online teaching practice during the pandemic, when they were in the program of teaching internship. They were the first group of pre-service teachers who experienced teaching during the lockdown due to the pandemic. Hence, collecting data from them was beneficial in terms of understanding how they had been facing challenges in teaching online during the lockdown.

Insights gained from the analysis of data would be able to inform teacher educators and admins of teacher education programs ways to better prepare the next cohort of pre-service teachers to teach online during the pandemic. Besides, many parties including in-service teachers may also benefit from this study because they also faced the same situation like pre-service teachers. In-service teachers may also be able to learn how to respond to challenges in teaching online.

2. Objective, Research Question, and Potential Significance

This study aims to illuminate issues and challenges that the pre-service teachers had been facing when teaching online during the pandemic, when they were in the program of teaching

internship. The research question is, what were the pre-service teachers' issues and challenges in teaching online during the program of internship?

The answers to the research question would help other pre-service teachers and even in-service teachers to learn how to face and respond to the challenges in teaching online during the pandemic. If the similar scenario happens again in the future (pandemic, war, emergency, etc.), educators will be able to be more ready to teach with suitable approaches, especially online pedagogies.

3. Theoretical Framework

The main theory used in this study is the behaviorist points of view on education (Skinner, 1938). Behaviorism is the oldest theory of educational psychology and is the most established. The theory proposed that humans' learning should be focused on behavioral changes. It means teachers directly teach students for them to understand quickly and demonstrate the understanding through observable behaviors.

Direct instructions such as giving explanations and doing mastery practice are very common around the globe, especially in developing nations (Thomas & Watters, 2015). Teachers usually ask students to prepare to answer questions that can prepare them to pass exams or tests. If students get a good grade, teachers will likely to reward them such as giving gifts. However, if students do not pass the exams, they may be punished, such as be given more homework so that they will learn more.

The behaviorist approaches are still popular because they have shown success in ensuring that students will learn. The researchers believe that the theory of behaviorism is relevant with this study because for many years university students are taught using didactic approaches (Stains et al., 2018). Didactic approaches fit with the nature of behaviorist learning. Pre-service teachers, as university students, are likely to imitate how they are taught and use the similar approaches to teach school students when they are teaching in actual classrooms. The phenomenon may be called "the apprenticeship of observation" (Lortie, 1975). Even though pre-service teachers might have learned numerous teaching and learning approaches, they were also exposed to the ways they were trained by teacher educators in the university courses. The fact that university teaching is still didactic, at large (Stains et al., 2018), pre-service teachers are likely to emulate similar teaching approaches if they are to teach school students.

4. Literature Review

The Perspective on Education from Behaviorist Points of View

Numerous learning theories are available, behaviorism, constructivism, and connectivism. All of these theories of learning were proposed to provide educators with the big ideas of how to best teach students. The theory of behaviorism is the most established because it is the first learning theory proposed.

Behaviorism focuses on human behavior and put little emphasis on mental or thinking process. The aim of behaviorism is for humans to have behavioral changes. The popular idea of behaviorism is conditioning. It can be categorized into two: classical and operant conditioning.

Many scholars have criticized behaviorist views on education because the theory has done little to increase human capacities to think. In this era, scholars have advocated use of constructivism to educate students with creative and critical thinking skills.

Nonetheless, behaviorism is still relevant in many schools. The main reason is that the system of education, at large, still gives a huge space for behaviorism to play its roles. Due to the dominant practice of preparing students to take exams and make them pass or get a good grade (Matusov, 2021), teachers are likely to motivate students with various strategies for them to be successful in exams.

For many years, teachers are accountable to their students' learning performance. The case of No Child Left Behind (NCLB) Act is referred as one particular example (Simpson, Lacava, & Sampson Graner, 2004). If students show good results in exams, teachers are likely to be rewarded with certain rewards such as be given a good score for their annual performance by their school admins. However, if their students do not show good performance in exams, they are likely to answer some tough questions from the admins of their schools. From the real scenario in many schools, behaviorism is still in-place in education. In fact, the exam-oriented education practice is still utilized though many countries have started to be giving less focus on examinations. At large, behaviorism may still be popular due to the system and the tradition of education in many nations.

