



Experiences and Sense-Making Processes of Online Teaching Internship: A Master of Teaching Programme

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Teaching requires a student-teaching internship for the license and registration, usually completed from the face-to-face and on-campus components. However, due to the covid-19 pandemic, many classrooms have switched to online platforms, regardless of the levels. This study aims to understand student-teachers' experiences of an online-based student-teaching internship and how such internships influence the sense-making processes of student-teachers in online school environments. In line with the self-efficacy theory and social cognitive career and motivation theory, the case study method was used to invite a group of Master of Arts in Teaching students (a total of 18) to share their experiences and sense-making processes of their online student-teaching internship. Semi-structured interviews, focus group activities, and member-checking interviews were used to collect data from the participants. Based on the qualitative data, three themes were categorised: 1) positive experiences, 2) technology education is the trend, and 3) preparation for online classroom environments. The study may provide support or ideas to university leaders, supervisors, department heads, student-teachers, and policymakers to reform and polish their teaching qualification programmes with different types of delivery modes in order to meet the needs and educational trends of the coming decades.

Keywords: case study, Master of Arts in Teaching, online learning, self-efficacy, sense-making process, social cognitive career, motivation theory, student-teaching internship

INTRODUCTION

Online teaching and learning and distance learning have become some of the leading educational directions in the past few decades (Damayanti & Rachmah, 2020; Mozelius & Hettiarachchi, 2017). Although many schools, vocational schools, colleges, universities, and postgraduate institutions offer online education, courses, and programmes, students, teachers, and school administrators continue to enjoy and believe in on-campus and face-to-face classroom instruction due to the peer-to-peer discussions and interactions between different parties involves. However, due to the covid-19 pandemic, many educational institutions changed from on-campus and face-to-face

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teaching to online learning platforms and environments (AbuSa'aleek & Alotaibi, 2022). As both K-12 and university classes needed to be taught from online platforms, university departments needed to arrange online-based student-teaching internships as no physical classrooms were available in on-campus environments (Moorhouse, 2020; Stewart & Lowenthal, 2022).

Unlike other industries, teaching is a vocational profession that usually needs face-to-face, hands-on, and peer-to-peer instruction. Student-teachers' observation reports and learning outcomes are impacted not only by the sharing and discussion between themselves and their instructors and supervisors but also by the interactions and behaviours of classroom students (M. Brown et al., 2015; Murphy & Stewart, 2017). Although some online-based Bachelor of Education, Postgraduate Certificate in Education, Postgraduate Diploma in Education, Master of Arts in Teaching, and Master of Teaching programmes were designed to help student-teachers obtain their initial teacher registration, many require their student-teachers to complete an on-campus and face-to-face-student-teaching-internship in an approved school (Dos Santos, 2022a; Smith & Foley, 2015).

However, the covid-19 pandemic has changed the educational trends and directions of teaching qualification programmes worldwide. From early 2020, many schools, universities, and government departments encouraged school leaders to provide online classrooms and instruction to comply with social distancing recommendations (Bai, 2022). Both K-12 and university classrooms were switched to online platforms, including student-teaching classroom environments (as no physical classrooms were available) (Chang et al., 2020; Moorhouse, 2020).

Although online and on-campus student teaching internships offer the same results (e.g. teacher's initial registration, completion certificate, learning outcomes, etc.), online and on-campus teaching and learning experiences should differ. Some previous studies (Goodnough & Mulcahy, 2011; Michos et al., 2022; Pike, 2015) indicated that a student-teaching internship is one of the first steps for student-teachers to teach in a real classroom environment with instruction from their supervisors. For many junior-level teachers, the student teaching internship experience plays an important role before they enter real classrooms as teachers in a K-12 environment.

