E-learning Practices in Preservice English Language Teacher Education in Hong Kong and Mainland China

by

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Statement of Originality

I, YANG RUIQIAN, hereby declare that I am the sole author of the thesis, and that the material presented in this thesis is my original work except for the material indicated in the acknowledgments. I further declare that I have followed the University's policies and regulations on Academic Honesty, Copyright, and Plagiarism in writing the thesis, and that no material in this thesis has been submitted for a degree in this or other universities.

Abstract

English, as a worldwide language, is the language most often used both online and offline. The implementation of e-learning practices widens learners' horizons through different educational opportunities and enhances their learning abilities, and it reduces the costs of higher education. Upon reviewing the literature, some research gaps related with this study are listed. The first was that preservice English teachers sometimes lacked adequate knowledge and skills to choose the proper educational technologies for implementing e-learning in their field practices. The other was that some teacher educators over-focused on their choices of educational technologies and not on their implementation of e-learning in a precise subject. Although many studies have focused on the use of English learning strategies and skills, this research will focus on implementation of e-learning practices in preservice English language teacher education. Second, the existing research lacks adequate coverage of the training for preservice English teachers to become English language teachers, when that training is conducted through implementing e-learning practices in English language learning strategies. Meanwhile, other current issues are apparent: preservice English teachers do not have sufficient resources to lead their teaching process using supplementary digital resources. The methods designed and used to implement e-learning practices are vital aspects of those implementations. E-learning practices in preservice English language teacher education have been discussed extensively in Hong Kong and Mainland China. It is important that teachers nurture students' digital literacy and their abilities for critical thinking and conducting logical presentations. Student teachers not only understand the pros and cons of e-learning practices in preservice English language teacher education, but also the general developments of teacher education. This study aims to investigate how e-learning practices are implemented in English language

learning in preservice teacher education courses in Hong Kong and Mainland China. Three hundred and thirty student teachers of English were involved. The mixed-method approach was adopted in the research. The research instruments in this research align with the technological pedagogical content knowledge (TPACK) framework. In the findings section, the results of the study aim to fill research gaps. The similarities and differences in the e-learning practices for English language preservice teacher education between Hong Kong and Mainland China are investigated. Meanwhile, the reasons for implementing e-learning practices in English language learning during preservice teachers' field experiences in schools are discussed. Finally, this study gives suggestions for future relevant research into training student teachers to become English teachers using e-learning to teach the English language.

Keywords: e-learning practices, preservice teacher education in China, comparative study, TPACK Model

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List of Abbreviations

BYOD	Bring Your Own Device
CERE	College English Curriculum Requirements
CITC	Corrected-item-to-total-correlation
CK	Content Knowledge
CMs	Certificate Masters/Mistresses
DW	The Durbin-Watson
e3L	Enrich, extend and evaluate the students 'learning
EDB	The Hong Kong Education Bureau
EFL	English as a Foreign Language
ESL	English as the second language
ESP	English for a Specific Purpose
GNS	The Government Normal School
GTC	Grantham Training College
HK	Hong Kong
ICT	Information and Communications Technology
ILE	The Institute of Language in Education
KMO	Kaiser-Meyer-Olkin
LMS	Learning Management System
LPATE	The Language Proficiency Assessment for Teachers Examination
ML	Mainland China
NTC	Northcote Training College
PCK	Pedagogical Content Knowledge
PGDE	The postgraduate Certificate in Education
PK	Pedagogical Knowledge

RTC	Rural Training College
SEN	Special Educational Needs
SPSS	The Statistical Package for Social Science software
SRBTC	Sir Robert Black Training College
TaD	Techers as Designers
TAM	Technology Acceptance Model
TCK	Technological Content Knowledge
TEM8	The test for English Majors-the Band 8
TK	Technological Knowledge
TLC	Technology Learning Cycle
TPACK	Technological Pedagogical and Content Knowledge
TPK	Technological Pedagogical Knowledge
TTC	Hong Kong Technical Teachers' College
UGC	The University Grants Committee

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Chapter 1: Introduction

1.1 Background

With the continuing advancement of technology, there are strong demands for reforms in teacher education both in Hong Kong and mainland China. The professional development of teachers in implementing e-learning practices has led to massive debates in the field of education. Digital literacy needs to be emphasized to every educator. Scholars have pointed out that the implementation of e-learning practices in teaching the English language is important for the professional development of teachers of English (Brewster, Ellis & Girard, 2010; Crandall, 2001; Egbert, 2003). Shin and Crandall (2014) argued that there is great scope for learning English in the 21st century and this scope is influenced by technology-mediated communication. Digital literacy is helpful not only for revising curriculum design to adapt to teaching requirements in the 21st century, but also to give practical suggestions for refining the implementation of e-learning practices in teacher education. English, as a worldwide language, is the language most often used both online and offline. Teachers should nurture students' digital literacy and their abilities for critical thinking and conducting logical presentations. Therefore, it is very important that both educators and students improve their English skills and knowledge by technology-mediated instruction.

Teacher education curricula in the 21st century determined that it was necessary to develop preservice English teachers' skills in using educational technologies. According to Leaver, Ehrman, and Shekhtman's (2005) research findings, three approaches can be applied in the professional development of teachers: the theory-

based approach, the coaching approach, and the reflective approach. Those approaches were identified by Wallace (1991) and applied by Brewster, Ellis, and Girard (2010), Crandall (2001) and Egbert (2003). All three approaches influence the relations among educators, students, and schools. Meanwhile, the approaches can provide guidelines for designing professional development activities for teachers. The typical elements for e-learning courses are kickoff events, pre-course learning activities, cycles of learning events, a final assessment with feedback, and conclusions (Voogt, Laferriere, Breuleux, Itow, Hickey & McKenney, 2015).

The effective models for implementing educational technologies were seldom the focus of previous studies. Preservice English teachers' beliefs about incorporation of educational technologies were a feature that influenced the designs of effective models. Those beliefs included pedagogical beliefs, self-efficacy beliefs, and beliefs about previous experiences. Akyuz (2018) states that there is bigger gap between preservice beliefs and their pedagogical knowledge. The weaker correlation existed between pedagogical knowledge and technological knowledge as same time. Teaching culture sometimes does not match with the existing the educational technology in the classroom, since teachers sometimes shake teachers' sense of efficacy of teaching (Olson, 2000; Voogt & Mckenney, 2017). Cultural values have been found to dramatically influence human attitude and behaviors. Cutler (2005) stated that cultural values are the primary focus that shapes human ways of thinking. After participating in an in-classroom study from their teachers, most students followed the teachers' suggestions about incorporation of e-learning. Students from Asian and Western countries reflect the influences of their cultural values on their attitudes toward their teachers and their studies. The power that teachers wield is very strong for Asian students, who deeply

respect their teachers and mimic their behaviors and ways of thinking. Specifically, in Asia, teachers serve as authorities in the students' academic life. Sometimes students limit their use of educational technologies because their teachers' cultural values profoundly influence them.

Since TPACK framework explains the knowledge teachers need to integrate technology into teaching practice, therefore teacher need to know how plant technological content and pedagogical knowledge in difference instructional practices (Voogt & Mckenney, 2017). Thus, some scholars list the reasons about Technological Pedagogical and Content Knowledge (TPACK) framework is necessary for teacher education. Firstly, TPACK framework show the information required for instructing in teacher professional development in the digital era (Chai, Koh & Tsai, 2013). Meanwhile, TPACK framework guides the dynamic process of learning and constructing their knowledge for individual teacher educator. The implementation of e-learning practices in teacher education transforms their teaching practices, in various ways, that differ from those in the traditional teacher-professional-development program. Saab and Stengs (2014) agreed that teacher educators use a flipped classroom approach to change preservice English teachers' learning environment and enhance preservice English teachers' technological pedagogical knowledge and skills. Preservice English teachers perform more professionally when they utilize the flipped classroom method, and they have succeeded in developing their TPACKs extensively. As Bosch (2009) found, preservice English teachers derive more stimulation from educational technologies, and their motivation for learning improves.

Secondly, based on the TPACK framework, teacher educators shape their ongoing

knowledge about their technology, pedagogical and content knowledge and it also helps teacher educators and student teachers to understand the teaching practice in 21st century. Teacher educators gradually follow this framework to organize practice in the technology-enhanced learning environment (Olofson, Swallow, & Neumann, 2016). For instant, general approaches for designing e-learning courses are the self-paced approach and the instructor-led approach (Ghirardini, 2011). The quality of e-learning is decided by learner-centered content, granularity, interactivity, and personalization. The effectiveness of e-learning is influenced by the level of the learners' performance and the learning content. E-learning instructions include expositive methods, application methods, and collaborative methods. Meanwhile, effective e-learning practices have four main characteristics: combining structured and ad hoc solutions, localization, allowing downloads, and asynchronous courses. However, existing training materials and documents cannot be automatically transformed into e-learning materials from websites.

Finally, based on previous relevant studies, for instant, the scaffolding for preservice teachers' technological pedagogical content knowledge (TPACK) frameworks and the implementation of technologies in preservice teacher education are presented by Shen and Hannafin (2013). They state that preservice teachers prefer multiple technological projects with actual teaching situations and contexts, in order to develop their TPACKs. However, preservice teachers' previous experiences are a factor that may influence the scaffolding of incorporation of educational technologies. Only few studies have examined how TPACK framework detail to specific subject domain (Agyei & Voogt, 2014; Hutchinson & Woodward, 2014; Jimoyiannis, 2010). Meanwhile, there are few courses for pre-service teachers to learn how to improve the knowledge of integrating

educational technologies (Voogt & Mckenney, 2017). Therefore, outlays in develop the TPACK of pre-service teachers is desperately required.

Although the implementation of e-learning in teacher education helps preservice teachers and teacher educators to obtain knowledge and skills by using educational technologies, for example, Mohammadi (2011) explored the advantages and disadvantages of e-learning's effects on language learning, and all of those advantages and disadvantages were referred to in the design of the research instruments used in this study. When e-learning practices are used in language learning, some essential parts, such as electronic devices, online games, blogs, the Internet, and multimedia, should be considered. Ghirardini (2011) showed the methods for developing e-learning courses. The lower cost of conducting e-learning courses compared with that of traditional courses is a core advantage. After students have taken e-learning courses, their cognitive, interpersonal, and psychomotor skills improve. Lai, Li, and Wang (2017) discussed the importance of e-learning technologies, in reference to their in-classroom study conducted from the students' perspective. Furthermore, underpinning the TPACK framework in preservice teacher education, preservice teachers gradually increase their confident in the future teaching activities is largely influenced by gradually gained confident during their training (Larkin, Jamieson-Proctor & Finger, 2012). Temporarily, preservice teachers develop their learning and teaching motivation. How to evaluate the e-learning course gradually becomes a popular topic. Evaluations for e-learning courses are guided by the learners' reactions, actual learning, behavior, and results. The four key aspects for evaluating teacher-training programming are its contents, principles, guidelines, and techniques (Kirkpatrick & Kirkpatrick, 2006). Albion (2001) mentioned that several aspects of the implementation of information and communication

technologies relate to professional development, including networking, experience, and motivations of teachers. When teacher educators train their students, they lead their preservice English teachers in learning how to understand the complexities of theoretical learning and of field experience practices. Teacher educators need to change their minds about simply telling their students to learn, and instead they should help them rebuild a view of teaching creatively and critically. Preservice English teachers should discover the clear connection between the knowledge they gain and the real conditions they face in classroom teaching experiences. Meanwhile, a model for evaluating e-learning strategies used in English language learning had four different levels of evaluation, including formative evaluation, effective evaluation, impact evaluation, and maintenance evaluation (Spratt, 2009). On the basis of this model, implementations of e-learning practices in preservice English language teacher education were evaluated in this research. First, the students' learning assessment and performance were evaluated by formative evaluation. Second, the application of English skills and knowledge by the students via implementations of e-learning practices were evaluated by effective evaluation. Third, the influence of e-learning practices on the teaching methods in the whole university was evaluated by impact evaluation. Finally, maintenance evaluation was used to evaluate the way in which policy-makers and other relevant evaluative departments offered financial and policy support.

However, there are some negative views about the use of e-learning. Hsu (2010), McCoog (2008), Moersch (2011), Smith and Greene (2013), Swain (2006) and Walker, Redmond, and Giles (2010) agreed that the incorporation of e-learning into teacher education was not valuable for improving the teachers' TPACKs and the current

curriculum. Yeh, Lin, Hsu, Wu, and Hwang (2015) summarized the dimensions of the TPACK framework in their research: comprehension, application, analysis, synthesis, and evaluation. Those dimensions act as the standards for judging whether research uses the TPACK framework properly. Furthermore, the dimensions are considered as the rules by which to revise their rubrics for their students. A majority of the participants in Yeh et al.'s (2017) research believed that effectively using educational technologies with the TPACK framework increased the interactions between students and teachers. Additionally, Kucírková and Jarkovská (2016) introduced e-learning in an English for a specific purpose (ESP) course and tried to find answers relating to professional development and field practices. They agreed that instruction in ESP was helpful for investigating the learners' behaviors and constructs. E-learning enhanced the interaction between students and teachers in ESP instruction. In addition, the students' learning continuity was guaranteed through e-learning in ESP instruction. However, in Kucírková and Jarkovská's research, the participants' gender did not influence the incorporation of e-learning in ESP, which differs from others' findings. Kucírková and Jarkovská (2016) concluded from their data that the most negative comments were from students who did not attend the courses, and the most positive attitudes came from students who were often active participants in ESP courses that used e-learning methods.

Before the return of Hong Kong to China in 1997, the colony's educational system was under British colonial rule and the instructional medium language in higher education was normally English. Many Hong Kong locals of recent generations speak English. After 1997, educational reform was launched in Hong Kong. A great number of items were added to the curriculum, such as civic education and moral education and so on (Education Commission, 2000). A series of chronological studies of teacher education

in Hong Kong reflected the differences and changes from past to present, for instance, Attwell (1964), Ha (1990), Hayhoe (2002) and Zrozier (1976). In mainland China, Chinese is the official language and English is taught to students from an early age. The policy from the 2004 College English Curriculum Requirements (CERE) in China requires preservice English teachers to combine upgraded pedagogy with technically oriented training; meanwhile, the requirements reveal a new direction for designing a compulsory syllabus for learning English with e-learning methods (Gao, 2012). Both the traditional learning environment and the e-learning environment are necessary in higher education in mainland China. Learning theory and content differ between the in-class learning environment and the e-learning environment. The e-learning environment has some unique features, such as its dynamic and diverse use of learning resources. In addition, students need to learn how to select and classify the learning resources by themselves when they are in an e-learning environment, and they need to learn how to use the resources effectively. Thus, self-management and self-supervision are vital for students when they are in an e-learning environment. Finally, students can choose to learn from the different training programs in an e-learning environment without time limitations (Gu, 2004). However, students sometimes misunderstand aspects of e-learning practices — for instance, some students wrongly equate online learning with e-learning. In addition, some teachers directly upload the teaching materials and resources without any design or selection. Meanwhile, teachers may provide less dynamic assessment to track their students' learning achievements. Some teachers even avoid accepting the new educational technologies and refuse to learn how to use those technologies.

Currently, many universities understand that education is far more than simply

providing students with professional knowledge (“The Fourth Strategy”, 2016). Thus, colleges and universities leverage technological advances in innovative ways for the promotion of whole person education. The concept of whole-person development was launched both in Hong Kong and in mainland China. In Hong Kong, whole-person development is called whole-person education (“The Fourth Strategy”, 2016). It commits individuals to lifelong learning, integrity, and professionalism, and determines who can be responsive leaders and communicators in their fields. Whole-person education is a total learning experience. Its programs and teaching philosophy nurture informed, well-rounded students who are ready to meet the challenges of a globalized, knowledge-based economy. Students are encouraged not only to embrace their studies but also to explore the wide range of extracurricular activities that the university offers, from internships to international exchange programs. Similarly, in mainland China, the content of whole-person development includes the ability to study independently and to collaborate with others, the ability to be self-disciplined, self-managing, and self-monitoring, the ability to proactively access information and filter that information, the ability to interact with people, the ability to handle relationships between homework, study, and the like, the ability to be proactive, the ability to seek help, the building of self-confidence and perseverance, the development of the ability to adapt to one’s own learning style and strategy, and the ability to lead and control situations. The vital role of teachers in this approach cultivates students’ learning capabilities (Gu, 2006).

Due to the reasons stated above, the goal of this research is therefore to explore the implementation of e-learning practices in preservice English language teacher education in Hong Kong and mainland China, and to determine how these practices can be improved and implemented by preservice English teachers during their field

practices.

1.2 Study Rationale

Recently, the professional development programs for preservice teachers have successfully integrated e-learning. Based on research conducted by Dall'Alba and Sandberg (1996), Murray and Male (2005), and Zeichner (2010), preservice English teachers receive fruitful feedback about their instruction in their field practices. Meanwhile, Lim, Yan, and Xiong (2015) found that the implementation of educational technologies for preservice English teachers is influenced by the subjects they teach. For instance, in China preservice English teachers in science, psychology, and mathematics find it easier to apply educational technology than preservice English teachers in early childhood education and Language of Literature do. They suggested that preservice English teachers should consider the subjects involved when they adopt the new educational technologies into their field practices. Preservice English teachers should collect various resources for implementing educational technologies in their training processes and field practices.

Nowadays, the competence of preservice English teachers in their field practices has become a popular issue. Summarizing the findings from research conducted by Dall'Alba and Sandberg (1996), Murray and Male (2005) and Zeichner (2010), two common situations for enhancing teaching experiences using educational technologies in real classrooms are recommended. Firstly, preservice English teachers accept training courses with specific conditions and educational technologies. Secondly, preservice English teachers record their technology-using experiences. Meanwhile, problems sometimes arise during the implementation of educational technologies in preservice

English teachers' field practices. For instance, preservice English teachers may lack experience with incorporation of technology into their teaching methods and field-based training.

The incorporation of educational technologies into the teacher training process is relevant and applicable (Howland and Wedman, 2004). The majority of preservice English teachers resolve their students' questions effectively. Almost half of the preservice English teachers' participants in Howland and Wedman's study reported that their content knowledge (CK) was well implemented in their course. They stated that they had learned meaningful ways to use educational technologies, based on the Technology Learning Cycle (TLC) model. Almost all of the participants believed that the incorporation of educational technologies was valuable to them as preservice English teachers in fulfilling their requirements for professional development. Based on the TLC model, the preservice English teachers could gain a deeper understanding of how educational technologies can enhance their professionalism with the TPACK model. Future studies based on the research from Lim, Yan, and Xiong (2015) should evaluate the potential for ICT curriculum development in different subjects.

Based on the research of Tseng, Lien, and Chen (2016), preservice English teachers' TPACK have been enhanced by implementing web conferencing technologies. The main changes include improvements in the preservice English teachers' abilities to problem solve and to apply educational technologies. In addition, preservice English teachers can now review and revise their instructions from different perspectives. Finally, preservice English teachers can be inspired about their teaching practices by teacher educators via web conferencing technologies. At the same time, Yang and

Walker (2015) discussed the challenges inherent in teacher development programs, with regard to the pedagogical framework in English as a second language (ESL) classrooms. Those challenges include motivating students to learn English, enabling students to apply the content they learn, and engaging students in their classes. The potential for incorporation of technology into the pedagogical framework has not been fully explored and should be considered for further research (Yang and Walker, 2015). In Lim, Yan, and Xiong's research (2015), they successfully designed a series of training courses to develop the technological and pedagogical knowledge of the participating preservice English teachers. Since then they found teaching experiences in China have limited preservice English teachers' competence in using educational technologies in their field practices in China.

1.3 Significance of the Study

TPACK framework, as a foundation, provides theoretical principles for teacher training programs (Graham, 2011). Preservice teachers can use education technologies in general ways as well as in specific ways within subject-domain. Stand on study about how teacher use different methods to design technology-enhanced learning and teaching influence teachers' TPACK consideration conducted by Koh and Chai in 2016, teachers' knowledge about technology integration is demanded to develop. When teachers design their teaching activities, teachers frequently involve their lens on their technological pedagogical and content knowledge. Sometimes they just do not clearly aware the categories of these knowledge. On the other hand, TPACK framework scaffolds the teachers to design their teaching activities within diverse perspectives. Depend on the requirements of curriculum development in each subject, preservice teachers can focus on the most important construct within the TPACK framework rather

than each component (Akyuz, 2018). Preservice teachers express their experience of implementing educational technologies via TPACK framework.