Equipment for Online Teaching and Learning

Online teaching and learning require use of relevant devices and access to the internet. For that to happen, teachers and students should all have that equipment. Without them, teachers and students are difficult to teach and learn at distance.

One particular problem is poverty. When students need to stay home due to the lockdown, not all of them have the opportunity to learn because their families especially parents have less purchasing power to buy a special device such as tablets for their children to learn. This is particularly relevant for poor families (Stelitano, Doan, Woo, Diliberti, Kaufman, & Henry, 2020). During the pandemic, some students have even left school education and are deemed the one who dropped-out from schools (McMorris-Santoro, 2021).

The pandemic has made the gap of education gets larger between rich and poor students (Bailey, Duncan, Murnane, & Au Yeung, 2021) because the poor is likely to have low power to gain the necessary tools for learning online than the rich. In this context, teachers will be facing challenges to reach all students because they are unable to meet them face-to-face to avoid the spread of COVID-19. Some students may not be able to attend online classes that teachers carry out during the lockdown. Worst, the internet data is quite expensive (Lee, 2018) and makes the poor parents less affordable to provide sufficient data of internet to their children.

Students' Attitude Toward Online Learning

For so long, school students learned in face-to-face settings at schools. They are even forced to come to schools because if they failed to attend schools and classes, they are likely to be facing disciplinary actions such as being expelled from schools.

However, when students needed to learn at home during the lockdown, they generally were not made compulsory to join online classes. School admins have no clear power to take action if students failed to join online classes. Schools might be well knowing that not all students were able to join because not all of them might have the devices (Johnson, Veletsianos, & Seaman, 2020) such as tablets or laptops. Making students compulsory to join online classes, thus, was deemed impractical and even less ethical from the justice point of view (Bunyamin, 2019), especially for students from poor families.

Not all students are able to learn at home (Sudarmo, Nugraha, Mardhiah, Liow, & Aslan, 2021). Students might be facing a lot of distraction when learning at home such as e-games, watching televisions, or needing to take care of their younger siblings because their parents still needed to go out to work. In this regard, they faced many challenges to learn online. Many of them were deemed not capable to learn online because they were not “programmed” to learn online (McMorris-Santoro, 2021). It implies that many students were not ready to learn online and they might be facing a cultural

shock. Transiting to online education would take time (Hodges, Moore, Lockee, Trust, & Bond, 2020), especially when students were not trained with skills to learn online.

Knowledge and Skills of Pre-service Teachers to Conduct Online Teaching and Learning

Online teaching and learning require teachers to first learn knowledge and skills regarding approaches to teach online effectively. Usually, teacher education programs allocate a number of courses of educational technology for pre-service teachers to learn various strategies to teach using digital tools and applications. Before they go for teaching internship programs, they are required to take some fundamental courses to better prepare them with necessary knowledge and skills to teach at schools, such as psychology of education and assessment and evaluation in education.

However, with the advent of the pandemic, teaching internship programs went online. Pre-service teachers had no choice but to deliver teaching and learning online. They and their school students were not allowed to come to schools during the lockdown. Some pre-service teachers might be less ready to teach online. For so long, they thought that teaching is to be conducted face-to-face.

During the teaching internship program, pre-service teachers might be relying on knowledge and skills that they gained from courses taken before starting the internship. In this vein, they were to apply knowledge and skills that they had learned. Nonetheless, some of them might not be capable to translate the knowledge and skills into practice. Besides, they needed to translate them into online or virtual settings. They might not be able to directly make the translations into effective practices.

Hence, conducting online teaching and learning require pre-service teachers to wisely utilize knowledge and skills that they gained from university courses. The amount of knowledge and skills that they really had might be varied between pre-service teachers. Some might be having higher capabilities to use them, but some might be having challenges. Some of them might be learning how to teach online via self-initiative learning such as watching videos on how to use applications of learning e.g., Zoom, Google Meet, or WebEx.

Online teaching and learning require teachers to have a strong commitment. Unlike face-to-face teaching and learning, online teaching and learning might be taking more time for teachers to teach effectively (Pallof & Pratt, 2007). From preparations to final student assessment, teachers might need to entertain students' questions, personally, and to ensure all students participate in learning. It might be challenging for teachers because some students might not be able to join online classes for many reasons. Thus, some students might be "missing" the learning process. Pre-service teachers need knowledge and skills to encourage students to learn and participate actively in the learning

process. It even requires creativity of teachers to attract students to learn online (Nurhayati, Angkarini, & Tanamal, 2021).