Different scholars (Goodnough & Mulcahy, 2011; Pike, 2015) have argued that the online and the on-campus student-teaching internship experience play different roles for student-teachers. Some scholars believe that although online-based teaching qualification programmes may involve online courses for the coursework requirement, an on-campus and face-to-face student-teaching internship is essential (Bai, 2022). Others (Dos Santos, 2022a; Pike, 2015) believe that student-teaching internships could be taken online as long as the classroom environments involve real students, supervisors, and classroom activities. As many students located in remote and rural communities complete their K-12 education and qualification(s) via approved online schools and agencies, there is a need for these groups of students to have qualified teachers (Ewing & Cooper, 2021).

In other words, although many online-based Bachelor of Education, Postgraduate Certificate in Education, Postgraduate Diploma in Education, Master of Arts in Teaching, and Master of Teaching programmes may be completed online, particularly the coursework requirements, on-campus and face-to-face student-teaching internship is essential (Bai, 2022). However, the covid-19 pandemic limited the options for many schools, supervisors, university coordinators, student-teachers, students, and parents. Therefore, it is important to understand the experiences and stories of student-teachers who completed their student-teaching internship online (Maican & Cocoradã, 2021; Revilla-Cuesta et al., 2021). As the covid-19 pandemic and online-based classroom environment will eventually eliminate, it is important to gather the current data in order to improve and enhance online-based programmes in the future.

Purpose of the Study

Online teaching and learning will become one of the educational trends in the next decades (Bai, 2022). However, providing effective and acceptable student-teaching internships and arrangements is a problem for university leaders, department heads, partner-school leaders, supervisors, students, and classroom students (Wei & Chou, 2020). This study aims to understand (a) student-teachers' experiences of an online-based student-teaching internship and (b) how such internships influence the sense-making processes of student-teachers in online school environments. In short, based on the theoretical frameworks, the study was guided by two research questions:

1. How do Master of Arts in Teaching student-teachers describe the online-based student-teaching internship they undertook as part of their degree, particularly during the COVID-19 pandemic?
2. How does an online-based student-teaching internship influence the sense-making processes of student-teachers in online school environments?

Significance of the Study

Most of the current curricula and methods of instruction for teaching qualification programmes were designed for traditional on-campus and face-to-face learners who can complete their coursework on campus and their student-teaching internship in approved schools (Dos Santos, 2020). Although some online teaching qualification programmes may allow learners to complete most of their coursework online, they require the student-teaching internship to be completed on campus or at one of the approved sites. However, the covid-19 pandemic limited options for many schools, supervisors, university coordinators, student-teachers, students, and parents. Therefore, based on the data from a group of Master of Art in Teaching student-teachers, particularly their experiences and stories, the results of this study will fill the research gaps in the areas of online qualifying programmes and online student-teaching internship options in the future.

However, the covid-19 pandemic significantly changed the instruction methods and requirements for the coursework component(s) and the student-teaching internship requirements (Kwee, 2021a, 2021b). As the discussions on online-based teaching

qualification programme requirements have not been widely shared (before, during, and after the covid-19 pandemic), it is important to understand how to reform the current curricula and methods of instruction, particularly for student-teaching internships (Bai, 2022), to meet the needs of online-based learners. Therefore, based on the current data and stories from a group of Master of Art in Teaching student-teachers who completed their student-teaching internship online during the covid-19 pandemic, the results of this study will fill the research gaps in this area, particularly how online student-teaching internship can be reformed and enhanced in the future.

Theoretical Framework and Literature Review

Based on the purpose and nature of this study, particularly focus on the experiences and sense-making processes of a group of Master of Art in Teaching student-teachers who completed their student-teaching internship online during the covid-19 pandemic, the researcher completed two theoretical frameworks to investigate this problem, including the self-efficacy theory (Bandura & Adams, 1977), and the social cognitive career and motivation theory (Dos Santos, 2021). The following section discussed the theoretical frameworks and the relevant literature.