Consequently, as Tondeur et al., (2012) mentioned, how TAPCK framework leads preservice teachers to prepare their instruction with education technologies integration becomes more and more popular. In detail, TAPCK framework decodes the knowledge of how to use technologies to enhance teaching and learning in the specific content areas. (Voogt & Mckenney, 2017). The TPACK framework has adopted in implementation of educational technologies in teacher education (Gür & Karamete, 2015). Preservice teacher self-confidence in using educational technologies has large relation with their Technological Pedagogical Content Knowledge during the training. Existing researches point out the positive relations between TAPCK framework and teaching practice when they integrate educational technologies in teaching and learning (Reyes, Reading, Doyle & Gregory, 2017; Urban, Navarro & Borron, 2018). Therefore, each construct in TPACK framework should be accurately defined (Graham, 2011). In a word, the TPACK framework is necessary for preservice teacher education to develop their specific subject knowledge, pedagogical methods and relevant technologies (Krause & Lynch, 2016).

Therefore, this study is based on the TPACK framework and illustrates and compares the general statements of e-learning practices in preservice teacher of English education in Hong Kong and mainland China. Through this study I aim to explore what and how e-learning practices contribute to English language teacher education. At the same time, this study focuses on achieving practical consequences, ways of improving the English language teacher training program through e-learning and to lead to widespread

discussion in Hong Kong and mainland China. The study not only thoroughly discusses the results of implementing e-learning in English language teaching and learning, it provides referenced research design methods for future studies. The findings will help teacher educators and preservice English teachers to understand how to implement e-learning within the framework of TPACK and help teacher educators to create an effective teaching and learning environment. Concurrently, we can have a clear picture of the merits and defects of current e-learning practices in English language teacher education. We seek to find approaches to implement the TPACK model that are closely attuned to the preservice English teachers' educational practices, as found in their statements. This study suggests the usage of e-learning in English language teacher education in the future. Meanwhile, this study's potential solutions and conclusions show suggestions to in-service teachers which hope to decrease their teaching burden.

1.4 Organization of the Thesis

This thesis comprises eight chapters. Chapter 1 introduces the background for the study, while Chapter 2 and Chapter 3 review the relevant literature. Chapter 4 explains the research design and presents the study's methodology. The fifth through seventh chapters provide the answers to the research questions. The eighth (final) chapter discusses the results of the research and presents the conclusions that can be drawn from those results. The chapter ends by suggesting potential topics for future study.

Chapter 2: Literature Review

2.1 General Views on E-learning and E-learning Practices

First subsection of chapter two includes eight parts, including 1) *the concepts of e-learning,* 2) *diverse e-learning styles,* 3) *e-learning acceptance factors,* 4) *categories of e-learning practice*, 5) *approaches for implementation of e-learning practice, 6) benefits of implementation of e-learning practice,* 7) *assessment model for implementation of e-learning practices in English language learning ,* and 8) *limitations of implementation of e-learning practice*.

2.1.1 E-learning Concepts

The definition of e-learning is complex and is not unique to the field of education. Various educators support different views on e-learning. Technology, content, and learning design are three main components of e-learning (Leszek, 2012). Technical details, the administration of teachers' in-class teaching, and the application of ICT tools in education make up the technology component. How financial support, student life, and work life influence the application of e-learning is considered to be part of content. Institutional policies, in-class pedagogies, and teaching materials are studied as part of the learning design. Meanwhile, e-learning in general provides a new approach to connecting and researching technology-enhanced learning in different disciplines.

E-learning is a collective term that generates both agreements and disagreements in educational and academic research. Haythornthwaite (2011) offered perspectives on the dimensions of e-learning research. The research dimensions of e-learning can be

divided into two types: research for e-learning and research about e-learning. Research *about* e-learning means examining e-learning as a pedagogical phenomenon. The relevant research methods include questionnaires and interviews about, observations of, and analysis of the special software designed for second-language learning and document analysis. That type of research mainly implicates policies, practices, and model designs, and formed the guidelines for this research. Research *for* e-learning is more practical and mainly focuses on understanding and improving the models designed for e-learning. Turvey (2010) agreed that e-learning is a dynamic relation that connects policy-makers, instructors, and learners, and he investigated certain appropriate skills that preservice English teachers can use to develop their implementations of e-learning practices in teacher education.

2.1.2 Diverse E-learning Styles

The common styles of learning are visual learning, auditory learning, and kinesthetic learning--e-learning generally combines the three. Based on research conducted by Gulbahar and Alper (2014) and Huang, Eugenia, Lin, Sheng, Huang and Travis (2012), e-learning styles should focus on experiencing, reflecting, conceptualizing, and experimenting. Haythornthwaite (2011) agreed that e-learning is ecologic in the way that it compares and links information and communication technology and learning, and she further emphasized that information literacy is very important for each learner. Hsiao-Ching (2008) agreed that e-learning performance is influenced by the interactions among teachers, students, and the e-learning environment. The interactions between teachers and students should be tested from two aspects — one from the perspective of the students and their e-learning skills, testing their use in terms of experience and methods, and the other from the perspective of the teachers, testing their

strategies, attitude, and teaching methods.

To conduct research about using online training materials to teach and learn English on a developed platform, Osipov (2016) selected 40,000 users from *Gamification* as participants. After six months' training, Osipov found that the users' interests, learning content, and flexible techniques deeply influenced language learners to learn a foreign language on *Gamification.* Meanwhile, whether or not users had any special training had a less influential relationship with their options for using an e-learning platform. Jameson, Ferrell, Kelly, Walker, and Ryan (2006) completed e-learning pilot studies in the UK, focusing on collaborative learning and teaching, inter-institutional communication practices, and knowledge exchanges. Jameson et al. (2006) explored ten e-learning models in their study of 79 participants, via an online survey and interviews. The majority of participants had a positive attitude toward e-learning models and suggested building more knowledge-based online discussion groups.

2.1.3 E-learning Acceptance Factors

The technology acceptance model (TAM) is a measurement of users' intention to use computer technology and an e-learning system (Davis, 1989). Bower (2008) determined that technological affordance requires that e-learning tools match their e-learning tasks and complete the required questions. Tan (2015) introduced technology adoption models and other related models, including the most extensive model, the technology acceptance model. Meanwhile, Tan (2015) utilized and developed Davis's (1989) TAM for relevant research, as depicted in Figure 1. Sánchez-Prieto, Olmos-Migueláñez, and García-Peñalvo (2017) applied the TAM to a student-teacher professional development program. Where their study related to educational

technologies, two issues were involved: technology-using anxiety and self-efficacy. However, the academic year of the preservice English teachers had little influence on preservice English teachers' competence in using educational technologies.

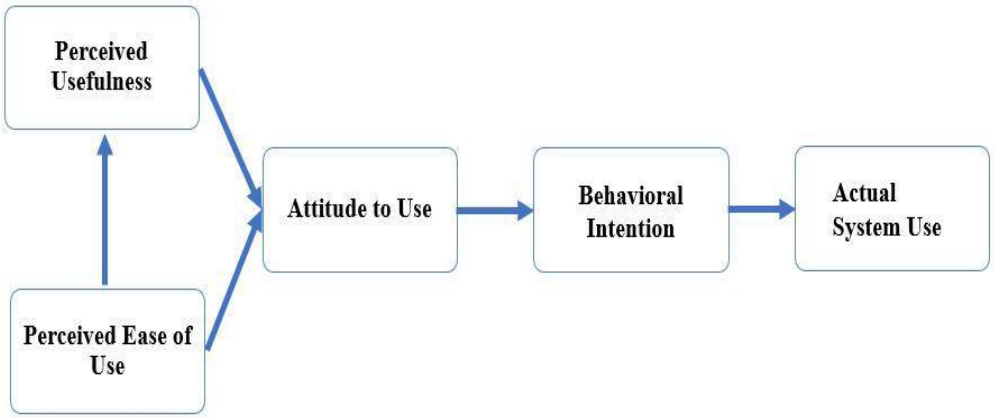

Figure 1. Tan's Revised Technology Acceptance Model (TAM)

The factors related to acceptance of e-learning is researched by Hrtoňová, Kohout, Rohlíková, and Zounek (2015) via a survey of 133 teachers from 16 different teacher education courses delivered by Moodle in the Czech Republic. They analyzed their data by using ANOVA and ρ-value tests, and they utilized Selim's (2007) report to summarize four basic types of e-learning acceptance and eight critical success factors. Their study included two parts: one part was teachers' previous e-learning experience and expectations for future development, and the other part was teachers' learning habits and evaluations of e-learning. The teachers' e-learning experience and their motivation were significant to their future development. However, initial digital technologies as the fundamental factors did not affect their e-learning acceptance. The teachers' expectations about e-learning courses influenced their completion of e-learning training courses in teacher education. The teachers' habits and the design of the training courses were statistically significant factors for the participating teachers'

acceptance of e-learning courses. However, gender, age, and types of schools were not significant factors.

Meanwhile, teaching with e-learning methods was useful for interaction among peers and for understanding the contents from the perspective of peers (Afzal, Safdar & Ambreen, 2015). Teaching with e-learning methods had the benefits of enhancing and transforming student-centered teaching methods. Afzal et al. (2015) summarized that the vital elements for learners are performance expectancy, social influence, facilitating conditions, and behavioral intention. Afzal et al. agreed that teachers, institutional factors, and the students themselves decided learners' acceptance of e-learning. The demographic information of their participants acted as variables that deserved to be recorded, meaning that researchers must focus on those factors during implementation of e-learning in teaching and training.

2.1.4 Categories of E-learning Practices

Based on the research by Holmes and Gardner (2006), e-learning practices can be divided into seven types. The first is S*earching and Selecting*. This practice is aimed at testing the abilities of collecting information from digital resources and the Internet. Second is *Exploring*, which means that learners explore the selected information in order to fit it to their needs and interests. Third is *Testing*. This practice asks learners to think about and test their hypotheses during their teaching process and gives them the capabilities to revise their teaching plans or pedagogies by testing the previous curriculum and teaching plans. The fourth type of e-learning practice is *Analyzing and Synthesizing*. This practice requires learners to absorb the information they have received by implementing their e-learning practices and to reconstruct sets of new

information to enhance their knowledge. The fifth practice is *Collaborating and Discussing*. This practice is aimed at ensuring that learners deeply understand newly acquired learning and share with others, and subsequently training them in how to combine their new knowledge with previous knowledge. One of the most common situations is learners work towards the same goal and connected each other by completing their collaborative learning activities and group discussions. The sixth type of e-learning practice is *Understanding and Applying*. This practice focuses primarily on how learners solve problems by applying their newly learned information and knowledge. Finally, the seventh practice is *Creating and Promoting*. This practice mainly trains learners to use their knowledge to create additional opportunities and a potential community through which others can gain knowledge by implementing e-learning.

2.1.5 Approaches for Implementation of E-learning Practice

As for the implementation of e-learning practices, the strategies-development cycle is referred by some scholars (Hernandez, Montaner, Sese & Urquizu, 2011). First, learners develop their e-learning resources and identify the quality of those resources. Next, they build their capability, which focuses on both the learners themselves and on the implementation of e-learning practices. This step means that the learners complete their self-improvement by successfully implementing e-learning practices and then finding the leaks in their present implementation practices in order to fix them. Finally, the learners choose the implementations of e-learning practices that match their own learning needs, even if those practices might not be perfect for others. From the perspective of constructivist pedagogy, Keengwe (2014) applied learner-centered design, effective e-learning environments, and pedagogies above technology as the

principles of effective e-learning practices. The pedagogies above technology comprise three approaches: the constructivist approach, the social constructivist approach, and the instructional approach. Keengwe (2014) proved that the constructivist theory is an important part of implementing e-learning practices.

2.1.6 Benefits of Implementation of E-learning Practice

From the results of pretests and posttests of 248 students to determine their attitudes toward online business management courses, Drennan, Kennedy, and Pisarski (2005) summarized that two aspects surfaced that were key in influencing the students' attitudes toward online learning. One was the ease and flexibility of access to the online learning materials provided by teachers. The other was the degree of the students' autonomous and innovative learning style. Generally speaking, the students felt satisfied and had a positive attitude toward a technological and autonomous learning style. Meanwhile, Singaravelu (2011) indicated that the use of e-learning practices can broaden learners' horizons through new and different educational opportunities, enhance learners' learning abilities, and reduce the overall costs of higher education. He argued that the methods designed for implementing e-learning practices are vital aspects of such implementations. In addition, the research results from Lewis and Fabos (2005) revealed that positive attitudes about e-learning in the teaching process can enhance how engaged students are with learning using methods other than just traditional teaching strategies. Finally, Laferrière, Lamon, and Chan (2006) agreed that the use of e-learning can provide not only tools but also the opportunity to help teacher instructors to better understand and apply the knowledge they have acquired, and to improve their strategies for future teaching practices that benefit their students.

2.1.7 Assessment Model for Implementation of E-Learning Practices in English Language Learning

The assessment model, used for teaching in an e-learning environment, has three aspects: design and organization, facilitation of discourse, and direct instruction (Anderson, Rourke, Garrison & Archer, 2010). Design and organization relate to the design of the teaching methods or media being considered. To facilitate discourse, teachers should create a positive learning environment to stimulate students to learn English by e-learning practices. Furthermore, implementing e-learning practices could encourage students to learn English, and this could be one criterion for effective e-learning practices in English language teacher education. Finally, direct instructions for clear learning content, assignments, and learning difficulty could be displayed during implementation of e-learning practices.

2.1.8 Limitations of E-learning

Four basic steps for implementing e-learning are analyzing the learning needs, planning the e-learning, delivering the e-learning, and reviewing the e-learning (Suparyanto, 2014). However, just as a coin has two sides, e-learning can have a negative side and can be limited under some conditions, mainly as a result of the loss of real-world experiences in learning and teaching (Ibrahim, Aminu, Tanglang & Nebath, 2015). First, there can be a conflict between traditional face-to-face instruction and teaching in e-learning environment, because in traditional face-to-face instruction teacher is core and necessary for completing teaching whole process, whereas in e-learning environment e-learning tools are supplemental formats for communicating teachers' instruction. Second, in some workplaces, e-learning cannot match the requirements of certain tasks. Thus, it is created to be a refresher for instruction. Third, some Asian countries still

propagandize high scores in examinations and competitions as being vital for students, thus making it harder to balance the implementation of e-learning practices with the traditional learning environment. Finally, learners may need a new learning environment, but e-learning practices can only serve as supplemental tools and are not real-world learning and teaching experiences.

The research of Yeh, Hsu, Wu, Hwang, and Lin in 2014 showed that limitations exist in the implementation of e-learning practices in teacher education. First, preservice teachers cannot ensure that they have used the proper resources in their field practice, because they have limited experience about assessment for properly using e-learning resources. Second, preservice teachers do not always understand the function of the TPACK framework in their professional development. Thus, Yeh at al. (2014) concluded that the integrative, transformative, and practical features of the TPACK framework are needed and that all of those features should be in the teacher training models. In Yeh at al.'s (2014) research, an expert panel confirmed the validation of the research model. The domain of the subject's content is vital to designing research that is related to the TPACK framework and this method should be used when designing such research instruments.

2.2 E-learning Practices in Preservice English Language Teacher Education

Similarly, in this subsection, e-learning practices in preservice English language teacher education will be discussed within three aspects. The first aspect is that preservice English language teacher educators implement e-learning practice for student teachers during the training. The content includes 1) *the TPACK model for preservice teacher education,* 2) *cognitive load theory for English language learning,* and 3) *teacher*

training with an e-learning approach. The second aspect is that preservice English language teachers implement e-learning practice for student teachers during their field practice, which maintains 1) *preservice teachers teach with e-learning approaches in their field practice* and 2) *trainee diaries and preservice teacher education.* Final aspect is taking some relevant study as examples to discuss implications of e-learning practices in preservice English language teacher education, which contains 1) *main principles of effective instructional tools for English language learning using an e-learning approach* and 2) *comparative study about e-learning practices in teacher education in different countries.* Therefore, there are seven sub-parts in total in this subsection.

2.2.1 Implementing E-Learning Practice for Preservice English Language Teacher during the Training

1) The TPACK Model for Preservice Teacher Education

The initial model of Pedagogical Content Knowledge (PCK) from Shulman (1987) to adjust to the rapid growth of educational technology was adapted by Mishra and Koehler in 2006. They conceptualized the TPACK model for improving teacher knowledge, and they stated that teaching and learning with the influence of technology could help preservice English teachers use their available resources ecologically. In their research, Mishra and Koehler determined that e-learning tools and strategies accommodate different learners' needs at the same time. They suggested that future research should focus more on the aspect named PCK of implementing e-learning practices in teacher education.

In order to better understand the incorporation of the TPACK framework in teacher education, Lee and Kim (2017) discussed incorporation of the TPACK framework into

different instructional models. Firstly, they checked how many participants gain pedagogical knowledge (PK) in their training courses and how profoundly they acquire it. Second, they determined whether participants deliver their courses by using a teacher-oriented method during their field practice. Meanwhile, Lee and Kim (2017) introduced a term called teachers as designers (TaD), and it has become a significant concept in research on the TPACK framework. Third, the way in which the various components of the TPACK framework (CK, PK, etc.) interact with each other in that framework should be considered. Lee and Kim (2017) agreed that discussion is a commonly used skill in the incorporation of the TPACK framework. Preservice English teachers can share and exchange their beliefs, knowledge, and teaching experiences.

After reviewing 55 peer-reviewed journal articles about TPACKs, Voogt (2012) found that the development of a TPACK in subject domains rarely existed in the literature during the period 2005 to 2011. They identified three main strategies for researching the TPACK model: conceptual nature strategies, student-teacher centered strategies, and strategies based on general educational technology courses. Meanwhile, self-assessment methods are important initially for facilitating the TPACK model. Voogt (2012) suggested that the domain subjects are necessary for designing lessons with the TPACK model. In addition, teachers' beliefs have an impact on the development of a TPACK model.

Based on the systematical review of extant research about TPACK, Rosenberg and Koehler (2015) concluded that an understanding of the context is crucial for any research related to TPACK. Meanwhile, context is the domain for understanding the framework of a research endeavor. The connections among teaching and technology

and other types of support are comprehensive. Usually, researchers discuss the TPACK framework at three levels: the macro level, the meso level, and the micro level. Audiences thoroughly understand the context around teachers' TPACK by using these levels.

Development of preservice teachers' TPACK is one of five critical elements for preservice education. After numerous training courses, preservice teachers' conceptual knowledge expanded. However, their specific situational knowledge still needed to be explored. The adoption of preservice teachers' existing beliefs and gradual creation of new beliefs about educational technologies needed to be clarified. Therefore, Hur, Cullen, and Brush (2010) applied the Situation Technology Integration (SiTI) model, designed for assisting preservice teachers with implementing educational technologies, and discussed its implementation. Preservice teachers, as the participants, not only observed their instructions by using the model but also got support and assessment from their peers. Although all participants felt confident about preparing their instructions, they still suggested evaluating the model by believable criteria.

2) Cognitive Load Theory for English Language Learning

Cognitive load theory is an instructional theory based on the knowledge of cognition. It is significant for acquiring secondary knowledge from large clusters of information. The essential aspect of cognitive load theory is the transfer of domain-specific knowledge. Learners use cognitive load to retain long-term memories learned from external environments. Cognitive load theory is helpful in making long-term memory instructional (Sweller, 2011). Lan, Chen, Li, and Grant (2015) studied how 31 monolingual English speakers learned language through an e-learning platform. They

found that avatar-based embodied motion was strongly related to the learners' language comprehension. They summarized three main variables related to cognition theory and language learning: individual performance, motivation, and anxiety. Learners agreed that game-like learning activities were more suitable for their language learning.

Cognitive load theory is based on the evolutional view of human cognitive architecture and relates to human biological requirements of secondary knowledge, which is a part of information. Roussel, Joulia, Tricot, and Sweller (2017) pointed out that for adults, learning a foreign language is biologically secondary knowledge. Mayer, Lee, and Peebles (2014) analyzed English language learning by the e-learning approach, from the perspective of cognitive load theory, and they found that adding on-screen captions to narrated video can raise learners' cognitive load. Chen, Chang, and Lee (2009) stated that three types of cognitive load applied in English language learning. According to cognitive load theory, the three types of cognitive load are intrinsic, extraneous, and germane cognitive loads. Chen et al. (2009) reviewed research about how to implant cognitive load theory into English language learning, and they found that a majority of studies discussed the abilities of listening and reading in English. Prebianca and Finardi (2014) agreed that English language learners' cognitive structures should be developed because they were learning English by e-learning practices, and when the medium of English language learning changed, the learners' cognitive structure would be influenced. Meanwhile, this approach would increase the interactions between English language learners and instructors.