5. Methodology

This study is qualitative in nature. During the period of semester 2 session 2019/2020, from February 2020 to June 2020, the pre-service teachers in one Malaysia university had gone through the program of teaching internships in selected secondary schools in Malaysia. Initially, when they started the program, they taught in the settings of face-to-face where they went to classes and taught relevant subjects such as Physical Education, English, and Engineering.

However, when the federal government of Malaysia declared the lockdown due to the COVID-19 pandemic, all schools were closed. All of the pre-service teachers needed to teach in online platforms such as using the Google Meet, Zoom, WhatsApp, Telegram, and Facebook. The lockdown happened in mid-March 2020. From that time, all of the pre-service teachers completed the teaching internship program in online settings.

The administration of the faculty in the university had asked all the pre-service teachers to make daily reports regarding their online teaching activities. They were provided with a Google Form to report. The reports also asked them to write reflections of teaching for each online teaching session that they conducted with their students. All of the pre-service teachers were expected to provide the daily reports until completing the teaching internship program.

When the program of teaching internship was completed in June 2020, a team of researchers analyzed the reflections that the pre-service teachers wrote. After the analysis, the researchers discovered that a number of 71 pre-service teachers provided the reports. Thus, all of them were included in this study as the research participants.

In the analysis process, the researchers read all teaching reflections that the participants made. The analysis was qualitative in nature where coding strategies (Miles, Huberman, & Saldana, 2014) were employed. Several codes emerged such as issues on internet access, students' attitudes, and pre-service teachers' competencies to teach online. These codes then were grouped in a category such as "internet connection and accessibility", "students' attitude in learning online", and "competencies for online teaching". Finally, themes were produced to best represent the categories emerged.

To ensure reliability and validity of the data analyzed, all of the researchers had worked together to read and reread the analysis made. All researchers provided their comments and suggested ways to improve the analysis process. One particular improvement was the way of reporting the

findings. The percentage of responses for a particular theme, such as internet access, must be stated for readers to know how many participants experienced the problem. Hence, the findings could be able to show the representational percentage of the pre-service teachers for each theme produced.

Accuracy of data analysis was important. Thus, the researchers had asked an external person, a researcher in the educational field, to provide comments on the analysis of data. He was generally satisfied with the analysis and had not opposed any findings.

6. Findings and Discussion

From the analysis conducted on the reflections of teaching of the pre-service teachers, three key themes were emerged. First, infrastructures of online teaching and learning and accessibilities to the internet. Second, school students' motivation, interest and attitude in learning online. Third, online teaching knowledge and skills of the pre-service teachers. The details of these three primary findings are revealed.

Infrastructures of Online Teaching and Learning and Accessibilities to the Internet

A great percentage of pre-service teachers, 42% of them (30 out of 71 participants) had had bad experiences in conducting online teaching due to the problems on infrastructures (availability of devices for learning online among students) and also limited accessibilities to good internet connections for teaching and learning online. The problems are deemed fundamental because without having the tools to teach and learn online (smartphones, tablets, or laptops), teachers and students were facing challenges in gaining effective teaching and learning. Examples of scripts regarding the first key finding are provided.

“Homework was given to students once a week, on every Wednesday. However, the number of students who participated was not high. This happened because of some problems such as some students had no internet accessibility.” (Participant #23)

“Students listened and provided responses even though online learning was just through discussion via WhatsApp. Many students had no smartphones to join this online learning.” (Participant #13)

“Some students did not join the online class due to limited access to the internet coverage and tools.” (Participant #14)

Those scripts indicate that the internet access and infrastructures of online teaching and learning including availability of gadgets were the major problems among school students. The reflections that the pre-service teachers provided, however, did not clearly show that they faced the problems. Those problems happened among their students. Nonetheless, if the students had no access to the gadgets and internet connection, the teachers were affected in terms of ensuring their teaching were delivered to the students.