Theoretical Framework: Self-Efficacy Theory and Relevant Literature

The self-efficacy theory (Bandura & Adams, 1977) suggests that individuals' personal beliefs might determine how they act, react, behave, and conduct a series of behaviours in a particular situation. For example, if an individual has a strong personal belief in completing a task, they may have a better chance of finishing the task, and vice versa. Bandura (Bandura, 1993; Bandura & Adams, 1977) indicated that four elements might affect individuals' self-efficacy and relevant behaviours due to their influence on self-efficacy and personal beliefs: (1) performance outcomes, (2) vicarious experiences, (3) verbal persuasion, and (4) physiological feedback.

A previous study (Stadtlander et al., 2011) indicated that online students might face challenges due to the distance issue. However, with the online application and effective technology-assisted tools, positive experiences, communication, and interactions may increase the self-efficacy of learners (Liu & Duan, 2022). Another study (Michos et al., 2022) argued that technology-assisted tools and cellphone applications play an important role in online internship experiences as contemporary learners are getting used to online-based learning. Also, some (Tsai et al., 2017) have argued that off-campus and online internship programmes increase students' learning motivations and self-efficacy for further career development. Therefore, according to the findings of a previous study, although learners complete their internships online or off-campus for different purposes, positive experiences and outcomes play important roles in terms of their motivation and self-efficacy (Karim et al., 2019).

Two previous studies (Pike, 2015, 2017) indicated that in line with the service-learning approach, online-based teaching internships might be useful for Master of Music and Doctor of Musical Arts students who want to learn teaching-pedagogy and strategy in their classroom environments. The results indicated that student-teachers received positive learning ideas from their online internship, which positively influenced their

self-efficacy as teachers (Regier, 2021). However, the service-teaching approach to student-teaching internships may not meet the requirements of many government agencies as many states and countries tend to have their student-teachers completing their internship on-campus (Ma & Cavanagh, 2018).

Theoretical Framework: Social Cognitive Career and Motivation Theory and Relevant Literature

The social cognitive career and motivation theory was developed on the basis of the guidelines of social cognitive career theory (Lent et al., 1994; Lent & Brown, 1996) and self-efficacy theory (Bandura, 1993; Bandura & Adams, 1977). On the basis of contemporary development, researchers developed the social cognitive career and motivation theory to understand the behaviours and sense-making processes of individuals and groups.

The social cognitive career and motivation theory (Dos Santos, 2021) suggests that internal beliefs and external elements might influence individuals' behaviours, decision-making processes, and career decisions. The psychological and internal factors with self-efficacy element of the theory suggest that individuals' behaviours might be impacted by academic interests, personal considerations, and the achievement of educational and career goals (Sides & Cuevas, 2020). On the other hand, social and external factors have an impact on career development, financial considerations, and surrounding environments and individuals.

A number of studies (Alshahrani et al., 2018; Bolkan et al., 2021; Kapoor & Gardner-McCune, 2020; Olson, 2014) employed the above-mentioned theories in their investigations. Recently, a study (Kapoor & Gardner-McCune, 2020) investigated computer science students' experiences of industry internships and the barriers to them securing internship positions; the researchers found that due to their low self-efficacy, actions, and alternative priorities and application process challenges, less than 60% of computer science students pursue an internship. Another study (Olson, 2014) argued that effective help and programmes during the early stages of their careers play an important role in increasing self-efficacy and expanding the experiences of first-generation students. Another study (Bolkan et al., 2021) also argued that effective arrangements, positive experiences, and managerial school management might increase self-efficacy and expand the experiences of students. Therefore, the application of the social cognitive career and motivation theory may be appropriate to investigate the current issue (Kwee, 2020). For details on the social cognitive career and motivation theory, please refer to Figure 1.