3) Teacher Training with E-Learning Approaches

Teacher training programs should involve training needs, planning and preparation,

delivery, and evaluation (Stein, Sarah, Shephard, Kerry & Harris, 2011). Hands-on teaching strategies should be more available for teachers' professional development (Curtin, 2009). Specifically, preservice English teachers should complete the e-learning practices in English language learning reading tasks every day in order to train English teachers to become independent English readers for the future. Preservice English teachers should check every subtask and finish certain training skills by implementing e-learning practices. Finally, they should recognize that it is important to be trained to develop their digital literacy for future teaching and learning. The education of teachers of English should be designed for the learning aims of the target language, such as implementing e-learning practices in English language learning (Shishkovskaya, Bakalo & Grigoryev, 2015). New forms of training for teachers of English focus on how much teachers need to use e-learning practices.

Two primary models are used for teacher education in many countries: the concurrent model and the consecutive model. In the concurrent model, preservice English teachers complete the disciplinary studies and pedagogy studies at the same time. Commonly, the concurrent model is used during preservice teacher education. However, preservice English teachers learn the pedagogies from their previous disciplinary studies. In the consecutive model, on the other hand, students are normally trained and earn their academic degree in a specific subject. No matter which model is chosen for training teachers, however, the students' academic performance is the most important factor by which the teachers' teaching quality is measured. Therefore, the features of both kinds of teacher training programs have been examined by many researchers in their studies of teacher education. The common measurements of the two models include (Zuzovsky & Donitsa-Schmidt, 2017, p. 418): *Entry and retention rates*, *Teaching characteristics*,

Professional development and *Equity.* To develop the knowledge to implement e-learning practices for in-service students and preservice English teachers, Turvey (2010) believed that e-learning itself is a strategy that is a valuable target of research that delves into its definition and scope. Tsai (2015) indicated that two important factors influence the successful implementation of e-learning practices in English language learning: students' acceptance of the e-learning practices that have been implemented in English language learning, and students' willingness to use e-learning practices in their own English language learning. Those studies will be referenced for this study.

The importance of e-learning technologies in preservice teacher education is discussed from the perspective of preservice teachers by Smith and Greene in 2013. Preservice teachers needed models to guide them in the use of e-learning technologies, and as a result, reflective practices were vital for them in improving their capabilities to use the technologies. Proper reflective practices positively helped remove their anxiety when they were using e-learning. Meanwhile, via reflective practices, the preservice teachers received peer assessment and feedback about their incorporation of e-learning. They compared and combined the feedback between traditional teaching practices and one that integrated e-learning and agreed that such incorporation was a useful way to develop their professionalism. Discussing instruction from both the teachers' and students' perspectives, Hadi (2013) suggested that teacher educators' attitudes largely influence their classroom practices. Therefore, it is important that teacher educators keep a positive attitude during their in-class training.

There are three broad types of incorporation of educational technologies into teacher education: workshops, mentoring, and university-school collaborations (Yilmazel-

Sahin & Oxford, 2010). Similarly, research conducted by Abbott and Faris (2000), Bitner and Bitner (2002), Willis and Raines (2001), and Yilmazel-Sahin and Oxford (2010) found that not all preservice English teachers knew how to effectively use educational technologies in their field practice. Furthermore, as McCoy (2000) and Swain (2005) mentioned in their research, some universities have no reward system for stimulating teacher educators to use educational technologies. In addition, some teacher educators have insufficient time and technical support to effectively use educational technologies in their field practice. Finally, Yilmazel-Sahin and Oxford (2010) agreed that faculty development, which is part of the core framework for incorporation of educational technologies, is often irrelevant and poorly planned, a point that Cooley and Johnston (2000), McCoy (2000), and Swain (2005) echoed in their reports.

2.2.2 Implementing E-Learning Practice in Preservice English Language Teachers' Field Practice

1) Perspectives of Preservice English Language Teachers on Implementing E-Learning Practice in Their Field Practice

During the training, preservice English teachers have received knowledge and skills about implementations of e-learning practice, which already discussed in the previous subsection. in this subsection, what influential factors and how preservice English teacher think about implementing e-learning practice they think for their field practice will be discussed. Before institutions can design the proper practices for implementing e-learning, they need to learn the current situations in which e-learning operates and then compare those with best practices. Institutions need to make long-term and short-term goals for designing proper practices for e-learning implementation (Awidi & Cooper, 2015). Meanwhile, institutions need to list what tools or systems they have

used for incorporation of their e-learning practices. University administrators must make clear agreements about designing an e-learning practice before they implement e-learning in the whole university. All of those suggestions were useful for the design of this study's research instruments, especially with regard to the participants' field practice.

In Holmberg's study about teachers that were using educational technology (2017), 32 Swedish EFL teachers had a highly positive attitude toward the design framework created for their use of educational technology. They were aware that their use of educational technology improved their teaching and learning. The teachers preferred the design framework for guiding them in implementing educational technology, and they agreed that the framework offered them the space in which to create new pedagogical knowledge and skills. Building effective educational technologies into the classes and field practices is essential in teacher education. Archambault, Wetzel, Foulger, and Kim (2010) reported that the primary goals of developing such educational technologies should include creating models for preservice English teachers and teacher educators that enable them to keep up with technological development. Their recommended goals included transforming current pedagogies. Participants had more opportunities to communicate and give feedback to teacher educators during the research, and they agreed that as vehicles, educational technologies profoundly impacted their learning achievements, but that the content of courses was even more important than what kind of technologies they used. The majority of participants were dedicated to this student-centered learning approach. Archambault et al. (2010) further suggested that when analyzing collected data, one should use several codes with critical categories to identify the data by different means.

Similarly, as Howland and Wedman (2004) and Lee and Kim (2017) agreed, four main steps apply to designing research that is related to the TPACK framework: *Reflection, Development, Feedback,* and *Implementation*. Meanwhile, those ideas indicated that investigations of preservice teachers must consider whether the questions in the research instruments are associated with each item in the TPACK framework. Furthermore, the questions in the research instruments should test whether participants have conceptually displayed their acquired knowledge in their field practices and delivered them via a student-oriented technologically pedagogical method. Kavanoz, Yüksel, and Özcan (2015) introduced preservice teachers' technological pedagogical content knowledge, particularly for the digital generations (young people who were born from 1982 to 1994). Kavanoz et al. investigated the TPACKs of preservice teachers of English as a foreign language (EFL), from the perspective of self-efficacy. Participants were asked how they used the knowledge they learned from their training courses to prepare the learning activities for their field practice, and they were asked about their attitudes. The research findings indicated that female preservice teachers had less favorable attitudes and perceptions about using educational technologies in their field practice than male preservice teachers did.

The application of e-learning by using a list of social media in preservice teacher education programs, especially with regard to the development of pedagogies was presented by Szeto, Cheng, and Hong (2016). They investigated the potential pedagogies' affordances via social media in schools, and they found that some schools had limited Internet access, which meant that if the preservice English teachers completed their field practice in those schools, their teaching activities might be

influenced. The preservice English teachers had limited support from their supervisors for applying educational technologies, and that factor could influence the preservice English teachers in their application of educational technologies in their field practice. Limited preparation during their training process was the other salient factor that influenced the preservice English teachers' incorporation of educational technologies in their field practice.

Upon reviewing the case studies, Hsu (2013) found that peer perspectives partly influenced the preservice English teachers' beliefs about using educational technologies. In their field practices, they were similarly influenced by their peers. According to Hsu's findings, preservice English teachers disagreed about limiting learners to using educational technologies, because the learners might lose their motivation to learn if they were only in a simple learning environment. The preservice English teachers' previous experiences impacted their beliefs. Leslie and Johnson (2014) examined whether technology mentors were intended to provide a model for teacher professional development. They wanted to mentor teacher educators and preservice English teachers in learning on how to properly use educational technologies in the classroom and in the field practice. Leslie and Johnson agreed that technology mentors could provide a model for collaborative learning, and they quoted the standards for ethical practices. In addition to the limitations that Leslie and Johnson mentioned, they argued that the ethics issues relating to the use of technology mentors should be evaluated in future studies.

2) Reflections about Implementing E-Learning Practice in Preservice Teacher Field Practice through Their Diaries

Based on the TPACK framework, Tseng, Lien, and Chen (2016) found that learning in

groups and writing learning journals were advantageous techniques for preservice English teachers in developing their teaching activities and practices via web conference technologies. Smith and Craig (2013) discussed three components related to the enhancement of teacher education through educational technologies: learners' digital passports, an e-learning portfolio, and an e-learning self-reflection diary. Those three components could help learners to recognize and synthesize their learning needs and strategies. Therefore, collecting trainees' diaries can be used for analyzing how preservice English teachers reflect their learning outcomes and problems they faced with.

Information and communications technology (ICT) practices have been closely linked with improving teachers' competence. Implementation of e-portfolios has become very important to preservice English teachers training programs, and Kabilan and Khan (2012) believed that e-portfolios provide an accurate measurement for preservice English teachers. The portfolios list their learning outcomes and processes, and the teachers revise their teaching schedules based on feedback in their e-portfolios. What is more, e-portfolios reflect the preservice English teachers' stories and emotions during their field practices. Such a portfolio is an objective way for the preservice English teachers to record their experiences. Preservice English teachers enrich their teaching knowledge and skills by reviewing and discussing their records in their e-portfolios. Preservice English teachers use their e-portfolios to share and transform their resources, supportive ideas, and focus. Hyatt (2011) showed that reflection is necessary if each learner is to gain new opinions through understanding the consequences of past actions. Reflection is very essential to teacher training courses to determine preservice English teachers' competencies. Galina (2012) discussed e-learning from the learners'

perspective by asking university students about their attitudes toward an online English teaching model and a traditional in-classroom teaching model. Although there were advantages to e-learning and most students had a positive attitude toward it, the students' personal preferences largely decided their attitudes about e-learning. Galina summarized that e-learning methods helped the learners to activate their learning activities and assisted them in improving those abilities.

According to Hsu's findings in 2013, the most utilized methods of recording their reflections were in the form of journal writing and individual meetings. All of those findings are essential for teacher educators to take into account when they revise curricula for preservice English teachers with the goal of fostering positive beliefs about incorporation of educational technologies. Halbach (1999) co-opted trainee diaries to evaluate a teacher training course in methodology and then categorized the information for future revision of the course. Halbach acknowledged that trainee diaries were relatively easy to handle and summarize and that they had plentiful information about the preservice English teachers' real feelings and opinions, so the information should be true. Halbach believed that the trainees would be very responsible for their own professional career development, and thus they would truly reflect their ideas and experiences in their diaries. A successful relation between the content in student diaries and the theories the students learn should be dynamic. At the same time, researchers should be aware that the personal theories and experiences of trainees can influence their professional development. After collecting the trainees' diaries, Halbach found it to be an easy way to observe and evaluate the methods the trainees used, including the in-classroom activities they designed for their future teaching practice.

By reviewing the research on using technology-enhanced activities in teacher education courses, in order to explore the advantages and disadvantages of those activities, Sardegna and Dugartsyrenova (2014) identified how those activities assisted teaching outcomes and influenced preservice English teachers' future classes. Summarizing the results from promotion of technology-enhanced activities, English language preservice English teachers improved their abilities for critical thinking, collaborative learning, and teaching skills. Meanwhile, they gained more opportunities to practice online communication with their students. Their students could engage with online groups in discussions about different teaching methods and could get reflections and feedback from their teachers in a short time frame. The preservice English teachers added that their e-portfolio was helpful to them for reflecting on their teaching progress and revising their teaching schedule. However, some preservice English teachers still felt fearful when they first used the new tool in their field practice and felt that certain online activities were challenging. Still, the majority of the preservice English teachers had a positive attitude toward applying educational technologies in their field practice. They were partly influenced by their previous learning and teaching experiences, and they preferred sharing their opinions in the online forums.

2.2.3 Implications of E-Learning Practices in Preservice English Language Teacher Education

1) Main Principles of Effective Instructional Tools for English Language Learning Using an E-Learning Approach

Certain main principles for effective instructional tools in English language teacher education were recommended by Kameenui and Carnine (1998). First are conspicuous strategies, which refer to the need for English language trainers using e-learning

methods to carefully show their ideas and explanations directly, and clearly, with visual models, when they deliver their lectures. Second is strategic incorporation of different teaching methods, which refers to the need for English language trainers to consider and compare the differences between the old and updated implementations of e-learning practices in English language learning methods. The trainers need to list the obviously multistep periods articulately, because that could help students understand the lecture and certain challenges more deeply. Finally, there is judicious review, which refers to the need for English language trainers to review their designed teaching schedules frequently in order to revise and upload new knowledge.

After analyzing an e-learning system with 3,636 users across 238 courses to investigate how an e-learning environment fosters teachers' motivations, Biškupić, Lacković, and Jurina (2015) showed that motivation and information literacy were key factors for successfully adapting the e-learning environment, a result that supported the findings of previous relevant studies. Biškupić, Lacković, and Jurina (2015) agreed that an e-learning system could motivate teachers to prepare their teaching materials by using a Learning Management System (LMS). In their study, 42 teachers and 405 students participated and were asked to complete a parallel survey to indicate their motivations for using an e-learning environment. The authors cited the characteristics of the current generation of digital natives and their new technical needs and skills, to illustrate how those individuals differed from other generations, and thus the fact that sometimes teachers' instructions should not follow the digital natives' requirements. Their results indicate that teachers should redesign their teaching material and pedagogies.

Some clear ways to develop and implement e-learning practices that could help e-

leaning beginners find shortcuts to accessing suitable e-learning practices are shown by Keyte and Richardson (2011). Haythornthwaite and Andrews (2011) suggested that e-learning beginners could exercise corporate strategies and then could summarize those learning and development strategies for improving their learning effectively. Furthermore, they could clarify favorable implementations of e-learning practices for their learning needs and achievement. In 2012, the World Bank Group launched a plan for 2020, detailing new education strategies in which they mentioned that new strategies should focus on two main tasks: country-level educational reform and global-level educational reform. The World Bank paid attention to the development and growth of the knowledge and skills that people acquire, especially people from poverty areas. They underlined the levels and needs from learning strategies, including e-learning development in different schools.

Web conferencing technologies have the benefits of interactive communications and enhanced knowledge input, but the teacher educators had insufficient knowledge to implement the proper educational technologies and pedagogies (Tseng, Lien & Chen, 2016). In summarizing the steps of implementing e-learning, they identified *Comprehension, Observation, Adjustment,* and *Reflection.* The teacher educators had more opportunities to observe preservice English teachers' performance, and group discussion took the role of enhancing the awareness of developing preservice English teachers' TPACKs. Meanwhile, Tseng et al. (2016) pointed out that their data analysis process was beneficial for analyzing the data collected in their study. Those steps included coding, developing categories, comparing data, and determining categories.

2) Comparative Study about E-Learning Practices in Teacher Education in Different Countries

Başak and Ayvacı (2017) introduced the FATIH Project, which was a comparative study about the incorporation of technology into the educational systems of Turkey and South Korea. In their research, Başak and Ayvacı quoted the ICT skills standard for teachers from Song, Kim, Kim, Ban, and Ryu's (2003) study: *information gathering, information analysis and processing*, *information transfer and exchange*, and *information ethics and security*. Meanwhile, Başak and Ayvacı listed the main factors that influenced the implementation of e-learning in teacher education: powerful associations, the procedures of collaboration in practice, adequate money-related help, an assessment framework, customer productions and observing adaptations. Based on Awidi and Cooper's (2015) research guidelines, basic rules and strategies for the use of e-learning in Africa is listed as synchronous, asynchronous, and blended strategies. Methods for designing e-learning are divided into four main types: an interview, a document review, observation, and a survey. Researchers can gain contextual information via an interview, a document review, and observation. When researchers choose a survey as their research method, demographic information is collected. However, when researchers choose only to read documents about participants, they can gain theoretical information. When participants are interviewed and take a survey, researchers can learn perceptual information. Finally, Awidi and Cooper (2015) pointed out gaps that they found in different institutions' implementation of e-learning.

A particular case of preservice teacher training with the use of e-learning in Finland is presented. The majority of the Finnish preservice teachers agreed that they lacked knowledge in using educational technology and that at the same time they needed extra

pedagogical support. However, some preservice teachers were born in the digital generation and were familiar with the Internet. Thus, it was useful to investigate and compare their attitudes, knowledge, and experience in using ICT, based on the TPACK framework, with those of previous generations. From that research, Kontkanen et al. (2016) reached certain conclusions about the features of those preservice teachers. For instance, the preservice teachers' teaching experience limited them in developing their TPACKs, and their limited pedagogical knowledge of ICT incorporation influenced how effectively they applied the TPACK framework in their field practices. Based on Kontkanen et al.'s (2016) research, further studies of the TPACK framework need clearer categories in the context of the research. In conclusion, teachers from the digital generation are familiar with the technology in the function of social but not pedagogical potential.

Comparing e-learning methods with traditional teaching methods, Biškupić, Lacković, and Jurina (2015) agreed that the e-learning approach could more effectively stimulate students' motivations for learning. However, using the capabilities and strategies of technology can limit the teachers' motivation during real lectures and can influence their instructional teaching and design methods. Thus, those researchers agreed with Barger and Byrd's (2011) opinions about the need for vital conceptual frameworks for teacher education to be clarified, including strategies for teachers' motivation and successful instructional design. When teachers design their curricula, they must decide what specific skills the students should be required to learn in each discipline. Meanwhile, the researchers believed that certain kinds of training could help teachers to become more confident in e-learning environments. The teachers' experience in and knowledge about using technology were factors behind their motivations in an e-

learning environment. Meanwhile, Henderson, Lawrence, and Ebrary (2011) found that a personalized-system-of-instruction model should be influenced by different English language teaching strategies, because those strategies could represent the teachers' beliefs and behaviors and those beliefs would influence various students' learning motivations.

By reviewing previous studies about teacher education via e-learning environments in China, Taipei, and Chicago, Wang & Jou (2016) pointed out that questions had frequently been asked in those studies about preservice teachers' perspectives and beliefs. In addition, Wang and Jou (2016) listed the primary elements for designing the curricula for teacher education. Meanwhile, the way in which e-learning can best be implemented for teachers' professional development in inter-environmental learning is a potential subject for future study.

2.3 Relevant Theoretical Underpinnings for this Study

1) Advantages of Implementing the Mixed-Method Approach

Mixed research methods usually collect data via closed-ended and/or open-ended questionnaires, as well as through interviews and classroom observations. All of those approaches are the research instruments used in a mixed research methods approach. Zohrabi (2013) pointed out that questionnaires are a time-efficient means of collecting large-scale data, and that interviews can give in-depth data. Meanwhile, he advised that when validating their mixed research methods, researchers could ensure the validity of their research methodology from the perspectives of their study method's content, internal structure, utility criterion, and external structure. When investigators are considering the reliability of a research method, Zohrabi suggested that they consider

its position, triangulation, internal structure, and external structure. In addition, Zohrabi (2013, p. 261) offered an outline for research that uses a mixed methods approach, as follows:

I. Introduction

Background/Literature Review/Statement of Purpose/Research Questions

II. Methods

Participants (1. Sampling, 2. Characteristics of the Participants)/Materials/Procedures

III. Results

IV. Discussion

V. Conclusions

The core aspects for a mixed method design are structure, function, and process. Palinkas, Aarons, Horwitz, Chamberlain, Hurlburt and Landsverk (2011) enumerated seven categories of structure for a mixed method design. As a result of considering those seven types of structure, testing primary hypothesis by simultaneously collecting and analyzing quantitative and qualitative data is considerable in this study. Meanwhile, Palinkas et al. stated the functions of a mixed methods research approach. First, it can identify whether qualitative and quantitative strategies are to be employed consecutively, or simultaneously, to address a similar inquiry. Meanwhile, the mixed research methods approach considers whether the methods should use growing new measures, theoretical models, and/or mediation. In short, all of those functions would achieve the research goal by using a mixed research method to complete this study.

In addition, based on the research conducted by Palinkas et al. (2011), a mixed research method can use quantitative techniques to quantify intercession and/or execution results

and subjective strategies in order to arrive at a process. A mixed research method can lead to both exploratory and corroborative research and can investigate both the substance and the setting of an intercession. Again, all of these advantages encouraged me to use a mixed research method in this study. The many advantages of this approach are meant to lead to the consolidation of the point of view of potential customers of a proof-based practice. In addition, considering the complexity of mixed research methodologies, Palinkas et al. suggested that researchers should review the context of their research and the period during which the techniques would be used before they design the mixed research method for their studies.