The issues regarding infrastructures and the internet accessibility are long-standing problems in online education. The associated issue is poverty (Bailey, Duncan, Murnane, & Au Yeung, 2021) and digital divide between rich and poor people. During the pandemic, students from poor families are not very affordable to get access to the gadgets because their parents have less money to buy the gadgets or devices (Stelitano, Doan, Woo, Diliberti, Kaufman, & Henry, 2020). The devices are usually owned by the parents, a father and/or a mother. If a family has many children, the situation becomes worst because the parents need to share the devices with all their children. This is not really practical because the parents also need to use the devices for themselves, especially for work. During the pandemic, many parents work from home and even some of parents still need to go work at the workplace if they work in essential services such as electricity, water, and foods. Thus, they still use the devices especially smartphones to communicate with others especially customers.

The best solution is for all children to have their devices for themselves, yet this is not possible because the parents may be the persons with less money to spend because they are low-income workers. The parents who are rich may not be having problems with money, thus they can buy devices for all or most of their children. Besides, the accessibility to the internet connections also requires money spending. The poor families may not be affordable to purchase the internet data. The charges for purchasing internet data are expensive (Lee, 2018). Usually, online classes would require significant amount of internet data use especially if they are synchronous where teachers and students interact in real-time modes. The pandemic, indeed, has created a significant education gap and a digital divide between rich and poor families, especially when schools were closed and education has been changed to the online settings. The pandemic has made poor students and families disadvantaged. They are the ones who should be assisted by multiple parties to ensure they are not left behind in getting education during the pandemic. Perhaps, the governments and philanthropies need to help the poor families to get access to online education by providing them with required devices (smartphones, laptops or tablets) and the internet access.

School Students' Motivation, Interest and Attitude in Learning Online

Based on the teaching reflections of the pre-service teachers, 17 out of 71 of them or 24% mentioned that students' motivation, interest and attitude were important factors that contributed to students' involvement in learning online. The pre-service teachers perceived their students had problems in having motivations to learn online and many of the students were thought less interested to learn in online environments. Thus, the pre-service teachers believed that students' learning motivation and interest were low. Selected scripts are provided to show the teachers' thoughts regarding their students' motivation and interest in learning online.

“Most of the students would just ignore all the messages in the group and choose not to join any lessons of any subjects.” (Participant #32)

“Some students had no problem with internet connection, but they still did not want to participate in the online class.” (Participant #12)

Participants #32 and #12 mentioned that not all students joined the online learning activities even though they had internet connections. They either did not respond to the pre-service teachers' teaching or simply did not want to involve in the learning activities. This problem is important to be noted because even though the students had the internet connections, they were not involving in the online learning. What were the reasons for this no-involvement phenomenon in the online education?

The pre-service teachers did not, however, provided additional reasons why their students did not join the online classes even though having the access to the internet. They thought that the students were simply not or less interested to join the online classes or had low motivation to join the classes. What made the students refused to join the online classes? If the pre-service teachers totally put the responsibilities to the students, then the students might be saying something about the no-involvement phenomenon. Nevertheless, the pre-service teachers, from the reflections that they wrote, did not say much about the students' motivation and interest issues. The “unknown, real reasons” may not be studied by the pre-service teachers. If they did so, they might be exposing the information in the reflections made. To this extent, less explanations could be made regarding the no-involvement phenomenon.

However, the literature could help reveal the possible reasons for the phenomenon of no-involvement of the students in online learning. Some students, according to Sudarmo, Nugraha, Mardhiah, Liow, and Aslan (2021), were difficult to learn at home during the pandemic. For so many years, they had learned in face-to-face settings in schools. In that past scenario, they were forced to come to schools and learned in face-to-face classes. Whether they liked or not, they were required to

attend the classes. School admins made compulsory for all students to come to schools every day. If the students failed to attend to schools, they could be punished such as expelled from the schools or be given stern warnings.

When the schools were changed to the online modes, the students were not made compulsory to attend all online classes. Many school admins understood that not all students could learn online because not all of them had the access to the internet. Many students might think that they had the freedom either to join or not the online classes. For some students, who were deemed having determinations to learn in whatever conditions, they had less problems to join the classes, as long as they had the access to the internet. However, for other students, who had the internet access but did not join the online classes, they might think that they would not be punished if they did not attend the online classes. Only if they are to be punished, they would think of joining the classes.