Some recent studies (Dos Santos, 2022a, 2022b) indicated that due to the covid-19 pandemic, many student-teachers might seek online and alternative options to help them complete their student-teaching internship online, particularly during the lockdown. Some scholars (Sykes & Roy, 2017) indicated that online internships could be the alternative option, before and during the covid-19 pandemic, particularly for student-teachers who could not attend the on-campus student-teaching internships. However, due to personal engagement, many student-teachers also want to complete their student-

teaching internship online, regardless of the covid-19 pandemic. More importantly, it is not uncommon that student-teachers may defer their student-teaching internship as many would like to seek the face-to-face and on-campus experiences in the classroom environment (Zehr & Korte, 2020). Some may argue that the internship experiences may increase their employment opportunities after their university voyage (Ma & Cavanagh, 2018). However, only a few studies were conducted during the covid-19 pandemic. It is important to complete additional studies to fill the research gaps in this area.

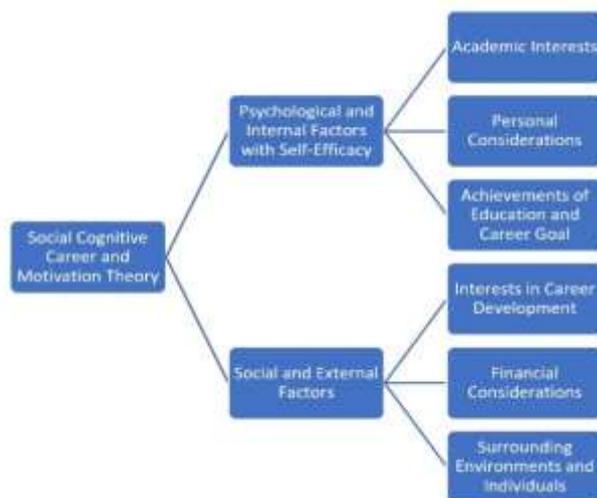


Figure 1
Social cognitive career and motivation theory (Dos Santos, 2021)

METHOD

Research Design

The case study approach (Yin, 2012) was used to investigate the current study. The case study approach is useful to understand a particular situation and problem of a group of individuals, a site, or a situation in a setting. This study collected data and investigated a group of Master of Arts in Teaching students who have recently completed their online-based student-teaching internship as the final requirement for their academic programme at a university in the United States.

The researcher employed the purposive sampling strategy (Creswell, 2012; Merriam, 2009) to recruit a group of Master of Arts in Teaching students. First, the researcher emailed the department administrators and department heads in the College of Education for the potential discussion. The department head agreed with the study and forwarded the invitation letter, protocol, and risk statement to their Master of Arts in Teaching students who have recently completed their online-based student-teaching internship. Based on the invitation, all qualified students were willing to join the study

as participants (i.e. a total of 18 participants). The participants must meet all the following points:

- Enrolled as a Master of Arts in Teaching programme
- Completed their coursework for the Master of Arts in Teaching programme
- Recently completed their online student-teaching internship

Data Collection

Three tools were employed in order to confirm the data:

- The semi-structured interview sessions
- Focus group activities
- Member-checking interview sessions

The researcher employed these three tools to capture the qualitative data from 18 participants (Creswell, 2014; Merriam, 2009).

First, each participant was invited to join an online-based, private, and one-on-one interview session via the online platform (i.e. Whatsapp Cellphone Application). During the interview sessions, the researcher asked many semi-structured interview questions which were related to the research questions and the purpose of the study. All participants were free to express their opinions and stories to the researcher without any borders.

Second, after 18 participants completed their semi-structured interview session, the focus group activities were conducted. Two focus group activities were formed (i.e. nine participants per group). During the focus group activities, the researcher served as the coordinator for the discussion. Each participant was free to share their ideas and experiences with other classmates. As the researcher only served as the coordinator, no personal opinions from the researcher were expressed.

Third, after completing these two data collection procedures, the researcher categorised the collected data under each participant's individual file. The researcher sent the data (i.e. participants' own sharing and lived stories) to the relevant participant(s) for the member-checking interview. During the member-checking interview, both the researcher and participant(s) discussed and confirmed the data. All participants agreed with their own data.