The mixed research method bridges quantitative research methods and qualitative research methods and uses them together, and in so doing, it provides multiple ways for researchers to answer their research questions. A mixed research method can help researchers to comprehend the qualities and shortcomings of both the quantitative and qualitative types of research methods (Johnson & Onwuegbuzie, 2004). The contingency theory provides the most commonly used theoretical basis for mixed methods research. What's more, the mixed methods approach may advance a mutual obligation in the mission to accomplish responsibility for the quality of teacher training. Therefore, the implementation of the mixed research method is considerable in this study.

Based on the findings of the study about the sampling strategies in implementing mixed methods research, Palinkas, Horwitz, Green, Wisdom, Duan, and Hoagwood (2015) recommended that qualitative research methods can deliver new applied models of implementation procedures and results, meaning that qualitative research methods can

be produced from a likelihood testing technique. In addition, quantitative research methods are based on purposeful sampling strategies, which means that quantitative data can be created from a single-minded inspection strategy. Meanwhile, Palinkas et al. suggested that specific sampling procedures be utilized to identify both the similarities and the differences of the participants, because such sampling procedures are necessary for gaining general knowledge by means of comparison and contrast. At the same time, a commitment to the mixed methods research approach can be joined with existing methodological approaches and inventive solutions to complex problems.

2) Supportive Theories for Comparative Research Method

As can be seen from Başak and Ayvacı's comparative studies (2017) about the integration of technology in the educational systems of Turkey and South Korea, the main feature of a comparative study is a reflection of the research results from the expectations of the study itself. Meanwhile, an assessment of the implementation is necessary for comparative studies. The core value of the FATIH Project was to provide easy access to information and e-resources to students around the world. There were five elements in Başak and Ayvacı's project: available equipment, e-learning content management, teacher education with information and communication technology (ICT), a teaching and learning program with ICT, and the effective usage of ICT in education. What's more, from Başak and Ayvacı's comparative studies we see that the descriptive scanning method is the method used most often in comparative works. Başak and Ayvacı (2017) referred in particular to Çepni's (2010) study, from which they learned that for scientists, each source should be perused cautiously, the important information should be noted, and then with those notes, assessments can be made by identifying the current sources that are advantageous to a study's motivation in using this strategy.

Çepni (2010) had been concerned about general propensities, the nearness of substitute considerations, and thoughts that created a clearer structure when assessed in detail by following the practical instructions. All of these reasons guided me to utilize the descriptive scanning method in this comparative study.

Cognitive strategies support researchers in investigating behaviors that are related to an understanding of how to complete tasks. In the field of teacher education, cognitive strategies relate to using professional knowledge to improve students' academic performance (Martin, 2010). Duan (2013) explained that a comparison study exposes the similarities and differences among its participants. Meanwhile, Duan agreed that a comparison study can help researchers gain a deep understanding of their research objectives.

Two methods for conducting comparative studies about teacher education. One method is from the perspective of the teachers and recognizes the teacher as the authority. The other method restricts teacher education from diverse educational systems. Among those earlier relevant studies, Hollenbeck, Ezer, and Mevorach (2014) pointed out that the most widely practiced model for teacher education is the reflective-adaptive model, the core item of which is the curriculum. A very well-designed curriculum can easily show the dynamic relationships among the teacher educators and the schools. Meanwhile, through the reflective-adaptive model, preservice English teachers mirror the balance between social survival skills and standardized examinations in the university. What's more, Hollenbeck, Ezer, and Mevorach (2014) unearthed less significant comparative studies about teacher education.

Meanwhile, Bereday (1964) introduces the four-step method for comparative research, which comprises description, interpretation, juxtaposition and comparison (see Figure 2). In this study, the first two steps and fourth step are adopted to explore the answer for three research questions. Firstly, the description of all collected data in Hong Kong and mainland China is displayed and summarized. Secondly, Chi-Square tests are applied to all collected data in Hong Kong and mainland China. Finally, in order to compare with different situations in Hong Kong and mainland China, the Chi-Square test is repeated.

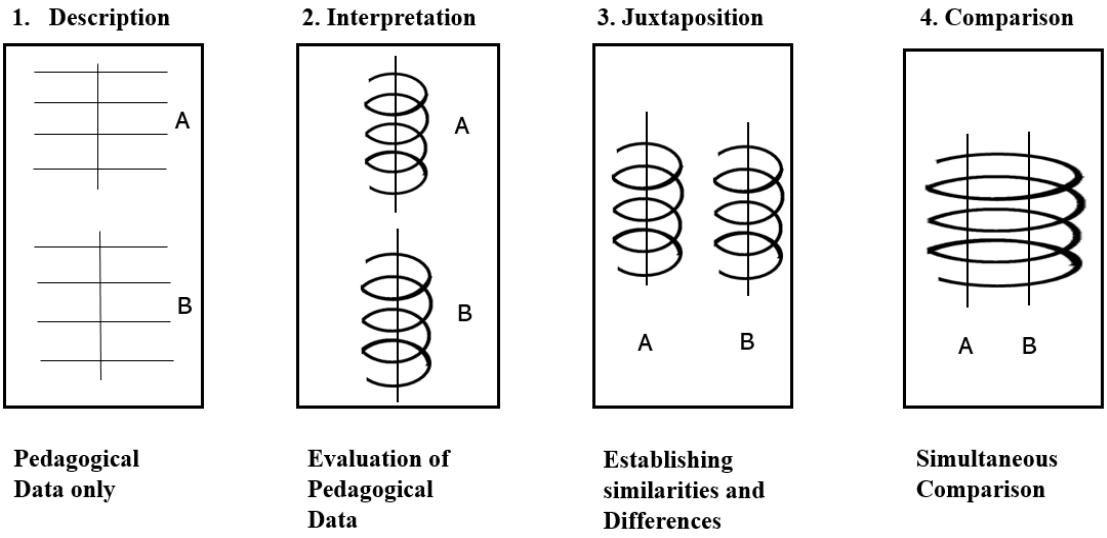

Figure 2. Bereday's Model for Undertaking Comparative Studies

3) Rationale for Completing This Comparative Study

The chronological development of comparative research methods in education was presented by Nóvoa and Yariv-Mashal in 2003. The role of political perspective is an important factor that influences the implementation of comparative research methods. When researchers apply comparative research methods in their studies, they should consider the diversity and individuality of the research. Meanwhile, researchers can reconceptualize the relation between time and space in their research via comparative

research methods, especially when numerous disciplines are involved. Ermenc (2015) was the first to introduce the model of comparative educational research. The model is knowledge-based and helps learners to gain a deep understanding of the content of different disciplines. Ermenc (2015) discussed the source of pedagogy and the relationships of comparative research approaches and pedagogy. Ermenc (2015) indicated that comparative pedagogy should be concerned with diverse historical and social backgrounds in different education systems. Ermenc (2015) agreed that comparative pedagogy uncovers the basic theoretical aims and rules for the design of educational research.

Six types of comparative research methods are historical approaches, social approaches, methodological approaches, philosophical approaches, and two types of scientific approach (classical and new). Those comparative research methods are used in different fields of study, for both qualitative research and quantitative research (Khakpour, 2012). Furthermore, information and communication technology provide the opportunity to make the entire world accessible. Teichler (2014) outlined 12 main reasons (see Figure 3) why research needs to incorporate comparative research methods. These reasons give theoretical support and references for further studies. Finally, Awidi and Cooper (2015) pointed out gaps that they found from different institutions that had implemented e-learning. This research instrument considers those gaps.

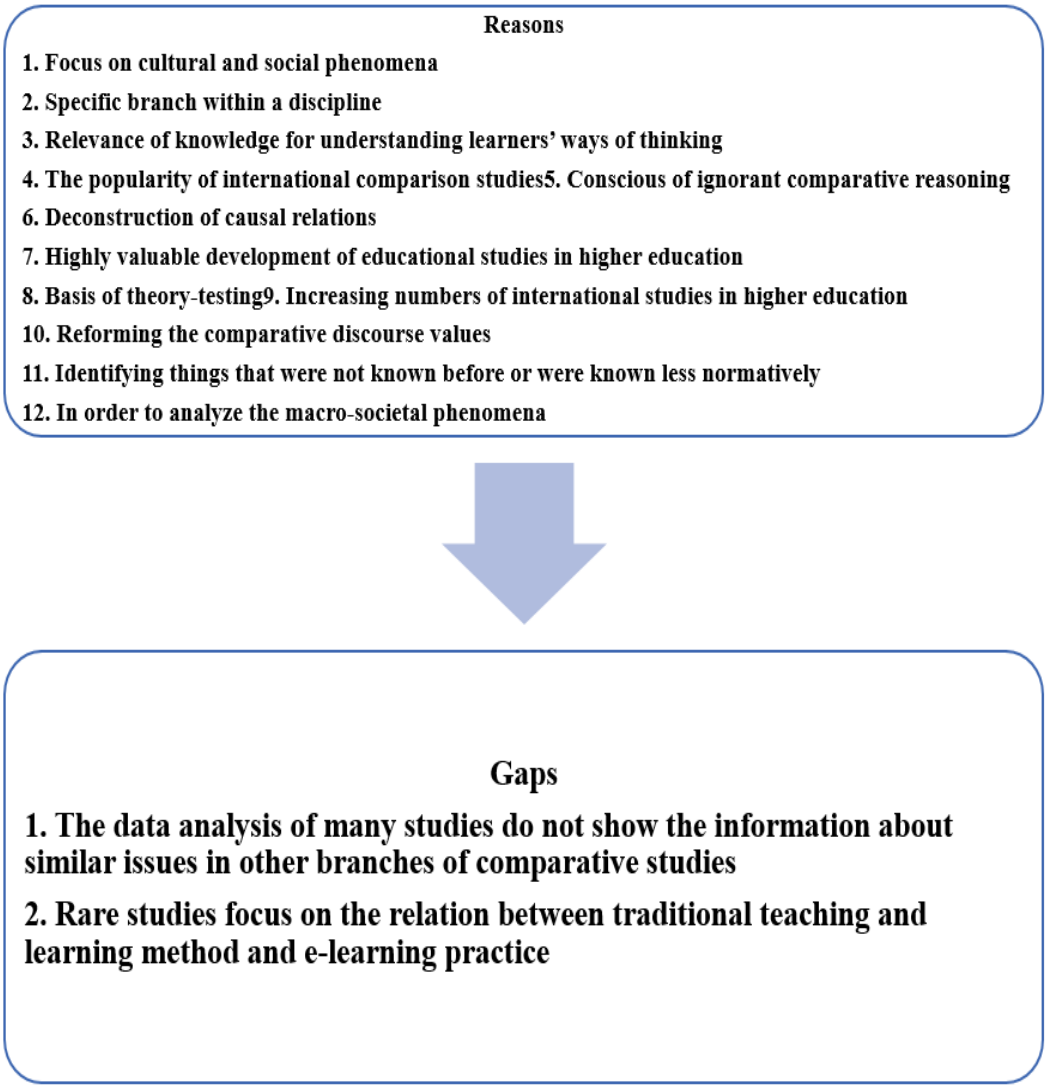

Figure 3. Teichler's Reasons for Using Comparative Research Methods

2.4 Summary

After reviewing relevant research about the implementation of e-learning practice in preservice English teacher education, I discuss interrelated elements (see Figure 4) about how to implement e-learning practice in preservice English language teacher education, and factors (see Figure 5) that influence the implementation of e-learning practice in preservice English teacher education. These elements and factors guide us, in the next chapter, to comparing the implementations in preservice English language

teacher education in Hong Kong and mainland China. Meanwhile, these elements and factors indicate the way to design the research instruments in this study.

Factors	Aspects	Particular Focus
Cultural values (Cutler, 2005)		
Technology (Leszek, 2012)	Benefits of e-learning (Singaravelu, 2011)	
	The application of ICT tools in education (Hsu, 2013)	•An assessment framework (Başak and Ayvacı, 2017)
	Technical details	•Flexible techniques (Osipov, 2016)
	The administration of teachers' in-class teaching	•Using the capabilities and strategies of technology (Biškupić, Lacković, and Jurina, 2015; Hsiao-Ching, 2008) •Attitude and beliefs (Hsiao-Ching, 2008; Hsu, 2013; Osipov, 2016; Lewis and Fabos, 2005; Hadi, 2013) •Teaching methods (Hsiao-Ching, 2008) •Previous experiences (Hrtoňová, Kohout, Rohlíková & Zounek, 2015, Shen and Hannafin, 2013, Barger and Byrd, 2011, Hsiao-Ching, 2008; Hsu, 2013; Lewis and Fabos, 2005) •Evaluations of e-learning (Hrtoňová, Kohout, Rohlíková, and Zounek, 2015) •Learning habits (Hrtoňová, Kohout, Rohlíková, and Zounek, 2015)
Content (Leszek, 2012)	Work life (Başak and Ayvacı, 2017)	
	Financial support (Başak and Ayvacı, 2017)	
	Perspectives of student (Hsiao-Ching, 2008)	•Students' personal preferences (Galina, 2012) •Students' willingness and acceptance (Tsai, 2015; Kavanoz, Yüksel, and Özcan, 2015) •The demographic information of participants (Afzal, Safdar, and Ambreen, 2015) •The academic year of the participants (Sánchez-Prieto, Olmos-Migueláñ ez, and García-Peñalvo, 2017) •Participants' gender (Kucírková and Jarkovská, 2016)
Learning design (Leszek, 2012)	Institutional policies	
	Teaching materials (Osipov, 2016; Lim, Yan, and Xiong , 2015)	
	In-class pedagogies (Awidi and Cooper, 2015)	•The procedures of collaboration in practice, (Başak and Ayvacı, 2017)

Figure 4. Factors influencing implementation of e-learning practice in teacher education

Two Scenarios	Interrelated Elements		Detailed examples from Literature Review			
In-class training	Approaches		✦Theory-based approach, coatching approach and refelctive approach (Leaver, Ehrman, and Shekhtman's, 2005)			
	Steps(Stein, Sarah, Shephard, Kerry and Harris, 2011)	Training needs	✦Development of a preservice teachers' TPACK (Hur, Cullen, and Brush, 2010; Lee and Kim, 2017)	Four main steps (Howland and Wedman, 2004; Lee and Kim, 2017)	✦Reflection	
					✦Development	
					✦Feedback	
					✦Implmentation	Aims: ✦Improving preservice teachers' digital literacy and competence including their criticl thinking capbility and conducting logical presentations (Crandall, 2001; Egbert, 2003; Brewster, Ellis & Girard, 2010)
						Approaches: ✦Self-pacd approach and instructor-led approach (Ghirardini, 2011) workshops, mentoring, and university-school collaborations (Yilmazel-Sahin and Oxford, 2010)
						Aspects: ✦Networking, experience, motivationsod teachers (Albion, 2001)
				Aspects	✦Proper reflective practices positively helped remove their anxiety when they were using e-learning. (Smith and Greene, 2013) ✦Preservice teachers gain a deeper understanding of how educational technologies can enhance their professionalism with the TPACK model. And their motivation for learning is improved. (Howland and Wedman, 2004; Bosch, 2009)	
		Planning and preparation Delivery	✦Contents, principles, guidelines and techniques (Kirkpatrick & Kirkpatrick, 2006)			
		Evaluation	✦The level of the learners' performance, learning content (Ghirardini, 2011; Shin and Crandall, 2014) ✦Reflective method, such as e-portfolio, weekly journals or diaries (Kabilan and Khan, 2012; Sardegna and Dugartsyrenova, 2014; Hyatt, 2011; Zuzovsky and Donitsa-Schmidt, 2017; Halbach, 1999; Smith and Craig, 2013)			
Field Practice	Present Issues		✦Schools had limited Internet access (Szeto, Cheng, and Hong, 2016) ✦Preservice teachers had limited support from their supervisors (Tseng, Lien, and Chen, 2016; Szeto, Cheng, and Hong, 2016) ✦Limited preparation during preservice teachers' training process (Kameenui and Carnine, 1998; Szeto, Cheng, and Hong, 2016; Kavanoz, Yüksel, and Özcan, 2015; Archambault, Wetzel, Foulger, and Kim, 2010; Kontkanen et al., 2016)			
	Existing problem		✦Currently designed courses about developing TPACKs for preservice teachers are not comprehensive (Chai, Koh, and Tsai, 2010) ✦Less automatically transforming functions between paper-based materials and online resourses (Ghirardini, 2011) ✦Preservice teachers cannot ensure that they have used the proper resources in their field practice, because they lack the experience for assessment. (Yeh, Hsu, Wu, Hwang, and Lin, 2014; King and Boyatt, 2015; Dall'Alba and Sandberg, 1996; Murray and Male, 2005; Zeichner, 2010) ✦Some teacher educators overfocused on their choices of educational technologies and not on their implementation of e-learning in a precise subject (King and Boyatt, 2015) ✦The adoption of preservice teachers' existing beliefs and gradual creation of new beliefs about educational technologies needed to be clarified (Hur, Cullen, and Brush, 2010) ✦The ways to motivate, enable and engage students to implement e-learning practices (Yang and Walker, 2015)			

Figure 5. Interrelated elements of implementation of e-learning practice in preservice English language teacher education

Chapter 3: Context of the Study

3.1 Implementation of E-learning Practices in Preservice English Language Teacher Education in Hong Kong

In the first subsection of chapter three, I discuss 1) *preservice teacher education in British Hong Kong*, 2) *preservice English language teacher education after Hong Kong's reunification*, 3) *perspectives of preservice English language teachers regarding TPACK in Hong Kong,* and 4) *e-learning practices in preservice English language teachers' education in Hong Kong*.

3.1.1 Preservice teacher education in British Hong Kong

The British ruled Hong Kong from 1842 to 1997. During that period, Hong Kong was a colony and British Dependent Territory governed by the United Kingdom, and the colony's teacher education was influenced by the U.K. From then until 1939, Hong Kong's normal schools gradually opened, including the Vernacular Teachers' Class, The Vernacular Normal School for Women, The Vernacular Normal School for Men, and Tai Po Vernacular Normal School (Lomax, 1973). However, the Great Proletarian Cultural Revolution influenced the development of teacher education in Hong Kong from 1967 onward (Fung, 1977). The Education University of Hong Kong was established in 1994 under the name Hong Kong Institute of Education, and in 1998 the Institute obtained a permit to offer a bachelor's degree in Education, thus ending the era of teacher-training colleges. The Institute of Language in Education provided short-

term training and retraining programs to further professional education for language teachers teaching in primary and secondary schools.

Teacher education in Hong Kong has followed a unique tradition, and preservice teachers used to be trained in either a teacher-training college or a university training program. Basically, these two types of schools for teacher education were separated by their students' social status and family income. The teacher-training colleges normally provided elementary-level teacher education to preservice English teachers who were from grass-roots families. Teacher-training colleges were small in scale and have fewer resources. Hong Kong has never had a formal private teacher-training institution — all teacher-training institutions have been, and are, run by the government. During the early colonial time, local Hong Kong students received their education from the local Chinese schools, whereas British offspring and other foreign children in Hong Kong were educated in the United Kingdom (Cheong Cheng, 2009). Leading up to 1939, significant changes took place in teacher education in Hong Kong. Then, in 1939, the first full-time government-run post-secondary-level teacher-training college was established. Unfortunately, from the 1970s through most of the 1990s, Hong Kong's colonial government refused to accept graduates for further study at university level if they had earned their credits from local colleges of education (Walker & Dimmock, 2002). Happily, after 1997, the new government declared that all local schools must provide uniform teacher training for all preservice English teachers.

3.1.2 Preservice English language teacher education after Hong Kong's reunification

Although Hong Kong was returned to mainland China in 1997, the reforms for long-term teacher education in Hong Kong had already been influenced by the colonial government's short-term teacher education program. Basically, the development of teacher education in Hong Kong was influenced primarily by the Bureaus. After 2000, The Hong Kong Institute of Education (now The Education University of Hong Kong) began to offer four-year, full-time bachelor's degree in education in preservice teacher education. In 2000, the Hong Kong Education Bureau (EDB) published a teacher education reform titled *Learning to Learn: The Way Forward in Curriculum Development*, as an outgrowth of the Hong Kong Education Commission's 1999 publication called *Education Blueprint for the 21st Century: Review of Academic System: Aims of Education*. The new government regarded education as the core of Hong Kong's future development. In 2002, the Hong Kong Institute of Education was the chief provider of education for primary school teachers and preschool teachers in Hong Kong. It exemplified in detail the vision guiding its values and mission for the development of teacher education, and that guidance has influenced present improvements in Hong Kong's teacher education.