The other way round was that if the students were rewarded if joining the online classes. For instance, if they consistently joined the classes, they were given gifts by the teachers or the students were rewarded with money as the encouragement. This was opposite to the punishment approach.

Thus, the no-involvement phenomenon of the students in learning online could be deemed a behavioral issue. From the perspective of behaviorism, use of rewards and punishments could be useful to motivate students to learn (Matusov, 2021). With appropriate rewards and punishments, the students' behavior (not joined the online classes) could be changed to the intended scenario (joined the online classes).

The reason for taking the behaviorist point of view is that teachers in developing nations around the globe are still teaching their students using the behaviorist approaches, namely didactic and teacher-centered (Thomas & Watters, 2015). Teachers consistently teach students for them to learn to gain rewards, such as getting a good grade in exams. For that to happen, teachers put full efforts to ensure students can pass or receive the good grade. However, when the pandemic of COVID-19 happened in early 2020, some students might think that they have missed the support from their teachers because they were unable to meet their teachers face-to-face. Worse, if they had no internet access, then they got no opportunities to meet their teachers online. In this vein, the students, who had regularly been educated with behaviorist approaches by the teachers, would feel that they could not be able to continue to learn. They might become demotivated. In the previous time before the pandemic, they could meet their teachers at schools and could immediately asked any questions during the classes. Yet, they had now lost that opportunity because teachers might be unable to help all students in the online platforms. Teachers could just help few students, practically. Indeed, online teaching could add extra burdens to teachers because teaching online requires

additional commitment for teachers to entertain students' requests and questions for almost all time. The key principle of online education, learn at any time and at any place, is totally true. Students could learn at any time they deem suitable, as long as they had the internet access.

On the other hand, online teaching, typically, requires extra time for teachers to teach effectively (Pallof & Pratt, 2007). Some teachers could not always be persistent with these extra tasks; thus, they could not be reaching all students when conducting online teaching. Hence, some students might have become less motivated and even lost the motivation when facing the situation of less assisted by their teachers. The scenario is one possible explanation why students showed minimal to no involvement in online learning.

Pre-service Teachers' Knowledge and Skills in Conducting Online Teaching Including Assessment

Some pre-service teachers had indicated that online teaching had made them learned to teach differently from the normal teaching, face-to-face. For some other pre-service teachers, their reflections revealed that they actually needed to learn more about knowledge and skills in conducting teaching and learning online, including assessment of or for learning. Out of 71, a number of 20 pre-service teachers or 28% mentioned about their needs to learn to assess students' learning in online settings. Selected scripts are provided to show the pre-service teachers' thoughts related to knowledge and skills in doing online teaching including assessment.

“I managed to create an interaction with the students to make them engaged with the lesson by asking them to read the text together and ask them to share their opinion. I was able to attract students' interest in the lesson through the class activities using Mentimeter and Quizizz. However, there was a distraction in terms of noisy background from the students' side that interrupted the reading process. The teacher can suggest the students turn off their microphones if their background is noisy to avoid distractions during the lesson.” (Participant #18)

“I need to be more creative in using WhatsApp in order to attract students to learn at home.” (Participant #20)

“I need to diversify online learning methods to ensure students do not get bored.” (Participant #35)

The examples given have shown that some pre-service teachers did not know how to use specific platforms of online teaching. Participant #18, for instance, did not know that he/she was

actually able to mute students' microphones. It indicated that she/he had no knowledge about techniques of using a specific online teaching platform.

Some other pre-service teachers admitted that they needed to be more creative in teaching online, such as Participant #2, and needed to be well versed in using various methods of online teaching to attract students' attention or to stimulate their interest, such as Participant #35.

In relation to online teaching is online learning assessment. Assessment of or for learning is crucial because it is part of instruction including online instruction. When teaching online, teachers usually ask questions to know students' current understanding. In online teaching, teachers are expected to use various assessment tools for them to gauge students' understandings in a particular topic. Selected scripts are revealed to show some practices regarding assessment of/for learning that the pre-service teachers had done during online teaching.