Due to the covid-19 pandemic, social distancing and travelling limitations were encouraged. Therefore, the data collection procedures were conducted completely online without any face-to-face interactions. Also, the researcher used a digital recorder to record all the voiced messages. However, no visual images were captured. All participants agreed with this arrangement.

Data Analysis

The grounded theory approach (Strauss & Corbin, 1990) and general inductive approach (Thomas, 2006) were used as the data analysis tools. The open-coding and axial-coding techniques were used to categorise the qualitative data into themes and groups (Strauss & Corbin, 1990). After the data collection procedure, the researcher captured a large number of meaningful data from the participants. The researcher re-read the raw materials multiple times for any potential themes and groups.

First, the researcher employed the open-coding technique (Strauss & Corbin, 1990) to group the massive data into meaningful groups. From this stage, 14 themes and 15 subthemes were grouped. However, it is important to further study the themes and subthemes.

Second, in order to narrow the large-size themes into reportable themes and groups, the researcher employed the axial-coding technique (Strauss & Corbin, 1990). As a result, three themes and four sub-themes were yielded.

Triangulation

Triangulation is one of the most important elements in qualitative studies (Merriam, 2009). Merriam (2009) indicated that qualitative researchers should employ at least three data collection tools in order to reduce the subjectivities. Therefore, the researcher employed three data collection tools, including 1) the semi-structured interview sessions, 2) focus group activities, and 3) member-checking interview sessions. As a result, the researcher has tried his/her best to meet the requirement.

Ethical Consideration

This study was conducted in compliance with the Declaration of Helsinki. Privacy is the most important factor of this study. Therefore, the researcher kept all the signed agreements, protocols, personal contacts, voiced messages, written transcripts, computers, and relevant materials in a password-protected cabinet. Only the researcher could read the materials. After the study was completed, the researcher deleted and destroyed the relevant materials immediately. This study received support from the Woosong University Academic Research Funding 2022.

FINDINGS AND DISCUSSIONS

Although the students were all second-career student-teachers and/or university graduates with a major in a subject other than teaching, many shared similar ideas and thinking, allowing the researcher to merge meaningful items and ideas together. On the basis of the data, the researcher categorised three themes for this study (for details, please refer to Table 1). Please note that to compare the current data and previous studies, the researcher combined the results and discussion chapters into a single chapter.

Table 1

Themes and subthemes

Themes and Subthemes
Positive Experiences
Student-Teachers' Positive Experiences
Online Classroom Students' Positive Experiences
Technology Education is the Trend
Challenges of Technology-Assisted Education and Online Learning
Preparation for Online Classroom Environments
Challenges from their Home and Family

Positive Experiences

Student-Teachers' Positive Experiences

Many participants indicated that their online student-teaching internship offered special experiences to them, regardless of the covid-19 pandemic. Although the classrooms and student-teaching internships may eventually return as on-campus and in-person modes, online student-teaching internships should become one of the options for student-teachers, said:

...I am so glad that I can see my students online as an online teacher...I am so glad to see my students online...I like online education...and the online teaching platform offered as the stage...to provide our teaching and passion to students many miles away from my home and our university...it does not show any differences...we are good student-teachers and they are good students...(Participant #17, Focus Group)

Teaching is an isolated and difficult occupation with a high turnover and attrition rate (Weiner, 2012). Unlike other positions which may require teamwork and group solutions, teachers, including pre-service and in-service teachers, usually need to handle their classroom management and activities alone. The student-teaching internship is one of the last chances for student-teachers to receive feedback from experienced peers and supervisors (before they manage their own classroom alone). However, as mentioned by some previous studies (Gok et al., 2021; Mellon & Kester, 2004; O'Dowd, 2011), students in rural and remote regions continue to receive their education via distance learning and online learning. Therefore, the need for qualified online teachers still exists. In this study, all participants had positive experiences with their online-based student-teaching internships. Many even believed that the online classroom environment enhanced their understanding and teaching horizons. Two participants made the following comments:

...both on-campus and online teaching are good...our student cohort all expressed positive experiences about our student-teaching internship...this was the unique experience...because we met students online...but the online experiences did not limit our outcomes and the activities...(Participant #8, Focus Group)

...we all needed the online experiences because there will be blended learning in the future...we learnt the same knowledge and enjoyed the same activities...students were actively engaged because of our instruction...the outcomes were excellent and should be continued...(Participant #4, Interview)

Online Classroom Students' Positive Experiences

...students were excellent in answering...they are the same...excellent...as all other students...online platform connected us together...but not bring us away ...I can ask questions...and they can answer me without problems...(Participant #15, Interview)

In addition to the student-teachers' personal experiences, the behaviours of their classroom students and the feedback they received from them also played roles in their student-teaching internship experience. All the participants provided positive observation notes and lesson reflections based on their student-teaching internship experiences. Two stories were captured:

...students were active...they answered questions...and were willing to learn...perhaps some students were...not paying attention...but student-teachers and the classroom teachers created some interactions and games...so all students could engage...it is just like a normal classroom with a camera...(Participant #12, Interview)

To sum up, these positive experiences (i.e. their student-teaching internship experiences and the students' reactions and behaviours) had important effects on the self-efficacy, sense-making processes, and teaching experiences of the student-teachers (Tayan, 2017). Many argued that "the online platform pulled us together from all directions" (Participant #13, Focus Group). Our findings confirmed that such experiences play an important role in enhancing student-teachers' self-efficacy (Bandura, 1993; Bandura & Adams, 1977). In line with the social cognitive career and motivation theory (Dos Santos, 2021), the researcher found that personal considerations (i.e. psychological and internal factors with self-efficacy) and surrounding environments and individuals (i.e. social and external factors) played roles in the student-teachers' experiences and sense-making processes (Bai, 2022). The participants expressed their positive experiences regardless of the restrictions of online platforms and locations (Chen & Bryer, 2012). Positive personal experiences and feedback confirm that these two factors may impact their experiences (Lent et al., 1994; Lent & Brown, 1996).

Technology Education is the Trend

...two decades ago...children played toys and card games...nowadays, children play cellphone and computer games...technology is in our life...why don't we use these technologies in education and teaching...don't be afraid of cellphones and computers...we can use it as the educational tools...(Participant #16, Interview)

For decades, many teaching qualification courses and programmes were designed for pre-service teachers and student-teachers to gain their initial licence. However, many

textbooks, classroom materials, student engagement games, physical teaching and learning materials, and interactive activities were designed based on the traditional and on-campus classroom environments. Although many of the curricula and instruction methods for teaching qualification programmes were designed based on on-campus teaching and learning outcomes and environments, technology-assisted education and online education have become the trend this decade, particularly during and after the covid-19 pandemic (Atmojo & Nugroho, 2020). In other words, the covid-19 pandemic offers opportunities for all parties to rethink and redesign their materials based on educational trends. The researcher captured some stories related to these ideas:

...online courses have been here for two decades...but only a few teachers and student-teachers want to learn it because we believed teaching...should be taught on-campus...but after the covid-19 pandemic, we changed our views...we need to understand that we have the needs of online teaching...(Participant #2, Focus Group)

...we learnt how to combine technology and computer-aided teaching in our classrooms...this covid-19 pandemic offered us the chance...for this blended and unique learning...student-teachers and in-service teachers should think about technology learning in all subjects and classrooms...(Participant #10, Interview)

In line with some previous studies (Güntaş et al., 2021; Kan, 2015), the researcher found that combining technology-assisted and computer-aided technology in classroom environments is important. In this study, the online-based student-teaching internship provided the chance for student-teachers to use technology in their supervised classroom environments. All participants expressed their positive experiences of technology-assisted and computer-aided teaching environments during their student-teaching internships.