3.1.3 Perspectives of preservice English language teachers regarding TPACK in Hong Kong

The evaluation systems that have been applied in technology-enhanced learning found

that it was considered essential to integrate e-learning into the different classes in Hong Kong's three universities (McNaught & Lam, 2005). Their criteria for evaluating the teacher-training process were that the teaching should enrich, extend, and evaluate students' learning (e3L). During that process, the evaluation purposes, the use of the web, the evaluation questions, the evaluation data types, and the evaluation instruments should all be discussed. Consideration of those criteria and components is useful. The formation and effects of e-learning are the criteria for evaluating its impacts. E-learning, as an educational-assistance tool, should enhance course content, the functions of communication and the assessments. Such broad expectations for enhancement mean that preservice English teachers and teacher educators must consider whether e-learning is helping students manage their studies and whether it has the necessary resources for their learning when it is applied in the classroom. Meanwhile, student feedback and discussions are vital for teachers in revising their teaching schedules in a timely fashion. Hong Kong students believe that the marks they gain for their assignments are critical, and they carefully choose resources and activities when their assignments are not compulsory. Thus, students create their work by utilizing numerous forms of educational technologies.

Over and above this, Norton, Richardson, Hartley, Newstead, and Mayes (2005) investigated teachers' beliefs and teaching practices in higher education. Usually, those beliefs and practices are divided into two primary teaching methods: student-focused methods and teacher-focused methods. Norton et al. (2005) agreed that teachers'

knowledge of a subject influences their own beliefs and consequently their students' motivations and problem-solving abilities. Based on Norton et al.'s (2005, p. 553-562) findings, we have learned that different disciplines influence teachers' beliefs during their training process. Furthermore, teachers' experience will not be influenced by their concepts of teaching but will be related to how much teaching practice they have done.

3.1.4 E-learning practices in preservice English language teachers' education in Hong Kong

The Hong Kong Government's Scholarship for Prospective English Teachers, an annual award set up by the Education Bureau in 2010/2011, should stimulate teachers of English in Hong Kong to enhance their professional development. Chan, Tam, Li, and Pow (2016) introduced preparations for 21st-century teacher education in Hong Kong by reviewing different examples from around the world. Zhu (2013) illustrated that Hong Kong schools began to use an e-learning platform in 2007, and although they still used traditional teaching methods, they reformed their teaching model according to the desired development of educational policies and technologies. Katitia (2015) pointed out that ICT, as a commodity in education, is significant for the development of teacher education. The most important tasks for teachers' professional development in the 21st century are pedagogies, including technology-enhanced teaching strategies and classroom-management strategies. Meanwhile, Dimkpa (2015) agreed that talented preservice English teachers could be awarded the scholarship in future. Chan and Van (2006) mentioned three aspects that should be enhanced in the future professional

development of preservice English teachers: pretraining experiences, the teaching context, and student needs. Furthermore, teacher educators should pay attention to those three aspects in order to help preservice English teachers improve their professional knowledge and skills. Most preservice English teachers prefer seminars on staff development days, which are in-class observations and structural activities for teaching and learning. In addition, many studies about teacher education have shown that preservice English teachers agree their abilities improve after they attend English training programs, and they state that they learn a great deal about collaborative learning, learning with self-efficacy, and professional growth in their learning communities. Lee (2013) suggested that preservice English teachers should maintain a balance between their teaching, learning, and social life.

The Language Proficiency Assessment for Teachers Examination (LPATE) was first introduced in 2000 by the Hong Kong Special Administrative Government to assure the English language proficiency of teachers. The LPATE sets an objective reference for evaluating the language proficiency of teachers in primary and secondary schools (Mak, 2013). There are five parts to the LPATE: 1) reading, 2) writing, 3) listening, 4) speaking, and 5) classroom language assessment. A scale of 1 to 5 is used to demonstrate the ability level of the candidate. Level 5 is the highest proficiency level, while level 1 is the lowest. Level 3 is the required level of proficiency.

3.2 Implementations of E-learning Practices in Preservice English Language Teacher Education in mainland China

In the same way, this subsection introduces 1) *preservice English language teacher education before the Reform and Opening-up of mainland China,* 2) *preservice English language teacher education after the Reform and Opening-up of mainland China,* 3) *perspectives of preservice English language teachers regarding TPACK in mainland China,* and 4) *e-learning practice in preservice English language teachers' education in mainland China*.

3.2.1 Preservice English language teacher education before the Reform and Opening-up of mainland China

Before the Reform and Opening-up of mainland China, traditional teacher education was influenced mainly by the Confucians and partly by an imported Western type of educational system. Nine periods have been designated to summarize the history of teacher education in mainland China (Xu, 2012). During the years from 1897 to 1912, teacher education in mainland China was in its infancy, and the early independent and closed schools for training teachers were established. In the subsequent decades, the independent and closed teacher education system was reformed, and up until 1927, that system was partially withdrawn. Then, beginning in 1927 and continuing up to 1945, the independent and closed teacher education system was thoroughly revised and reconstructed.

However, from 1945 to 1949 the independent and closed teacher education system unfortunately declined. Then, in 1949, a very important year for mainland Chinese, the People's Republic of China was established, and socialism began to be implemented. During the period from 1949 to 1966 the Chinese teacher education system was adjusted and adapted to socialism. In 1966 began the period of China's Cultural Revolution, a powerful sociopolitical movement that lasted until 1976 (Ding & Wang, 2017). During that period, the teacher education system became stagnant and began to decline. Finally, in 1978, after the Cultural Revolution had ended in 1977, the new policies of Reform and Opening-up in mainland China began to be implemented (Lim & Xiong, 2015). With that, the independent and closed teacher education system gave way to reconstruction and exploration and became open, with mixed categories. That situation has continued from 1977 to the present.

3.2.2 Preservice English language teacher education after the Reform and Opening-up of mainland China

With the implementation of the policies of Reform and Opening-up in mainland China, teacher education has gradually been reformed and has grown to be open to the outside world. Yang (2012) pointed out that the Ministry of Education promulgated "The 21st Century-Targeted Scheme for Operation to Invigorate Education" in December 1998. In May 2001, the State Council issued "The Decision on Basic Educational Reforms and Developments," which for the first time used the term "teacher education." The Decision set forth the goal of perfecting the open system of teacher education with

normal institutions as cooperators, and it featured the integration of preservice cultivation and in-service training. Basically, the two typical models of preservice teacher education are either two years of training plus two years of field practice, or three years of training plus one year of field practice. A test currently used for English majors--the Band 8 (TEM8) --is an examination designed to specifically target preservice English language teachers in the university system. A written paper that is part of the TEM8 includes tasks on listening, reading, writing, translating, and proofreading, and an oral part consists of a short presentation, an interpretation from English to Chinese, and vice versa. Although the TEM8 is not a mandatory qualification for English language teachers in China, many schools adopt the TEM results as important criteria for selecting and recruiting teachers of English (Jin & Fan, 2011).

Students who are from, and studying in, mainland China have a dilemma. They have few chances to learn English in native ways and few opportunities to explain their opinions in English. Thus, private English training centers have operated reasonably well in mainland China. However, this researcher believes that the situation is impacted by Chinese educational policies and that it is unfair to all Chinese learners of English in mainland China. Teacher-centered methods for teaching English have been popular for the past 30 years in mainland China. Thus, most Chinese learners of English in mainland China have been able to get high scores in English reading and listening tests, but they sometimes still cannot speak or write English proficiently. The proper implementation of e-learning practices in English language learning could change the

traditional teaching method into one that takes a student-centered approach to e-learning as part of an English language learning strategy, and thus it could help students learn English as effectively as possible. The implementation of e-learning practices in English language learning could help students acquire English language skills by assisting them in practicing constantly. Keengwe and Kang (2013) found that a technology-rich curriculum offered Chinese learners of English more opportunities in an e-learning environment, such as the chance to complete diverse teaching and learning activities and use games for English language learning and teaching.

3.2.3 Perspectives of preservice English language teachers regarding TPACK in mainland China

Information and communication technology change the relationship between teaching and learning. Educational technologies are necessary for preservice teachers' use of technology in enhancing their teaching proficiencies, but the Chinese government has not approved any guidelines for integrating ICTs to further the professional development of preservice teachers (Lim & Xiong, 2015). Most preservice English teachers in China accept the common courses about the implementation of educational technologies, but those courses are decided by each university individually. There are no united standards that apply to China as a whole. Thus, preservice English teachers' competence in using technology is uneven. Preservice English teachers in China need to be trained to adapt to the current educational technologies immediately and to collaborate and share information within a short time frame. They need access to

different assessment tools to measure their achievements.

In order to learn about Chinese preservice teachers' TPACKs, Dong, Chai, Sang, Koh, and Tsai (2015) introduced constructivist-based implementations of information and communication technologies in China, and their research revealed that TCK are the most critical ingredients for preservice teachers to use in developing their TPACKs. By learning various applications of educational technologies, preservice teachers can increase their capabilities for designing teaching activities, and it is crucial for preservice English teachers to develop strong capabilities for designing a proper curriculum. Lim and Xiong (2015) suggested that student-teacher-training courses should form the basis for analyzing the design, implementation, and assessment of educational technologies in China.

The basic situation of information and communication technology in China was illustrated by Li, Huang, and Tang in 2009. The Chinese government and its administrators in education decided to profoundly and quickly develop educational technologies in higher education. Thus, although all the problems still currently exist, they have diminished. We should pay attention to those problems, and especially to the changes during the past decade. Li et al. (2009) suggested that ICT plays a vital role in the development of higher education in China — a role that relates to curriculum reform and teachers' TPACK. However, an imbalance in regional incomes and in unique educational resources makes the implementation of ICT in Chinese higher education a

struggle. The quality of equipment is doubtful, and that affects teachers' professional development in China. Fortunately, many Chinese universities have constructed intercampus networks that provide university students with various ways to gain knowledge and attend courses via distance education programs. For further studies, Li et al. (2009) suggested that a broad system for sharing resources should be built into the university system in China. Based on the uneven conditions in the country's higher education system, localized and facilitated practices should be designed for implementing ICT in China's system of higher education.

3.2.4 E-learning practices in preservice English language teachers' education in mainland China

The year 2004 was the crucial year for constructing the online learning system among the majority of universities in China. Gu (2004) noted that the primary task of building online learning systems in China in the future will be for professional training. Thus, educators, designers, and administrators must create more opportunities for communicating, understanding, and supervising each other. Gu (2004) analyzed the revolution of integrating diverse resources in learning and agreed that educational technologies help in-classroom learning to become more flexible and researchable. Gu (2004) found that because of the background of the country's implementation of e-learning, online learning systems have gradually become mainstream for distance learning in China.

An ecological model for online education in China that referred to the balance of relations between teaching and learning was illustrated in Gu's (2005) research. Gu (2005) summarized the general rules of teaching for teacher-training courses. First, teacher educators should analyze the current situation, and second, they should obey the general rules of learning to teach students. These two rules became the criteria for the design of this study's research instruments. Keengwe and Kang (2013) spent three years researching how in-service EFL teachers developed their technology-based curriculum in China. Keengwe and Kang's (2013) project included five steps: planning, developing, implementing, analyzing, and revising. Keengwe and Kang's (2013) ongoing three-year program supports EFL teacher education in China and offers more authentic situations for integrating educational technologies. The study's participants who had completed the project stated that the integration of new educational technologies is necessary for teacher education in China. However, those participants believed that a lack of sufficient support in China for implementing educational technologies is a serious limitation to the development of teacher education.

The application of e-learning in teacher education at East China Normal University in China (Li, 2009) includes curriculum reform and integrates educational technologies into the teacher-training courses. The application of e-learning has changed preservice English teachers' learning styles and habits. The functions of the e-learning platform comprise delivering the information, sharing the learning resources, discussing online, exchanging daily life activities, and learning and tracking preservice English teachers'

learning activities. In Li's (2009) research results, most participants admitted that field practice was essential for them in applying e-learning and using the knowledge and skills they had learned. Students had a highly positive attitude toward e-learning and agreed that it could help them to improve the quality of their assignments.

Referring to the consequence of satellite and broadband-based distance education in China, Li (2011) found the Chinese teacher-training program is not adequate for preservice English teachers, and the standards are not classified. Teacher-training projects in China have lacked 1) the components of training for creative thinking, and 2) available access to different resources outside China. This obvious gap exists not only in higher education but in elementary education. Therefore, the Chinese government launched the Digital Education Project in 2007. During the ensuing period, certain problems have been exposed, such as preservice English teachers' and teacher educators' need for more relevant bits of knowledge and better skills to assist them in their practices. They need enough time to become familiar with the implementation of ICT in China's educational system. As individual learners, students who are from, and studying in, mainland China lack the resources and an adequate network for conducting more self-exploration and self-study by means of ICT implementation in the Chinese educational system. Among educators in China, not enough have an academic specialization in ICT. Inadequate financial support from the government is evident. In response to all of these problems, Li (2011) suggested that the integration of ICT into China's teacher education program should focus both on the national level and the local

level. Furthermore, the Chinese government should invest more on education in future.

By investigating comprehensive English reading lessons delivered by a computer-assisted language learning platform, Xu (2004) found most participants agreed that they preferred student-centered learning methods. Teachers should explore additional strategies for merging the traditional learning environment and the e-learning environment in mainland China. Furthermore, online teacher-education institutions in mainland China should cooperate with relevant institutions in foreign countries in order to improve the quality of their own online teacher education. Simultaneously, Gu (2007) showed the reasons for implementing e-learning in mainland China. Educational technologies help preservice English teachers interact in depth with online learning resources. In addition, e-learning platforms supply teaching and learning activities in a rational manner in the universities. Gu (2007) emphasized the role of teachers and students in applying e-learning, and he suggested that an analysis of the role of e-learning in education is vital in any research about its application.

Wu and Feng (2004) researched computer-assisted language learning courses in mainland China and found that computer-assisted language learning courses were more timesaving. When teachers delivered computer-assisted language learning courses, students had a positive attitude toward learning. Meanwhile, student performance in computer-assisted language learning courses was impressive and praiseworthy. Based on the different teaching and learning methods, Gu (2004) agreed that the theories of e-

learning are related to the pedagogies in the digital era. E-learning practices changed different aspects of human beings' lives. First, humans could digitally store various resources and could easily access online resources. Second, people could optimize and utilize online resources differently. Meanwhile, the on-campus learning environment and teachers' personalities influenced e-learning practices in preservice teacher education. At the end of 2004, there were 11 official online education institutions in mainland China, with that number growing to 68 by the end of 2018.

Based on lesson content and student-centered learning methods, Gu (2004) listed plans for how to implement e-learning practices in mainland China. Gu (2004) determined that the various perspectives of policy-makers, teacher educators, and preservice English teachers form the biggest challenge for e-learning practices in teacher education. He pointed out that there are relevant theories that are helpful for developing e-learning practices in teacher education. Meanwhile, further development of e-learning practices in teacher education in mainland China will depend on our orientation to students, on teachers' sympathy, and on acceptance of the technology's new role, as well as on in-depth development of educational resources, correct decisions by the education authority, and a strategic vision from the investment sector to emphasize long-term returns over a quick-return mentality.

After reviewing relevant research about the implementation of e-learning practice in preservice English language teacher education, some interrelated studies about factors

which influence implementations of e-learning practice in preservice English language teacher education in Hong Kong and mainland China are listed in Figure 4--this delineates a list of considerable criteria for designing research instruments in this study. Meanwhile, when cultural values, technology, content and learning design, as a factor, influences implementation of e-learning practices in preservice English teacher education in Hong Kong and mainland China with detailed examples are individually listed (see Figure 6).

Factors	Hong Kong	mainland China
Cultural values (Cutler, 2005)	Collaborative learning among students with different cultural background in a virtual environment	Significance of gender in students' attitudes towards, and use of computers, within different cultural contexts.
Technology (Leszek, 2012)	ICT acts as a lever to bring about changes in stundent learning, frequency and types of ICT tools	ICT plays a vital role in the developemnt of higher education in China-- a role that relates to curriculum reform and the teachers TPACK
	The offical documents about intergrating ICT in the education on the Hong Kong Education Bureau are avaliable for teacher educators and students	Chinese students have no offically guideline for intergrating ICTs to further the professional development
	Teacher' teachnological knowledgeof a subjects influence their students' motivations and problem-solving abilities.	When teachers delieved computer-assisted language learning course, students had a positive attitude toward learning.
	Hong Kong schools began to use an e-learning platform in 2007, and although they still used traditional teaching methods, they also reformed their teaching model according to the desired	In 2000, the 'Xiao-Xiao Tong' project, set out to spread e-learning in primary, middle, and high schools in mainland China. Hoever, Internet users in just a few big cities (Beijing had one quarter of China's Internet users), slow transfer speeds, and a general lack of resources
	Teachers'perceptions of success as well as those on teaching and student learning and the development of professional learning communnities in Hong Kong are also drawn upon to highlight implications for the future development of teacher education	A lack of support in China for implementing education technologies is a serious limitation to the development of teacher education.There are no united standards that apply to China as a whole. Student teachers' competence is using technology in uneven
	Student from Hong Kong are accessing the learning manegement platforms via their smartphones more frequently	Even today, computer and network exploitation are still imbalanced: e-learning education still relies on satellite technology, especially in the countryside and minority areas in China
Content (Leszek, 2012)	Financial support from the Research Grants Council of the Hong Kong Special dministrative has strong emphasis on technological leadership	
	Individual difference, which mostly focused on demographic variables, such as age, gender, education and individual experience.	In China, the e-learning is believed as an optional mode which is influenced by gender, relationshipof teacher and students, age and generation
	Students' learning styles in relation to their acceptance and attitudes towards usining e-learning tools	Student' cultural differences are deeply influenced in their Internet use
	Teachers provided more chances to allow students to implement their ICt skills and creativity	Teacher-focused Teaching Enviornment,teacher educations' basic feature and guidance development methods of Chinese characteristics for teacher education
Learning design (Leszek, 2012)	e-Learning policy in school education in Hong Kong is focusing on creating digital classrooms supported by wireless networking for student-centered learning	e-Learning policy in school education in Beijing is focusing on providing digital resources and e-textbooks geared to school curricula
	The usage of Facebook in the higher education context of Hong Kong	
		Student teachers in China need to be trained to adapt to the current educational technologies immediately and to collaborate and share information within a short timeframe. they also need access to different assessment tools to measure their achievements

Figure 6. Summarizing and Comparing Factors that influence implementation of e-learning practices in preservice English teacher education in Hong Kong and mainland China

3.3 Summary

1) Concept and Focus for This Study

Turvey (2010) designed research focusing on British preservice English teachers' professional knowledge of e-learning, using a pedagogical-research method via a case study. His research model focused on both the impacts from the pedagogies and those of the research and how those influences held in relation to each other. Turvey (2010) concluded that the pedagogical-research method could stimulate preservice English teachers to develop their professional knowledge and skills for e-learning in certain situations. However, that finding was only at a surface level. A potential factor that should be tested in future studies is whether pedagogical-research methods have enough ways to test and reflect how deeply and widely the implementations of e-learning practices influence the teaching processes of preservice English teachers. Thus, when Turvey's research model was used for the research design in this study, the potential factors were considered and tested.

Furthermore, Laferrière et al. (2006) studied how, based on learning theories, the e-learning model emerged in teacher education, and they found that 1) knowledge transmission, 2) knowledge construction, 3) participation in communities of practice, and 4) collective knowledge-building were influenced by the e-learning methods employed and therefore should be taken into account in the development of e-learning. Thus, in this thesis study, those four elements were considered as the potential results of implementing e-learning practices in preservice English language teacher education

in Hong Kong and mainland China. This study's detailed research design mapping is shown in Figure 7. The independent variable was the implementation of e-learning practices in preservice English language teacher education, and the dependent variable was the preservice English teachers' strategy for implementing e-learning practices in preservice English language teacher education.