“Six over 29 students managed to join the lesson. All six students achieved the learning objectives. I discovered that students would like to watch shorter videos and answer short questions in the Google Form. I would make sure there will be a mixture of easier multiple-choice questions (MCQ) and intermediate open-ended questions in the Google Form to encourage them to complete the activities.” (Participant #32)

“Students provided positive responses. Four out of five students responded. Majority of students can answer questions well. Students gave feedback using Quizizz. It created fun in answering the quiz questions.” (Participant #30)

Participant #32 mentioned that he/she found that his/her students liked to be assessed using objective questions and short questions than long questions. He/she realized that he/she needed to adjust assessment techniques so that his/her students could possibly be assessed feasibly. Otherwise, the students might not get involved in the assessment activities. Other pre-service teachers such as Participant #30 stated that use of online assessment tools, for instance, Quizizz, could be able to attract students' attention. Her/his students seemed happy with the use of the interactive assessment platform.

Online teaching requires teachers to be creative (Nurhayati, Angkarini, & Tanamal, 2021). Creative means they can diversify ways of teaching and assessing students online. With the existence of bunches of assessment tools such as Quizizz and Google Forms, teachers can now benefit from those tools which could assist them to analyze students' responses immediately. Quizizz, for instance, allow teachers to instantly get the results from the students' responses. This immediate result is very helpful and even makes the learning and assessment process faster in terms of result production. This is one particular advantage of using online learning assessment tools. The conventional method,

especially paper-and-pen, could not provide immediate results because teachers need to manually mark and analyze students' answers. With use of online learning assessment tools, teachers are now able to save time for technical work, such as analyzing students' answers, thus teachers could focus more on the intellectual work such as thinking and designing better online learning pedagogies through effective assessment methods.

However, some pre-service teachers did not really master the learning assessment practice in online platforms. Selected scripts are provided to prove the occurrence of the problem of insufficient skills in assessing students' learning in online environment among the pre-service teachers.

A number of three students were able to answer all questions correctly. However, some weaknesses of the questions created were identified where some students did not know that the questions require more than one answer. The teacher will improve learning materials in the future for students to understand better (Participant #5).

Two out of eleven students responded to the questions given. However, the students did not answer properly probably because the questions were difficult for them and not suitable for their level. The teacher will ensure use of easier questions for the next class. The learning objective was not achieved. The teacher hopes the students to actively participate in the next class (Participant #30).

Students understand teacher's explanation although the lesson is conducted through WhatsApp. This is because teacher uses simple language when communicating with the students. However, students rushed in answering the quiz. The teacher should tell them clearly about the time given to answer the quiz (Participant #70).

The scripts indicate that online learning assessment practices that some pre-service teachers conducted were not really effective. The reason might be that they were not really mastering use of various assessment strategies. When the pandemic of COVID-19 started in early 2020, many teachers were not really equipped with sufficient knowledge and skills in teaching and assessing learning online. Many were shocked when the government announced the closure of schools nationwide. This might be true around the globe. Thus, many teachers, including pre-service teachers, were not ready with knowledge and skills required for teaching online. The period of teaching internship was the time where they started to learn many more strategies for assessing learning online, in a more independent way. The learning process was deemed self-initiative because not all schools could provide trainings for their teachers to teach and assess learning online. The self-initiative learning, however, might just be conducted by pre-service teachers who were deemed having strong motivation to learn new knowledge and skills in teaching and assessing learning online. For some pre-service

teachers, they might simply be relying on knowledge and skills that they gained before starting the teaching internship program. Most of the knowledge and skills were learned in courses taken in the previous semesters in the university. Yet, the knowledge and skills that those pre-service teachers learned from those courses might not be sufficient for them to teach and assess learning effectively. Those courses were learned when the pandemic did not yet happen. Thus, the demands for pre-service teachers to equip themselves with sufficient knowledge and skills to teach and assess learning online, effectively, were not very clear during the pre-pandemic era.

With the outbreak of corona virus since the end of 2019, many teacher educators have now thought that pre-service teachers must better be prepared to teach and assess learning online effectively. The era of COVID-19 pandemic has pushed all teacher educators to rethink ways of educating pre-service teachers with knowledge and skills in teaching and assessing learning online. In this context, teacher educators must first be ensuring that they must equip themselves with those knowledge and skills. The reason is that if they want to ensure pre-service teachers equipped with necessary knowledge and skills for teaching and assessing learning online, teacher educators must first be able to learn use of various ways for teaching and assessing learning online. This measure could ensure that pre-service teachers could learn directly from teacher educators. In this scenario, teacher educators are to be the ones who must be seen capable in teaching and assessing learning online. They could be the ones who can guide pre-service teachers to master numerous strategies in teaching and assessing learning online through relevant courses. The courses might not just be educational technologies, but other courses that can be enriched with technological elements such as educational psychology, assessment and measurement in education, and curriculum development. Hence, elements of online education could now be placed in many more courses for pre-service teachers to be equipped with adequate knowledge and skills to teach and assess learning online.