Challenges of Technology-Assisted Education and Online Learning

...it is impossible to do some experiments and lab work at home...I taught at home...and my supervisor was at home too...we could not conduct any real lab experiments...but show students some YouTube or pre-recorded videos...(Participant #5, Interview)

Although many families, schools, and communities believe online teaching and learning may serve as an alternative, some students, teachers, and subjects face challenges. For some courses and subjects, on-campus and face-to-face instruction is essential. A previous study (J. Brown et al., 2013) indicated that culinary arts and kitchen management (i.e. vocational subjects) might be taught via live lessons and pre-recorded lessons. However, the outcomes could be different due to the equipment and background of students' homes. In this study, the researcher found that some other subject areas face the same challenges. Several interesting stories were captured:

...it is very hard to teach music, singing, and chorus online...we need to have...us to sing in front of us...teach how to breathe...and how to use our voices...from the online courses...we could only do music

appreciation...listening...and music history...or some theoretical knowledge...(Participant #11, Interview)

...we had a very challenging time for physical education and sports...my supervisor and I needed to do a series of exercises in front of the camera...students followed us after we showed them the exercises...as we had more than 50 students in an online classroom...we could not really provide feedback to each...but it could be interesting to have online sport and physical education courses...(Participant #9, Interview)

Many participants expressed their concerns about vocational-based, interactive-based, and experimental-based courses, which cannot be taught online from the online learning platform. Although a previous study (J. Brown et al., 2013) argued that vocational-based courses might be taught via both live and pre-recorded lessons, the outcomes may not be the same as those achieved through on-campus courses. However, in line with the self-efficacy theory, the researcher found that the restrictions from the online learning platform and the online-based student-teaching internship did not reduce the self-efficacy and confidence of the participants. Instead, many believed that “the online learning experiences offered us [both students and school staff] opportunities to learn the new learning methods” (Participant #3, Interview) (Liu & Duan, 2022). In line with the social cognitive career and motivation theory (Dos Santos, 2021), the researcher found that the surrounding environments and individuals, and particularly the participants’ willingness to use the technology-assisted tools and methods, played important roles in the online-based student-teaching internship, which significantly increased and expanded the participants’ experiences and sense-making processes (Kwee, 2022).

Preparation for Online Classroom Environments

One of the concerns about an online-based student-teaching internship might be the understanding and arrangement of the online-based classroom environments. Classroom students, student-teachers, teachers, and supervisors are trained as on-campus personnel (i.e. learners and workers) in a traditional school environment (Han et al., 2018; Ingersoll & Smith, 2003; Weiner, 2012). Therefore, an online classroom environment might cause some inconvenience to some personnel, including, but not limited to, students, teachers, school staff, administrators, and even parents (Damayanti & Rachmah, 2020). However, in this study, all participants expressed that after a short period of adjustment, many parties were ready and prepared for the online classroom environment as they were used to technology-oriented living styles and environments (e.g. use of cellphones and computers). The researcher captured the following stories:

...students were all ready for the online classroom with the computer, cellphone, and iPad...schools and the government...afraid the technology would impact concentration...but we were wrong...they were all good to learn...and enjoy the computer-aided classroom...(Participant #14, Interview)

The researcher found that computer-aided and technology-assisted teaching and learning tools and methods are widely used in different types of classroom environments (before

and during the covid-19 pandemic). Although some teachers need some training in relation to the materials, this challenge could be solved with administrative support. In line with the self-efficacy theory (Bandura, 1993; Bandura & Adams, 1977), the researcher found that the student-teachers' positive experiences with the use of technology and computer-aided methods played significant roles in their online-based teaching experiences, despite some challenges: "the internet was not very stable...but we could fix it soon...we all understood the problems..."(Participant #5, Interview).