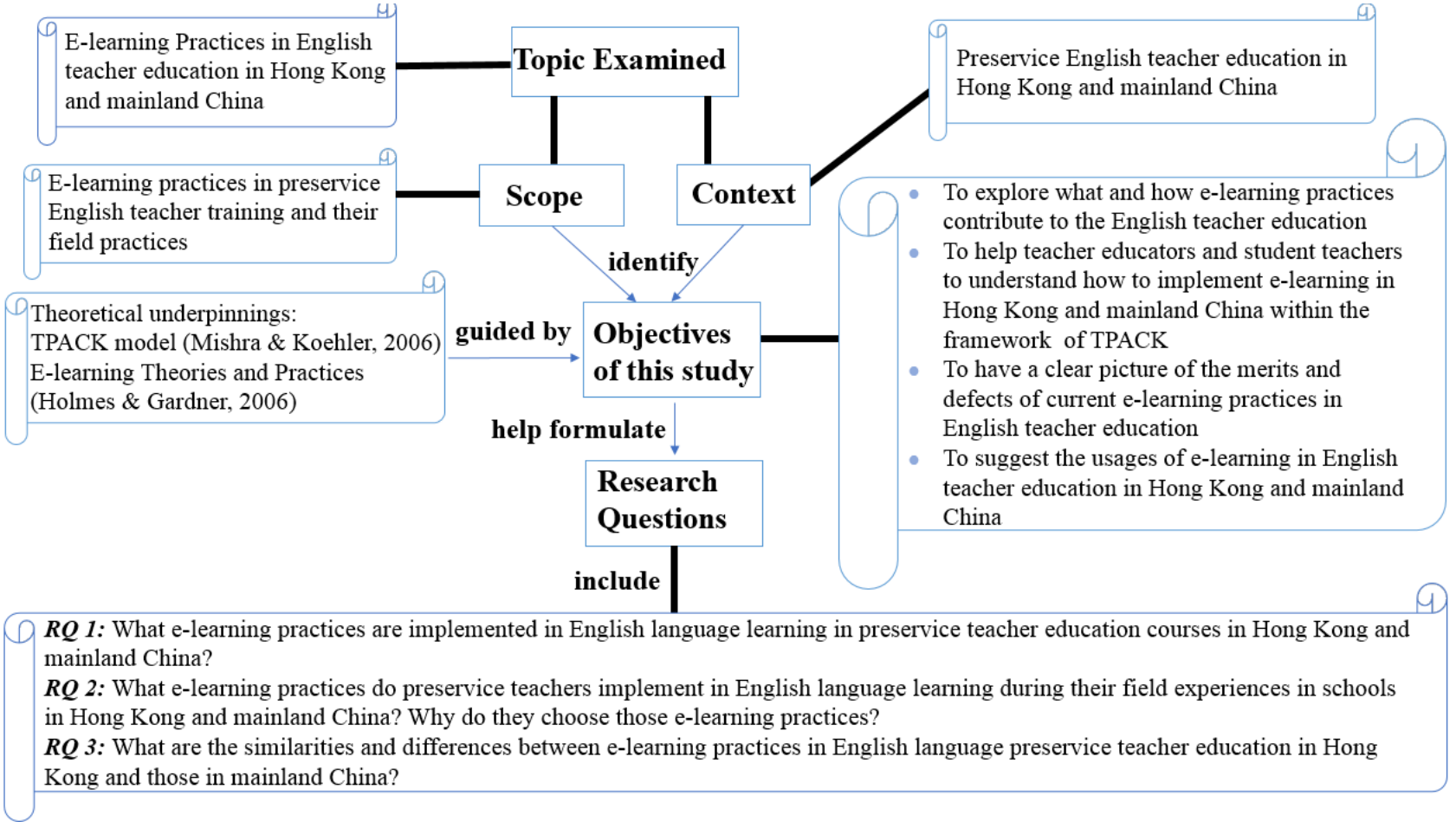

Figure 7. Context and Focus of the Study

2) Research Gaps and Research Questions

Although the implementation of e-learning in teacher education has become an accepted component in the past decade, King and Boyatt (2015) pointed out two gaps in that implementation. The first was that preservice English teachers sometimes lacked adequate knowledge and skills to choose the proper educational technologies for implementing e-learning in their field practices. The other was that some teacher educators over-focused on their choices of educational technologies and not on their implementation of e-learning in a precise subject. Thus, a significant challenge for preservice English teachers and teacher educators is how to tailor their integration of e-learning to fit the requirements of their training and field practices.

King and Boyatt (2015) summarized three important factors for implementing e-learning in teacher education: institutional infrastructure, teacher educators' attitudes, and preservice English teachers' expectations. In consideration of the TPACK framework, pedagogical context is the most vital element for integrating e-learning. Chai, Koh, and Tsai (2010) conducted an exit survey of TPACKs to determine the relationships among each element in the TPACK framework in teacher education in Singapore. For that research, ICT courses were offered to preservice teachers. Their results showed that once preservice teachers felt comfortable using the technical knowledge they had learned, they gradually decreased their attention to pedagogical knowledge. Thus, currently designed courses about developing TPACKs for preservice teachers are not comprehensive, and the current ICT curriculum for preservice teachers'

professional development needs revision. Besides the aforementioned research gaps, upon reviewing the literature, other research gaps related with this study are listed. First, although many studies have focused on the implementation of e-learning practices in preservice English language teacher education, and almost all of them have focused on the use of English learning strategies and skills, this research will focus on implementation of e-learning practices in preservice English language teacher education. Second, many studies have been conducted on English language learning that implements e-learning practices and have focused on e-learning in the classroom environment, e-learning content, and learning activities used for implementing e-learning practices. However, the existing research lacks adequate coverage of the training for preservice English teachers to become English language teachers, when that training is conducted through implementing e-learning practices in English language learning strategies. Meanwhile, other current issues are apparent: Preservice English teachers do not have sufficient resources to lead their teaching process using supplementary digital resources, they cannot easily handle the implementation of e-learning practices as practical instruction, and they have too many differing perspectives about educational technology, such that the relationships among preservice English teachers, teacher educators, and the universities are not dynamic. Thus, three main research questions are:

***RQ 1*:** What e-learning practices are implemented in English language learning in preservice teacher education courses in Hong Kong and mainland China?

***RQ 2*:** What e-learning practices do preservice teachers implement in English language learning during their field experiences in schools in Hong Kong and mainland China? Why do they choose those e-learning practices?

***RQ 3*:** What are the similarities and differences between e-learning practices in English language preservice teacher education in Hong Kong and those in mainland China?

Chapter 4: Research Design and Methodology

4.1 Concerns for Research Design

A new model that implemented TPACK is referred to in Israel as a one-to-one (1x1) classroom (Blau, Peled & Nusan, 2016). In this type of classroom, the role of teachers changed, and they were not the center of the class. Students' abilities to evaluate their classes' content, and their awareness of critical thinking, were highly improved. With the implementation of the 1x1 classroom, the digital literacy of Israeli students improved. The design of the research instruments for this research referred to this pedagogical method. In a related study, Yeh, Lin, Hsu, Wu, and Hwang (2015) chose science teachers as participants in their research about teacher competency with the TPACK framework. Meanwhile, their study investigated students' learning needs. Yeh et al. (2015) mentioned that the integration of the TPACK framework was inadequate in preservice teacher education. They discussed five levels for using the TPACK framework in instruction, and those levels helped me to design the research instruments in this research.

Meanwhile, there are significant differences between the past traditional role of teachers in service learning and their present role, and the differences are not limited to teaching. D'Rozario, Avila, and Cheung (2012) mentioned that pedagogical strategy has become a favorite topic of discussion to improve the quality of teacher education. Two significant factors are the teachers and their education. The work by D'Rozario et al.

(2012) deepened our understanding of the cultural and linguistic values of teachers and the pedagogical knowledge and contents for teacher education. Based on the results of those authors' preservice teacher-training program, the so-called "Singapore Swiss Roll" framework has inspired me tremendously. Summarizing the models in their research, teacher training programs should improve preservice teachers' knowledge and skills for managing time, setting goals, and working toward a common purpose. In addition, feedback is essential to training preservice English teachers. Thus, those four key aspects were tested in this study.

A seven-point Likert-type scale survey of the implementation of a TPACK framework was investigated by Koh, Chai, Hong, Tsai in 2015. There were two groups of participants: in-service teachers and preservice teachers. The survey had three parts: questions for the TPACK framework, questions for course design practices, and questions for design disposition. The teacher educators and preservice English teachers understood the interactions among themselves, and it was useful for them to review and revise their instructions and receive feedback. The design method for their survey is worth learning about when designing these sorts of research instruments.

4.2 Research Participants and Sampling Methods Used in this Study

Three hundred and thirty preservice English teachers were involved in the study. In addition, 16 preservice English teachers were interviewed, and their teaching diaries were examined. Eight of them were from Hong Kong and another eight were from

mainland China. The order of interviewing participants from Hong Kong and mainland China took place in an alternating manner. All participants were divided by their nationalities and gender. It was not necessary to consider their major, since they all had the same major.

Based on the exemplification of the types of sampling methods commonly used in quantitative research (Creswell & Creswell, 2017; Kreuger & Neuman, 2006), a stratified random sampling method is adopted in this study. It means that the population is divided into subgroups and members are randomly selected from each group. In this study, the population is completely made up of preservice English teachers in Hong Kong and mainland China. All these participants were divided into four groups, namely:

- Participants come from and study in Hong Kong
- Participants come from and study in mainland China
- Participants come from Hong Kong and study in mainland China
- Participants come from mainland China and study in Hong Kong

4.3 Research approach in this study

4.3.1 Adopting mixed-method approach in this study

This study adopted mixed-methods approach (see Figure 8). Questionnaires were distributed to participants to collect quantitative data, whereas interviews and in-class observations were used to collect qualitative data. Meanwhile, the data from the participants' weekly teaching diaries were examined to produce a "thick" description

of how the participants applied e-learning in their own classrooms, in order to qualitatively support the research. Following Cheng's (2014) work, the TPACK model was applied in this study and the preservice English teachers' PK, CK, and TK were the main items investigated. The preservice English teachers' PK was divided into four aspects for investigation: preparation before class, demonstrations for different lessons with e-learning approaches, designs for curriculum and syllabus, and peer cooperation. The preservice English teachers' CK was tested primarily in terms of preparations before the class. Finally, the research interest in the preservice English teachers' TK mainly focused on demonstrations for different lessons using e-learning approaches. All of the research instruments used the same questions to participants, but the dimensions became increasingly deep.

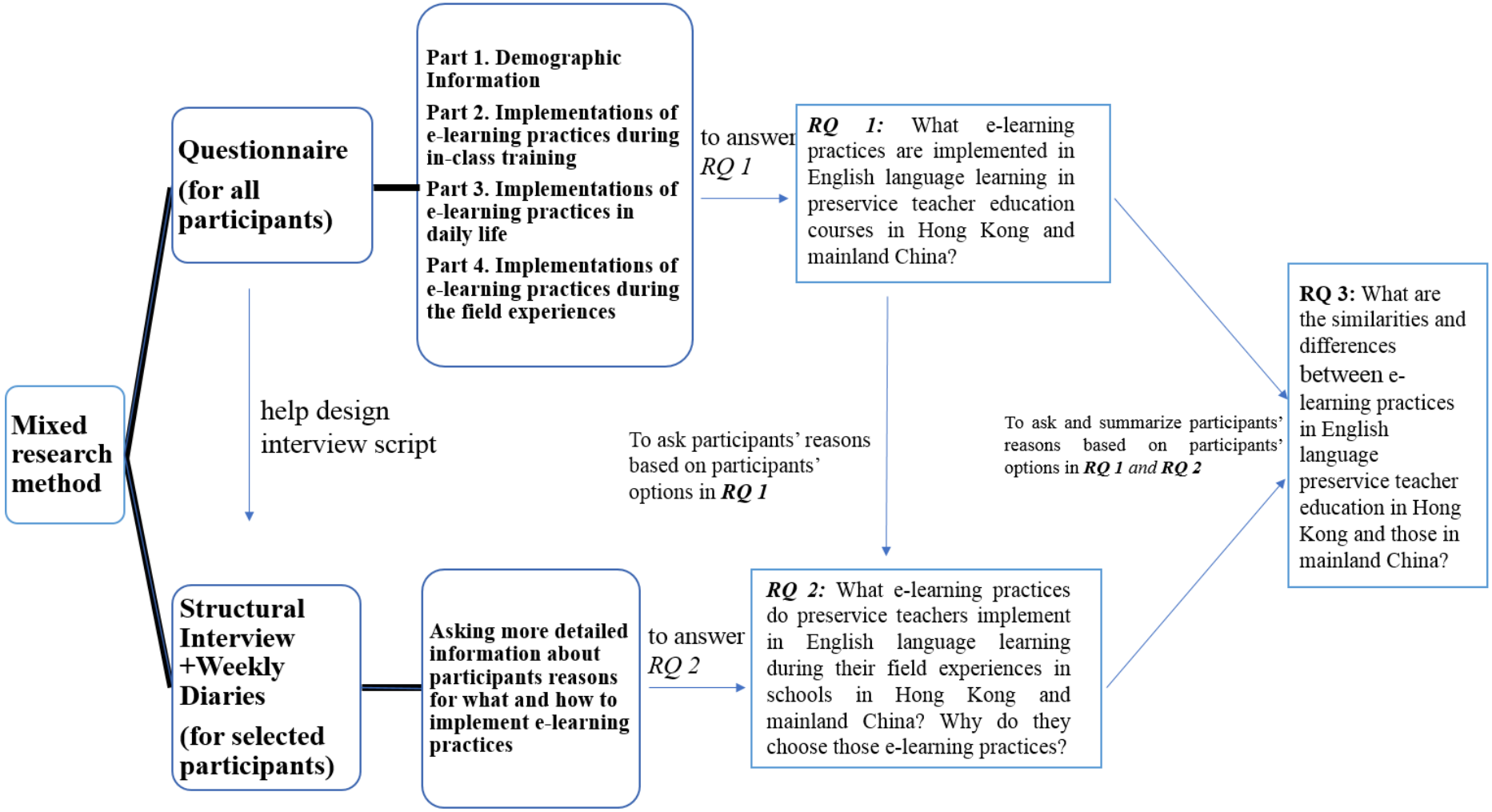

Figure 8. Research Methods and Instruments adopted in this Study

4.3.2 Integrating Comparative Research Method in This Study

Based on the research conducted by Ragin (2014) and Tuckman and Harper (2012), the basic procedures of conducting comparative research include five main steps:

- Select a topic
- Review the literature
- Develop a hypothesis
- Select the comparison groups
- Select tool for measuring variables and collecting data

In this study, I employed these aforementioned theories, and this study followed the structural outlines in Zohrabi's research (2013). In this work, the main comparison was that of the e-learning practices in preservice English language teacher education in Hong Kong and in mainland China. Before beginning main comparison in this study, I compared, in Chapter 3, the contextual backgrounds of Hong Kong and mainland China during two periods of their history. In Hong Kong, the two salient eras were that of preservice English language teacher education in British Hong Kong and the period after Hong Kong's reunification. In mainland China, the two eras were those of preservice English language teacher education before and then after the Reform and Opening-up of mainland China. Under that main comparison, I applied several sub-comparisons when analyzing the collected data from different stages and scenarios, and I then summarized the findings from each analytical stage. The specific contents of the analyses are illustrated in Chapter 5 through Chapter 7.

4.3.3 Reliability and validity of the research methods

Whole research includes two main processes, input and outcome. In the input process, researchers should confirm and check that the content of the research is valid, by using design-assessment tools. In the outcome process, researchers should confirm and check that the construct, outcome, and consequences are valid, by assessing the collected data. Repeated assessments link these two main processes. Finally, after the entire process is completed, the reliability of the research should be assured (Spratt, 2009). Drawing from the explanations in Spratt (2009), knowledge validity could be a vital part of the assessment design. When this researcher evaluated the processes of input and output, student assessment was a part of both. The information, the results of previous assessments, and the knowledge of validity were a loop for assisting in completing the whole process of assessment. The reliability of this study was tested and retested the value of the Cronbach's α coefficient, and the resulting calculated value was significant for the study. In addition, a pretest was used for revising the final questionnaire. Reliability analysis was used to check each factor, and the Cronbach's α correlation coefficients were calculated to evaluate the degree of the inter-relatedness among the factors. If the value of the Cronbach's α coefficient is 0.70 or higher, it is considered acceptable in most social science research situations.

Meanwhile, Aksu (2014) invited 768 preservice teachers from different universities to develop a scale to improve the preservice teachers' TPACKs, in five stages, since Aksu (2014) had found that if teachers have insufficient content knowledge, students' interest

in learning will be adversely influenced and students may misunderstand the content. Aksu (2014) used the Kaiser-Meyer-Olkin (KMO) measure of sampling factors, and that measure was used in this research. The validity of this study was tested based on the value of Kaiser-Meyer-Olkin (KMO) by using the Statistical Package for Social Science (SPSS) software, and the resulting calculated value was significant for the study. The values of KMO in this study varied from 0 to 1. When the KMO value is close to 0, it means the correlations are not reliable. The Kaiser-Meyer-Olkin (KMO) test is adopted to measure the validity of the collected data in this study. The test measures sampling adequacy for each variable in the model and for the complete model. The statistic is a measure of the proportion of variance among variables that might be common variance. KMO values between 0.8 and 1 indicate the sampling is adequate. In addition, Bartlett's test for equal variances and to indicate the validity of the methods used for data analysis were used in this study.

4.4 Research Instruments

4.4.1 Questionnaire

Drawing from the TPACK model summarized by Mishra and Koehler (2006), the design of this study's questionnaire was divided into four parts: demographic information of the participants, implementation of e-learning practices of English language preservice English teachers during their in-class training courses, implementation of e-learning practices of English language preservice English teachers during their everyday life, and implementation of e-learning practices of English

language preservice English teachers during their field experience. Statistical Package for Social Science (SPSS) software were utilized for recording and analyzing the collected data by the questionnaire. E-learning practice in preservice English language teacher education in Hong Kong and mainland China, is the topic of this study. After reviewing relevant literature, a significant gap elucidated by Yeh, Hsu, Wu, Hwang, and Lin (2014) was considered, namely the need of a TPACK model that combines related knowledge and teacher experience. It is imperative to modify the research instruments to fill that gap in this study. Based on aforementioned research conducted by Haythornthwaite (2011), this study is about examining e-learning as a pedagogical phenomenon. As Howland and Wedman (2004) and Lee and Kim (2017) state, four main steps apply to designing research that is related to the TPACK framework: reflection, development, feedback, and implementation. These steps are considered in this study when designing the research instrument. Firstly, the step names implementation. In the part two and four of questionnaire, participants will explain their experience of implementation of e-learning practice during their training and field practices. Secondly, the step names development. In the third part of questionnaire, participants will illustrate their experiences of developing their capabilities of using e-learning tools in English learning and teaching by self-modeling in their daily life. Finally, steps name reflections and feedback. After completing the questionnaire, selected participants will attend the interview and provided their weekly diaries with reflection to show their feedback of implementation of e-learning practice in English language teaching and learning.

1) The Demographic Information of Participants

In the first part of the questionnaire, the demographic information of participants was requested, using six questions. All six questions related to the participants' gender, academic year, hometown, and affiliations. In addition, the questionnaire contained detailed questions about participants' previous teaching experiences and field experiences. The sources of all these questions are from factors that influence the implementation of e-learning in preservice English language teacher education (see Table 1).

Table 1. The Part one of the Questionnaire

E-learning practices in Pre-service English Language Teacher Education in Hong Kong and Mainland China

Part 1. Demographic Information

A1. Your gender is

- ○ Male
- ○ Female

A 2. Where are you from and currently studying in?

- ○ Hong Kong, Hong Kong
- ○ Mainland China, Mainland China
- ○ Hong Kong, Mainland China
- ○ Mainland China, Hong Kong

A 3. Which academic year are you in now?

- ○ Year 1
- ○ Year 2
- ○ Year 3
- ○ Year 4
- ○ Year 5

A 4. Have you joined any workshops or compulsory lessons about e-learning practices for teaching English before you enrolled the university?

- ○ Joined
- ○ Not yet Joined

A 5. Have you taught English in schools or tutorial center before you enrolled the university?

- ○ Yes, I have
- ○ No, I have not

A 6. Do you have any experience of field practices in any subjects before you enrolled the university?

- ○ Yes, I have
- ○ No, I have not

2) Participants' experiences of implementation of e-learning practice in in-class training

Following what Rosenberg and Koehler (2015) suggested, when designing the instrument for this study, there was consideration of the significance of context in the research and on how the context related to better practices. Awidi and Cooper (2015) summarized guidelines about how to integrate e-learning into teacher education and these are referred to when designing the research instruments in this study. All skills tested in the research completed by Song, Kim, Kim, Ban, and Ryu (2003) suggested what to ask participants about their e-learning practices during their in-class training. Meanwhile, Wang and Jou (2016) listed the primary elements for designing the curricula for teacher education, and those elements are used as the standards for designing the research instruments in this study. The detailed references for those questions are listed in Table 2.