Curricula of teacher education programs might now need to be redesigned to respond to the pandemic. Scholars should not think that the pandemic effects on education are temporary. Instead, the effects could be in-place for a longer period and might even be long lasting. Hence, redesigning curricula of teacher education programs, by enriching elements of educational technologies across courses, is central. The pandemic might likely change the world education landscape, forever, by making all teachers and students to get adapted with the new norm of education, especially open distance learning (ODL). ODL might be the long-term solution for education to be delivered to students. Like it or not, all teachers now need to accept the fact that they must be preparing themselves to be tech-savvy.

When the pandemic ends, it is expected that some features of ODL will remain, though many schools will still operate face-to-face. Use of educational technology tools might likely be increasing because teachers and students have been adopting and utilizing them during the pandemic. Some schools might even be in the mode of blended, face-to-face and online, because school admins at that time might have recognized benefits of online education, such as ODL. In the future, teachers are to ensure they are capable in teaching and assessing learning online effectively because many students during that era will likely be really comfortable with online education approaches.

7. Recommendations and Future Studies

From the study that the researcher had conducted, recommendations are made. First, all school students who have been facing challenges in learning online should be helped to get facilities of online learning. They must be equipped with necessary tools such as gadgets for them to learn online. This is especially important for students from poor families. Internet data should also be provided to them so that they can join online classes. By taking this action, all students will be able to learn during the pandemic or even after the pandemic ends. The expectation is that students will still be using the gadgets for learning during the era of post COVID-19. The gadgets can be used for the blended learning purpose where they can use the gadgets after attending face-to-face school periods. Governments and philanthropies can take initiative to help affected students, especially students from poor families, to own the devices.

Second, teachers in general and pre-service teachers in particular can consider to reward students who consistently join online classes. This is to motivate students to actively join the classes and make them learn. Rewards such as giving gifts could be considered. In terms of punishing students, teachers can only make it if students have the internet access yet do not want to join online classes. However, teachers must carefully punish students. Students who have no internet access or devices must not be punished for not attending online classes. Teachers must be fair and wise in rewarding and punishing students.

Third, pre-service teachers must be ensuring that they are prepared to teach online. They must learn how to use various online teaching strategies and tools for teaching and assessing students' learning. Teacher educators can help pre-service teachers to gain necessary knowledge and skills in conducting online teaching and learning including assessment. Teacher educators must first equip themselves with that knowledge and skills, thus they can teach pre-service teachers directly on how to use multiple strategies for online teaching and learning.

Fourth, curricula of teacher education programs should be redesigned to include more elements of educational technologies. Key courses such as educational psychology, assessment and evaluation in education, and curriculum development can be enriched with digital technologies. For example, pre-service teachers are taught about online learning assessment tools when learning the course of assessment and evaluation in education. It will help pre-service teachers to simultaneously learn two disciplines in a course (online assessment tools + assessment knowledge).

Nevertheless, the recommendations made are not intended to be generalized to whole teacher education programs around the globe or nationwide. Only if the admins of teacher education programs think that the recommendations are relevant to their programs, then the recommendations are deemed transferable to the bigger populations.

Future studies can look into perspectives of school students regarding online teaching and learning because this study did not include school students as the research participants. Their points of view can make a study more comprehensive because purely relying on pre-service teachers' perspectives might be biased. Hence, inclusion of school students and relevant parties in a study can provide holistic views on online teaching and learning during the pandemic and how the pandemic can change the education landscape in the long run.

Teacher educators can also be included in the future studies. Their perspectives can help teacher education program admins to look into needs for preparing teacher educators with new knowledge and skills in teaching online. Their attitudes, readiness, and concerns should be taken into account because they are the ones who will ultimately teach pre-service teachers in various courses.

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