Challenges from Their Home and Family

Besides some challenges due to technology shortages and misunderstanding of computer-aided methods and materials, some participants expressed their concerns about their backgrounds (i.e. home environment, family issues, responsibilities etc.) during the student-teaching internship. Unlike traditional-age students who usually do not have family responsibilities and children, some Master of Arts in Teaching students are second-career learners with children and family responsibilities. As they had to stay at home for the online-based student-teaching internship, they needed to handle the voices and responsibilities of their children and family members:

...my sons needed to have class at home too...they were very noisy...and my students could hear my sons' voices...just like all people had different classes in the same house...when my sons had a break, they came in front of my camera...they did not know I was teaching in front of the camera...(Participant #7, Focus Group)

...my family lives in a small apartment...my children needed to have their own Zoom classes too...so my teaching might interrupt...my children's classes...the voices of their teachers...my students could hear their classes too...(Participant #1, Interview)

Like the student-teachers, the students in the online classroom environments also experienced interruptions because of their parents, siblings, and background voices. Some participants shared their stories:

...some students could not concentrate on their studies because their siblings were sitting next to them...not all students could stay in their individual rooms...some might need to share materials and tools with other siblings...it was hard for all people...(Participant #10, Focus Group)

...many parents needed to work from home too...parents, students, and us [teachers] experienced stress and burnout too...but we all understood the situation...we needed to handle different matters and challenges for online learning...students, teachers, and parents were suffering too...(Participant #15, Focus Group)

In line with the social cognitive career and motivation theory (Dos Santos, 2021), the researcher found that the surrounding environments and individuals played significant roles in the online-based student-teaching internship and the sense-making processes of

the participants. As many studies have stated (Al-Junaid et al., 2019; Lightbown & Spada, 2020; Weiner, 2012), current teaching and learning instructions were designed on the basis of on-campus classroom environments. Online and home-based teaching environments might (positively and negatively) impact the experiences of all parties. However, due to the understanding of all parties (e.g. students, teachers, parents etc.), the participants in this study overcame the challenges and expressed positive experiences of the online-based student-teaching internship (Lin et al., 2017; Shea & Bidjerano, 2014). More importantly, the online-based experiences and challenges

LIMITATIONS

The researcher identified several limitations of this study. First, many courses and programmes may experience challenges from online teaching and learning experiences, particularly during the covid-19 pandemic. As this study used the Master of Arts in Teaching programme as an example to outline the experiences and sense-making processes of the online-based student-teaching internship, other students may also experience some similar challenges and problems. Therefore, future research studies may expand the samples, participants, and sites to other courses and programmes in order to capture a wider picture.

Second, the student-teaching internship is one of the vocational-based internship courses and programmes at the university level. However, many vocational-based courses, such as engineering, culinary arts, and sport management, may also need to transfer their on-site internship to online-based internship. Therefore, based on the structure of this study, future researchers may capture the experiences and sense-making processes of other vocational-based courses and programmes.

Third, as this study captured the voices of the Master of Arts in Teaching students (i.e. second career-changing teachers and adult learners), traditional-age students may also face similar or different challenges during their student-teaching internship. Therefore, future research projects may further investigate the problems of traditional-age students who need to complete their student-teaching internships via online platforms.

CONCLUSION

Student-teaching internship is one of the most important factors for teachers' qualifying programmes. Although some coursework requirements can be completed online, many programmes require student-teachers to complete their internship on campus. However, the covid-19 pandemic significantly changed the teaching and learning strategies and platforms for many students, teachers, and schools. Many student-teachers may be confused because of the online teaching and learning environments during their career stage. The results of this study outlined the experiences of an online-based student-teaching internship and how it influenced the sense-making processes of student-teachers in online school environments. Based on the findings from the participants, many indicated that they were satisfied with their online student-teaching internship due to the understanding and application of online teaching and learning tools. More importantly, the study may provide support or ideas to university leaders, supervisors, department heads, student-teachers, and policymakers to reform and polish their

teaching qualification programmes with different types of delivery modes in order to meet the needs and educational trends of the coming decades.

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