Table 2. References for the Design of Questions in the Part Two of the Questionnaire

Focused items in the Questionnaire	Reference	Focus of the study	Items in reference
Question B1	Chai, C. S., Koh, J. H. L., & Tsai, C. C. (2010)	**TPACK**	I can use a wide range of teaching approaches in a classroom setting.
Question B2	Szeto, E., Cheng, A. Y. N., & Hong, J. C. (2016).	**N/A**	What are the teachers' instructional strategies for integrating the media to formulate pedagogies?
Question B3	Same as No.1	**Same as B1**	I know how to solve my own technical problems.
Question C1	Same as No.1	**Same as B1**	I know how to organize and maintain classroom management.
Question C2	Smith, J. J., & Greene, H. C. (2013).	**The video reflection cycle**	I learn more about teaching by viewing my classmates' video clips.
Question C3	Same as No.1	**TPACK**	Useful e-learning tools: Learning Management System /Google/Videos/Social-Media/E-Portfolio
Question D1	Keengwe, J., & Kang, J. J. (2013).	**Technology-rich curriculum**	Grammar-translation method/ Communicative method/ Cooperative method/ New method: New or different methods?
Question D2	Saab, N., & Stengs, S. (2014).	**Same as B1**	Training participants in a training course that centers around subject-matter pedagogy
Question D3	Same as No.1	**Same as B1**	I can use website editors to create and/or modify web pages.
Question E1	Same as No.1	**TPACK**	I can adapt my teaching style to different learners.
Question E2	Kucírková, L., & Jarkovská, M. (2016).	**Same as D1**	Do you think that the reading skill development within the e-learning course can be of the same effectiveness as the face-to-face lessons?
Choices for Question E3	Sardegna, V. G., & Dugartsyrenova, V. A. (2014).	**Same as D1**	Course Components: Blogging,E-portfolio, Videos of Other Teachers, Teaching
	Same as No. 5	**Same as C2**	Wikis/ Social Bookmarking/ Podcasting-downloading, GarageBand, Audacity

Question F1	Same as B1	**TPACK**	I know how to assess student performance in a classroom.
Question F2	Same as B1	**TPACK**	I can think about the subject matter like an expert who specializes in my CS2.
Question F3	Same as D2	**TPACK**	I have had sufficient opportunities to work with different technologies.
Question G1	Same as B1	**TPACK**	I can adapt my teaching based upon what students currently understand or do not understand.
Question G2	Same as B1	**TPACK**	I have various ways and strategies for developing my understanding of my CS2/subject.
Question G3	Same as B1	**TPACK**	I have the technical skills I need to use technology.
Question H1	Archambault, L., Wetzel, K., Foulger, T. S., & Williams, M. K. (2010).	**TPACK**	What was the most difficult part of creating a unit of study that relied upon social networking tools?
Choices for Question H1	Yeh, Y. F., Lin, T. C., Hsu, Y. S., Wu, H. K., & Hwang, F. K. (2015).	**Same as B1**	What ICT tools can bring to teaching practice/ Concerned about the impacts if ICTs could not be handled properly in instruction/ Used basic word processors to manage instructional resources/ Rationalized how they used ICTs to enhance their teaching practices/ Described how they prepared or handled in-class troubles with solutions not impeding ICT-infused instruction/ Described how they customized their ICT-infused instructional materials with the collected resources
Question H2	Same as No. 5	**Same as C2**	I devoted a lot of effort to the video sharing experience
Question H3	Same as No. 19	**TPACK**	What teaching goals do you have now as related to the use of technology?
Choices for Question H3	Afzal, M. T., Safdar, A., & Ambreen, M. (2015).	**User acceptance of information technology model**	E-learning facilities provide me opportunities to integrate effective pedagogy/ E-learning assures schedule flexibility/ E-learning appears to improve the learning outcomes/ E-learning activities are aligned with courses and activities

In part two of the questionnaire, the participants' experiences while training at university were investigated. The participants' knowledge of pedagogical content was investigated from three sub aspects (within each of the seven types of e-learning practices): pedagogical knowledge (PK), content knowledge (CK), and technological knowledge (TK). Therefore, there were 21 questions in total. These questions were labeled as Question B1, Question B2, Question B3, Question C1, Question C2, Question C3, Question D1, Question D2, Question D3, Question E1, Question E2, Question E3, Question F1, Question F2, Question F3, Question G1, Question G2, Question G3, Question H1, Question H2, and Question H3. Because the domain subject in this study was English, these 21 questions focused on e-learning practices in English language teacher education (See Table 3 and Table 4).

Table 3. Question B1-F1 in the Part two of Questionnaire

Part 2 In-Class Training During the University

2.1 Searching and Selecting

B 1. I select some proper e-learning practices from wide range of e-learning practices for English language teaching and learning.
- ○ Always
- ○ Very often
- ○ Sometimes
- ○ Rarely
- ○ Never

B 2. Teachers provide some video records of successful cases about teaching English by the implementations of e-learning practices to formulate English pedagogies.
- ○ Always
- ○ Very often
- ○ Sometimes
- ○ Rarely
- ○ Never

B 3. I know how to solve my own technical problems when I complete the e-learning practices in English.
- ○ Always
- ○ Very often
- ○ Sometimes
- ○ Rarely
- ○ Never

2.2 Exploring

C 1. I do not know how to organize and maintain classroom managements by integrating the e-learning practices for English learning.
- ○ Always
- ○ Very often
- ○ Sometimes
- ○ Rarely
- ○ Never

C 2. I learn more about English teaching by viewing my classmates' video clips.
- ○ Strongly Disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly Agree

C 3. Which one of following technological tools do you always use for English language learning? (Please choose TWO out of five possible choices) *
- ☐ Learning Management System
- ☐ Google
- ☐ Videos
- ☐ Social-Media
- ☐ E-Portfolio Platform

2.3 Testing

D 1. I find that English teachers use listed methods to combine with e-learning practices in the training. (Please choose TWO out of five possible choices) *
- ☐ Grammar-translation method
- ☐ Communicative method
- ☐ Cooperative method
- ☐ Modeling method
- ☐ Directing method

D 2. I participate the training courses most centered-around English subject matter.
- ○ Always
- ○ Very often
- ○ Sometimes
- ○ Rarely
- ○ Never

D 3. I can use website Editors to test and modify the web pages about English teaching and learning.
- ○ Always
- ○ Very often
- ○ Sometimes
- ○ Rarely
- ○ Never

2.4 Analyzing and Synthesizing

E 1. I can adapt my learning style to different learners by following methods. (Please choose TWO out of five possible choices) *
- ☐ Online English learning resources
- ☐ Online student responses to teacher
- ☐ Online collaborative activities
- ☐ Mobile-Apps
- ☐ MOOCs

E 2. I think that the English learning skills development with e-learning practices can be of the same effectiveness as the face-to-face lessons.
- ○ Strongly Disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly Agree

E 3. In general, what technical components with the implementations of e-learning practices are utilized when you are trained to be English teachers? (Please choose TWO out of five possible choices) *
- ☐ Blogging
- ☐ Podcasting
- ☐ Video of another teachers' teaching
- ☐ Social Bookmarking
- ☐ Wiki

2.5 Collaborating and Discussing

F 1. I know how to evaluate learners' performance by integrating the e-learning practices for English learning.
- ○ Always
- ○ Very often
- ○ Sometimes
- ○ Rarely
- ○ Never

F 2. I can discuss the English subject matter like an expert who specialized in English pre-service teacher education in e-learning practices.
- ○ Always
- ○ Very often
- ○ Sometimes
- ○ Rarely
- ○ Never

F 3. I have had sufficient opportunities to work with different technologies for e-learning practices in English learning and teaching.
- ○ Always
- ○ Very often
- ○ Sometimes
- ○ Rarely
- ○ Never

Table 4. Question E2-G3 in the Part two of Questionnaire

2.6 Understanding and Applying **G 1. I can understand my English learning with e-learning practices based upon what teachers currently teach.** ○ Always ○ Very often ○ Sometimes ○ Rarely ○ Never **G 2. I have numerous methods to develop my understanding of e-learning practices in English pre-service teacher education.** ○ Strongly Disagree ○ Disagree ○ Neutral ○ Agree ○ Strongly Agree **G 3. I have the technical skills and I need to use technology for gaining more experience for teaching English Language.** ○ Definitely ○ Very Probably ○ Possibly ○ Probably Not ○ Definitely No **2.7 Creating and Promoting** **H 1. What was the most TWO difficult parts of creating a unit of study that relied upon e-learning practices? (Please choose TWO out of five possible choices) *** ☐ What e-learning technologies can bring to teaching practices ☐ The impacts if e-learning technologies could not be handled properly in instruction ☐ How to customize e-learning-infused instructional materials with collected resources ☐ How to prepare in-class troubles with solutions not impeding e-learning-infused instructions ☐ How to use e-learning-infused instructions to enhance the teaching practices **H 2. I devote a lot of effort to the e-learning practices in English teaching and learning.** ○ Always ○ Very often ○ Sometimes ○ Rarely ○ Never	**H 3. What learning goals do you have now as related to the e-learning practices?** ○ Providing me opportunities to integrate effective pedagogies ○ Assuring my schedule flexibility ○ Improving my learning outcomes ○ Well-structured and organize information is available for me ○ E-learning practices are aligned with courses and field practices

3) Participants' Experiences of Implementation of E-Learning Practice in Daily Life

Factors which influenced the implementations of e-learning practices in teacher education elucidated by Kontkanen, Dillon, Valtonen, Renkola, Vesisenaho and Väisänen (2016) referred to the preservice English teachers' beliefs towards implementations of e-learning practices in participants' daily life (see Table 5).

Table 5. References for the Design of Questions in the Part Three of the Questionnaire

Focused items in the Questionnaire	Reference	Focus of the study	Items in reference
Question J1	Kontkanen, Dillon, Valtonen, Renkola, Vesisenaho & Väisänen (2016)	**TPACK**	Question about making e-learning easier
Question J2			Question about improving motivation
Question J3			Question about e-learning experiences
Question J4			Question about skills connected to information retrieval, teaching, practicing certain skills

In the questionnaire's third part, the participants' belief towards implementing e-learning practices in their daily life were investigated. Four questions were designed for this part. These questions were labeled as Question J1, Question J2, Question J3, and Question J4 (see Table 6).

Table 6. Part three of the Questionnaire

Part 3. Self-modeling E-learning Practices in the Daily Life

J 1. I recap my planned e-learning practices to make myself more familiar with these practices in my daily life.

- ○ Always
- ○ Very often
- ○ Sometimes
- ○ Rarely
- ○ Never

J 2. I believe that implementations of e-learning practices make myself more excited and satisfied with my lecture.

- ○ Strongly Disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly Agree

J 3. I believe that implementations of e-learning practices improve my senses of accomplishment.

- ○ Strongly Disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly Agree

J 4. The implementations of e-learning practices in English language teacher education make me more easily design the teaching content.

- ○ Strongly Disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly Agree

4) Participants' Experiences in The Implementation of E-Learning in the Field Practice

Factors which influenced the successful implementation of e-learning during field practice in teacher education (Szeto, Cheng, and Hong, 2016 and Başak and Ayvacı, 2017) were referred to when designing the research instruments for this study. Lee and

Kim (2017) suggested that preservice English teachers should consider changing roles with their students in their field practice teaching activities. Based on this, in this study, participants were interviewed on this subject because such a role change would increase the students' comprehension of the information they learned and would push the preservice English teachers to figure out what they had missed and what knowledge they should add to their teaching process. The detailed references for these questions are listed in Table 7.

Table 7. References for the Design of Questions in Part Four of the Questionnaire

Focused items in the Questionnaire	**Reference**	**Focus of the study**	**Items in reference**
Question K1	Saab, N., & Stengs, S. (2014).	**TPACK**	I know how to select effective teaching approaches to guide student thinking and learning in my subject.
Question K2	Chai, C. S., Koh, J. H. L., & Tsai, C. C. (2010).	**TPACK**	I can select technologies to use in my classroom that enhance what I teach, how I teach, and what students learn.
Question K3	Lee, C. J., & Kim, C. (2017).	**TPACK**	What different technologies can be used to help students learn about glacier change? (TCK)?
Question L1	Afzal, M. T., Safdar, A., & Ambreen, M. (2015).	**User acceptance of information technology model**	E-learning made possible different kinds of learning styles.
Question L2	Same as K2	**TPACK**	I can use strategies that combine content, technologies, and teaching approaches that I learned about in my coursework in my classroom.
Question L3	Same as L1	**Same as L1**	E-learning tools that allow teachers to interact with students in real time.
Question M1	Sardegna, V. G., &	**Technology-enhanced activities**	My online work was generally applicable and/or relevant to the other work I was completing for this class.

	Dugartsyrenova, V. A. (2014).		
Question M2	Same as K3	**TPACK**	Compared with the activity that you have experienced in class, what difference would there be in your (students') learning if you did not use Google Earth, but the teacher used the tool to show you numerous photos regarding glacier change? (TPK)
Question M3	Same as M1	**Same as M1**	Course Components: Beneficial bridging theory and practice improving teaching skills
Choices for Question N1	Same as M1	**Same as M1**	Course Components: lesson design /execution of mini-lessons/textbook analysis/course readings
Question N2	Same as L1	**Same as L1**	E-learning content does not accommodate the preferences of students and teachers.
Question R1	Same as M1	**Same as M1**	My online discussions were generally intellectually stimulating and/or inspiring.
Question R3	Same as K3	**TPACK**	How would you design the activity to let students create digital narratives by using Photo Story on the same topic (the Civil War) by themselves or in collaboration with their parents/grandparents?
Question R2	Same as K2	**TPACK**	I can provide leadership in helping others to coordinate the use of content, technologies, and teaching approaches at my school.
Question S1	Same as M1	**Same as M1**	The time and effort I put into the online component of this course was generally worthwhile, given how much it assisted my professional development.
Question S2	Same as K1	**TPACK**	I know about technologies that I can use for understanding and teaching my subjects.
Question S3	Same as K2	**TPACK**	I can teach lessons that appropriately combine my CS2, technologies, and teaching approaches.

Question U1	Same as M1	**Same as M1**	My professional development as an educator has benefited directly from my online interactions.
Question U2	Same as L1	**Same as L1**	E-learning eases the process of learning.
Question U3	Same as K3	**TPACK**	What is the difference in *understanding* the functions of Google Earth and in2Books compared with using the tools to *experience* inquiry-based activities?

In the fourth part of the questionnaire, the participants' field experiences were explored. Again, the participants' TPACKs were investigated from three sub-aspects within each of the seven types of e-learning practices: pedagogical content Knowledge (PCK), Technological Pedagogical Knowledge (TPK), and Technological Content Knowledge (TCK). There were 21 questions in total. These questions were labeled as Question K1, Question K2, Question K3, Question L1, Question L2, Question L3, Question M1, Question M2, Question M3, Question N1, Question N2, Question N3, Question R1, Question R2, Question R3, Question S1, Question S2, Question S3, Question U1, Question U2, and Question U3. Meanwhile, because the domain subject was English in this study, these 21 questions focused on e-learning practices in English language teacher education (See Table 8 and Table 9).

Table 8. Question K1-R2 in Part four of Questionnaire

Part 4 Implementations of E-learning practices During the Field Experience

4.1 Searching and Selecting

K 1. I do not feel difficult to select effective teaching pedagogies to guide students thinking and learning in English.
- O Always
- O Very often
- O Sometimes
- O Rarely
- O Never

K 2. I cannot select educational technologies to use in my classroom that enhance what and how I teach English and what student learn.
- O Strongly Disagree
- O Disagree
- O Neutral
- O Agree
- O Strongly Agree

K 3. What different e-learning practices you used to help your students to learn English. (Please choose THREE out of seven possible choices) *
- ☐ Selecting and searching
- ☐ Exploring
- ☐ Testing
- ☐ Analysis and synthesize
- ☐ Collaborate and discuss
- ☐ Understand and apply
- ☐ Create and promote

4.2 Exploring

L 1. E-learning practices make possible different kind of learning styles to be catered in my field practices.
- O Strongly Disagree
- O Disagree
- O Neutral
- O Agree
- O Strongly Agree

L 2. I cannot use strategies that combine content, technologies and teaching approaches that I learnt about in my classroom.
- O Always
- O Very often
- O Sometimes
- O Rarely
- O Never

L 3. E-learning practices allow me to interact with students in real time.
- O Always
- O Very often
- O Sometimes
- O Rarely
- O Never

4.3 Testing

M 1. My online work is generally applicable and/or relevant to the other work I was completing for this class.
- O Strongly Disagree
- O Disagree
- O Neutral
- O Agree
- O Strongly Agree

M 2. Comparing to the activities that you have experienced in training, there are differences in your field experience if yourself do not use the e-learning practices, but to show lot of pictures to students regarding the content you teach.
- O Always
- O Very often
- O Sometimes
- O Rarely
- O Never

M 3. E-learning practices beneficially bridges pedagogical theories and teaching practices to improve my teaching skills.
- O Strongly Disagree
- O Disagree
- O Neutral
- O Agree
- O Strongly Agree

4.4 Analyzing and Synthesizing (Please choose ONE out of seven possible choices)

N 1. Which type of e-Portfolio Platform do you currently use in your teaching to keep your teaching schedules during your field experiences?
- O Mahara
- O Weebly
- O Blogger
- O WordPress
- O Other: (Please specify)

N 2. During the field experiences, e-learning practices accommodate the preference of students and teachers.
- O Always
- O Very often
- O Sometimes
- O Rarely
- O Never

N 3. To reduce my anxiety, schools provide technology support for me about teaching and learning English before the start of the field experience.
- O Always
- O Very often
- O Sometimes
- O Rarely
- O Never

4.5 Collaborating and Discussing

R 1. Online English teaching and learning discussions are generally intellectually stimulating and inspiring for my student.
- O Always
- O Very often
- O Sometimes
- O Rarely
- O Never

R 2. I can provide leadership in helping others to coordinate the use of content, technologies and teaching approach during the field practices.
- O Strongly Disagree
- O Disagree
- O Neutral
- O Agree
- O Strongly Agree

Table 9. Question R1-U3 in the Part Four of Questionnaire

R 3. I design the activities to let students create digital narratives by using e-learning practices on the topic of learning English in collaboration with their parents. O Always O Very often O Sometimes O Rarely O Never **4.6 Understanding and Applying** **S 1. The time and effort I put into the e-learning practices of the course is generally worthwhile, given how much it assisted my professional development.** O Strongly Disagree O Disagree O Neutral O Agree O Strongly Agree **S 2. I know about technologies that I can use for understanding and teaching English with e-learning practices for my students.** O Strongly Disagree O Disagree O Neutral O Agree O Strongly Agree **S 3. I can teach English that appropriately combine with my understandings for curriculum studies, technologies and teaching approaches.** O Strongly Disagree O Disagree O Neutral O Agree O Strongly Agree **4.7 Creating and Promoting** **U 1. My professional development as an educator has benefited directly from online interactions through e-learning practices** O Strongly Disagree O Disagree O Neutral O Agree O Strongly Agree	**U 2. During the field practices, e-learning practices ease the process of my teaching** O Strongly Disagree O Disagree O Neutral O Agree O Strongly Agree **U 3. There are differences in *understanding* the functions of e-learning practices comparing with *experiencing* activities for teaching English.** O Much Higher O Higher O About the same O Lower O Much lower

4.4.2 Interviews

In this study, the Questionnaire, Interviews, and Diaries are designed as the research instruments. The interviews, and then the diaries, expanded on all of the previously acquired information, adding new perspectives and dimensions with each phase. Zacharias (2011) demonstrated reasons for the effectiveness of interviews, in his book *Qualitative Research Methods for Second Language Education: A Coursebook*. Zacharias posited that interviews can help researchers understand and discuss English language e-learning practices. Specifically, interviews can help researchers to recognize

the detailed e-learning practices used in preservice English language teacher education. Furthermore, interviews can help researchers to summarize the e-learning practices used in previous teaching and learning processes in English language teacher education and then to give effective suggestions for future teaching and learning processes.

For the interview portion of this study, I randomly selected 16 participants to interview, following their completion of the questionnaire. I chose eight from Hong Kong and eight from mainland China and grouped them according to their nationality and current educational institution. Before the interviews, interviewees were asked to read the information sheet about this study and sign a consent form. Then, working from their questionnaire answers, I interviewed them about their reasons for choosing the options they did. There were two parts in the interviews. Part one is questions of interest from the questionnaire. Participants were asked the reasons for their options in response to these questions. For example, if a participant opted for “very often” for Question B1, I asked him/her why he or she had chosen that option. And part two includes two additional questions. These two questions are adopted to ask participant’s suggestions for implementation of e-learning practice in the future. A list of the interview scripts, and the text of the two additional questions, are given in Table 10. An audio recording pen was used to record the interviews, and each interview lasted approximately 1 to 1.5 hours. I kept all of the interview records confidential until I had completed the research; then, I saved all of the records to a computer hard disk and field them with unique labels.

Table 10. The Interview Guides

Section	Questions of Interest from the Questionnaire	Interview Approach
1	Selected Questions from Question B1 to Question U3	Participants were asked the reasons for their options in response to these questions. For example, if a participant opted for "very often" for Question B1, I asked him/her why he or she had chosen that option.
2	Question 1--Comparing your in-class training experience and your field experience, in which do you think you completed more e-learning practices? Question 2--What suggestions do you have with regard to your training and field experiences?	

4.4.3 Participants' Teaching Diaries with Reflection

Macaro (2002) suggested that diaries could be a useful tool for collecting structural data from certain time slots. Specifically, diaries are dialogs among teachers, students, and researchers. Gromik (2017) suggested that weekly diaries could be suitable for both participants and researchers within certain time slots, because the technique could save time and reduce the burden for recording and analyzing data. In Kabilan and Khan's (2012) study, positive attitudes were found to exist toward the preservice English teachers' weekly journals, and the journals reminded the preservice English teachers to recall the domain of their teaching and to be mindful of their current roles. Based on those benefits, in order to provide preservice English teachers with suggestions for designing effective classroom practices, this study contained interview questions asking participants about those benefits to determine whether the practices are beneficial in teacher education in Hong Kong and mainland China.

For this study, I followed the interview phase by examining the weekly diaries from the same preservice English teachers that I had interviewed. Their diaries contained not only their teaching plans, but their reflections and the problems they encountered during their field practice. My goal was to double-check whether the information each participant had given in the interview matched what was written in their diary. In this stage, eight to 17 weeks' worth of diary entries were recorded.

4.5 Data Collection and Analysis

A basic research method employed two approaches for studying the use of e-learning practices in English language learning (Macaro, 2002). One approach was the descriptive method, which focused on the e-learning features and number of practices, and that approach has provided guidelines for this study's quantitative research method using questionnaires. The second approach was the intervention method, which focused on in-depth changes of and reasons for the e-learning practices and has provided the guidelines for this study's qualitative research method using interviews. Meanwhile, the three levels of the implementation of e-learning practices in teacher education (Rosenberg & Koehler, 2015) are considered in order to analyze the collected data. All data were analyzed from the perspective of students. Based on the research conducted by Lim et al. (2015), the weekly journals of some of the preservice English teachers' participants were collected in order to investigate their learning and teaching outcomes from their TPACK frameworks in this study (see Figure 9). Mishra and Koehler (2006) conceptualized the TPACK model and used it for the process of data collection. The TPACK model was expected to be helpful to the researcher in learning the participants'

intentions for implementing e-learning practices in preservice English language teacher education in Hong Kong and mainland China. The model was expected to provide more proof about the acceptance and intention of the process of data collection about implementation of e-learning practices in preservice English language teacher education in Hong Kong and mainland China over the course of a few months.

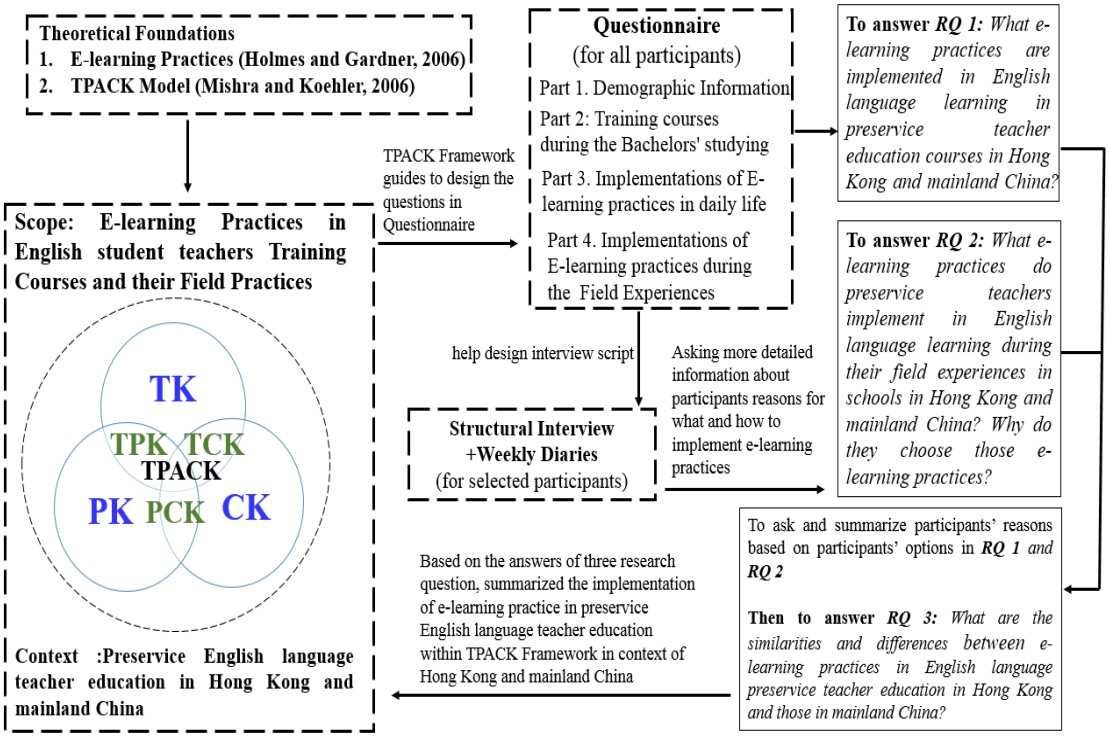

Figure 9. Three Research Instruments and TPACK Framework

4.6 Overview of the Data Collection and Analysis Phases

The collected data were labeled for analysis, which comprised seven stages. The first stage was reliability and validity analysis. This step mainly focuses on computing the Cronbach's α values of all collected data to test the reliability and the value of KMO validity of all collected data to test the validity and then deleting invalid data. The

second stage was computing descriptive statistics of all collected data. The aim is to calculate general information, for example, the number of participants and the percentage of participants who chose each option. Thirdly, assessing whether two categorical variables are related. To do this, the Chi-Square Test is used to analyze all reliable and valid data. The purpose of the fourth stage is to specifically compare the situations between Hong Kong and mainland China. The fifth stage and sixth stage are using a thematic content analysis method to analyze collected interview data and teaching diaries during the field practice, including getting familiar with the data, labeling the whole text, searching for themes with broader patterns of meaning, reviewing themes to make sure they fit the data and defining and naming themes, and subsequently creating a coherent narrative that includes quotes from the interviewees. The final stage sets sights on answering the research questions and putting forward further implementation in the relevant research topics (see Figure 10).

Stages of Analysis	Chapter	Purposes for Analysis
1. Reliability and Validity 2. Descriptive Statistic	5	To make sure reliability and validity of collected data To calculate of the general information--for example, the number of participants and the percentages of participants who chose each option
3. The Chi-Square Test	6	To test for whether participants' options for implementing of e-learning practice in three scenarios is influenced by four factors
4. Retesting Chi-Square Test	7	To test for a statistically significant difference and whether participants' options for implementing of e-learning practice in three scenarios is influenced by four factors between Hong Kong and mainland China
5. Interview 6. Weekly Teaching Diaries		To explore the reasons for participants' options about implementing of e-learning practice in three scenarios
7. Conclusion and Discussion	8	To answer the research questions and putting forward further implementation in the relevant research topics

Figure 10. Summarizing stages for data analyses

4.7 Ethical Considerations

With research including interviewing people, the fundamental moral contemplations are worried about securing members' secrecy. Participants must be completely educated regarding why the meetings and perceptions are being led and how the data assembled from them will be utilized. Classification must be ensured consistently. The way toward recognizing participants, how they would be advised, how information would be put away. Furthermore, how participants would be engaged with the examination procedure must be deliberately considered. Leslie and Johnson (2014) agreed that technology mentors could provide a model for collaborative learning, and they quoted the standards for ethical practices that I referred to in designing this research's instruments. In addition to the limitations that Leslie and Johnson mentioned, they argued that the ethics issues relating to the use of technology mentors should be evaluated in future studies. This study had to ensure protect participants' privacy, all collected information had to be securely stored within password protected files on a password protected computer). Participants were informed before interview and they signed consent forms and read following Information Sheet (Appendix A). They can fully understand the purpose of this study and detailed information about the way of data collection. Before starting the research, the author's application for ethical review had already been approved by the Human Research Ethics Committee of The Education University of Hong Kong. Ethical approval was granted for the project period from 10 August 2018 to 1 April 2021. Before starting a questionnaire or interview, each participant was required to sign the appropriate forms, including a consent form and an information sheet.

Chapter 5: Summarizing and Displaying Collected Data

The findings of this research are illustrated in seven stages of analysis. The first stage comprised testing the reliability and validity of the collected data. The purpose of the reliability analysis is to analyze the measurement quality of the questionnaire items. The common internal consistency reliability is Cronbach's α. The scores obtained are highly reliable, accurate, reproducible, and consistent from one testing occasion to another. The purpose of the validity analysis is to accurately reflect the desired measurement. Based on the clarifications from Drost (2011) and Golafshani (2003), construct validity subsumes all other types of validity. It shows evidence for statistical analyses of the internal structure of the test including the relationships between responses to different test items. Therefore, in this study, construct validity by the Kaiser-Meyer-Olkin (KMO) test is adopted to estimate whether a test appears to measure a certain criterion. The test measures sampling adequacy for each variable in the model and for the complete model. The statistic is a measure of the proportion of variance among variables that might be common variance. KMO values between 0.8 and 1 indicate the sampling is adequate.

5.1 The First Stage of Analysis

5.1.1 Reliability of the Collected Data

As aforementioned, the common internal consistency reliability is Cronbach's α, the values of which were calculated for the questionnaire items. From Tables 6 through 8 it can be seen that the reliability coefficient value was 0.679, which is greater than 0.6, thus indicating that the reliability of the collected data is acceptable. For the "alpha coefficient of item deleted," if the value of "alpha coefficient of item deleted" is higher than 0.6, it means that the reliability coefficient did not increase significantly after any item was deleted, so the item should not be deleted. The data reliability coefficient value of the study is higher than 0.6, and therefore the comprehensive description of the data reliability is acceptable. Note that corrected-item-to-total-correlation (CITC) was performed prior to calculating Cronbach's α (see Table 11).

Table 11. Values of Cronbach's α with Questionnaire Items for Reliability Analysis

Type of e-learning practice	Question	Cronbach's α after CITC	Cronbach's α if item is deleted	Cronbach's α
2.1 Searching and Selecting	**B1**	0.36	0.661	0.679
	B2	0.316	0.665	
	B3	0.306	0.665	
2.2 Exploring	**C1**	0.225	0.671	
	C2	0.194	0.673	
	C3	0.034	0.682	
2.3 Testing	**D1**	0.188	0.673	
	D2	0.208	0.672	
	D3	0.39	0.658	
2.4 Analyzing and Synthesizing	**E1**	0.007	0.685	
	E2	0.137	0.676	
	E3	0.189	0.673	

2.5 Collaborating and Discussing	**F1**	0.191	0.673
	F2	0.322	0.664
	F3	0.368	0.661
2.6 Understanding and Applying	**G1**	0.192	0.673
	G2	0.178	0.674
	G3	0.146	0.676
2.7 Creating and Promoting	**H1**	0.332	0.664
	H2	0.253	0.669
	H3	0.141	0.678
Questionnaire Part 3. Self-modeling E-learning Practices in Daily Life	**J1**	0.403	0.66
	J2	0.183	0.673
	J3	0.212	0.672
	J4	0.11	0.678
4.1 Searching and Selecting	**K1**	0.061	0.681
	K2	0.144	0.676
	K3	0.212	0.672
4.2 Exploring	**L1**	0.178	0.674
	L2	0.41	0.659
	L3	0.253	0.669
4.3 Testing	**M1**	0.109	0.678
	M2	0.295	0.666
	M3	0.214	0.672
4.4 Analyzing and Synthesizing	**N1**	-0.129	0.699
	N2	0.322	0.664
	N3	0.142	0.676
4.5 Collaborating and Discussing	**R1**	0.13	0.677
	R2	0.034	0.682
	R3	0.238	0.67
4.6 Understanding and Applying	**S1**	0.095	0.679
	S2	0.086	0.679
	S3	0.053	0.681
4.7 Creating and Promoting	**U1**	-0.013	0.686
	U2	0.403	0.66
	U3	0.081	0.681

5.1.2 Validity of the collected data

As aforementioned, construct validity subsumes all other types of validity. It shows evidence for statistical analyses of the internal structure of the test including the

relationships between responses to different test items. (Drost, 2011; Golafshani, 2003). The Kaiser-Meyer-Olkin (KMO) test is adopted to measure the validity of the collected data in this study. The test measures sampling adequacy for each variable in the model and for the complete model. The statistic is a measure of the proportion of variance among variables that might be common variance. KMO values between 0.8 and 1 indicate the sampling is adequate. Based on the values in Tables 6 through 8, we see that the common value of all the research items is greater than 0.4, which means that all the research items are effectively extracted. In addition, the KMO value is 0.848, which is greater than 0.6, thus indicating that the data are valid. (See Table 12, Table 13 and Table 14)

Table 12. Values of KMO within Questionnaire Items for Validity Analysis (Questionnaire, Part 2. In-Class Training at the University)

Type of e-learning practice	Question	Factor Loading												Communality
		1	2	3	4	5	6	7	8	9	10	11	12	
2.1 Searching and Selecting	B1	0.121	0.195	0.309	-0.196	0.512	-0.111	-0.085	0.068	-0.145	0.086	0.014	0.019	0.502
	B2	-0.059	-0.015	0.352	0.003	0.611	0.071	-0.101	0.022	0.092	-0.049	0.023	-0.003	0.528
	B3	0.009	0.16	-0.057	-0.027	0.744	-0.059	0.061	0.014	0.125	0.059	0.03	-0.055	0.613
2.2 Exploring	C1	-0.454	0.342	0.264	0.057	0.365	0.061	-0.103	0.112	-0.258	-0.013	-0.176	-0.059	0.658
	C2	0.202	-0.031	0.128	-0.011	0.131	0.308	0.616	0.03	0.005	0.041	0.126	-0.078	0.574
	C3	0.538	0.037	0.054	0.376	-0.128	0.314	0.077	0.137	-0.016	-0.079	-0.184	-0.036	0.616
2.3 Testing	D1	0.011	0.403	0.499	-0.286	0.057	0.099	0.03	0.006	0.12	0.188	0.242	-0.085	0.623
	D2	0.004	0.068	0.332	-0.148	0.301	-0.041	-0.494	0.005	0.227	-0.014	0.15	-0.08	0.554
	D3	0.044	0.55	0.215	-0.015	0.074	0.096	0.149	0.324	-0.106	-0.15	-0.051	-0.043	0.531
2.4 Analyzing and Synthesizing	E1	0.03	0.057	0.67	-0.081	0.142	-0.01	-0.036	0.125	-0.005	-0.007	-0.006	0.117	0.51
	E2	0.199	0.091	0.115	0.124	-0.035	0.083	0.064	0.036	-0.036	-0.054	0.052	0.688	0.57
	E3	0.251	-0.006	-0.035	0.41	0.076	-0.091	0.471	-0.1	-0.258	-0.004	0.223	-0.225	0.646
2.5 Collaborating and Discussing	F1	-0.112	0.578	0.063	-0.358	0.051	-0.188	0.004	0.082	-0.089	0.041	-0.062	0.123	0.553
	F2	0.027	0.743	-0.12	0.147	0.113	-0.144	-0.021	0.011	0.079	0.008	-0.011	-0.149	0.652
	F3	-0.141	0.6	0.185	-0.014	0.057	0.14	-0.102	0.016	0.067	-0.02	0.153	0.155	0.5
2.6 Understanding and Applying	G1	-0.327	0.143	0.117	-0.25	0.297	0.059	-0.166	0.395	0.085	0.132	0.014	0.233	0.558
	G2	0.285	-0.122	-0.143	0.073	0.065	0.286	-0.12	0.152	-0.512	0.132	0.137	0.032	0.545
	G3	-0.138	0.114	0.146	-0.057	0.239	-0.017	-0.473	0.107	-0.06	0.002	0.189	-0.289	0.472
2.7 Creating and Promoting	H1	0.37	0.158	-0.053	0.102	0.055	0.453	0.246	-0.289	-0.191	-0.017	-0.103	-0.006	0.575
	H2	0.026	0.473	0.038	-0.354	0.223	-0.141	-0.269	-0.047	0.193	0.206	-0.062	0.094	0.588
	H3	0.024	0.001	0.123	-0.109	0.028	0.055	0.029	0.028	0.02	0.766	-0.006	-0.068	0.624
Eigenvalue		2.83	2.735	2.302	2.062	2.011	2.01	1.913	1.687	1.488	1.329	1.3	1.284	
% of variance		7.075	6.837	5.756	5.154	5.028	5.026	4.783	4.216	3.721	3.322	3.251	3.211	

Note: KMO=0.848

Table 13. Values of KMO within Questionnaire Items for Validity Analysis (Questionnaire Part 3. Self-modeling e-learning in daily life)

Question	Factor Loading												Communality
	1	2	3	4	5	6	7	8	9	10	11	12	
J1	0.096	0.37	0.4	0.122	0.218	-0.161	-0.3	0.149	0.19	0.068	-0.047	-0.067	0.554
J2	0.538	0.037	0.054	0.376	-0.128	0.314	0.077	0.137	-0.016	-0.079	-0.184	-0.036	0.616
J3	0.7	-0.031	-0.004	0.047	0.137	0.117	0.079	-0.026	-0.078	0.055	-0.018	0.246	0.603
J4	0.532	0	-0.119	0.084	0.13	0.212	0.229	-0.276	-0.028	-0.064	0.007	0.146	0.521
Eigenvalue	2.83	2.735	2.302	2.062	2.011	2.01	1.913	1.687	1.488	1.329	1.3	1.284	
% of variance	7.075	6.837	5.756	5.154	5.028	5.026	4.783	4.216	3.721	3.322	3.251	3.211	

Note. KMO=0.848

Table 14. Values of KMO within Questionnaire Items for Validity Analysis (Questionnaire Part 4. Implementation of E-learning Practices During Field Experience)

Type of e-learning practice	Question	Factor Loading												Communality
		1	2	3	4	5	6	7	8	9	10	11	12	
4.1 Searching and Selecting	K1	-0.035	0.194	0.492	0.069	0.158	-0.164	-0.045	0.245	0.143	0.36	-0.054	-0.072	0.557
	K2	0.694	-0.069	0.144	0.153	-0.111	0.1	0.089	0	-0.133	0.064	-0.046	-0.019	0.585
	K3	0.011	0.403	0.499	-0.286	0.057	0.099	0.03	0.006	0.12	0.188	0.242	-0.085	0.623
4.2 Exploring	L1	0.37	0.158	-0.053	0.102	0.055	0.453	0.246	-0.289	-0.191	-0.017	-0.103	-0.006	0.575
	L2	0.011	0.403	0.499	-0.286	0.057	0.099	0.03	0.006	0.12	0.188	0.242	-0.085	0.623
	L3	-0.304	0.193	0.315	-0.112	0.19	-0.021	-0.277	0.052	0.266	0.046	0.227	0.034	0.483
4.3 Testing	M1	0.13	-0.145	0.006	0.016	-0.039	0.786	0.134	-0.029	-0.002	0.051	-0.061	0.025	0.683
	M2	0.03	0.057	0.67	-0.081	0.142	-0.01	-0.036	0.125	-0.005	-0.007	-0.006	0.117	0.51
	M3	0.332	0.15	-0.093	0.179	-0.026	0.471	0.253	-0.175	-0.165	0.245	-0.004	0.147	0.6
4.4 Analyzing and Synthesizing	N1	0.041	0.198	-0.456	-0.13	-0.052	-0.028	0.068	0.35	-0.159	-0.294	-0.097	-0.238	0.574
	N2	-0.008	0.137	0.1	-0.094	-0.018	-0.144	-0.097	0.725	0.008	0.121	0.175	-0.075	0.644
	N3	-0.225	0.129	0.142	0.011	0.271	-0.068	0.005	0.455	0.248	-0.196	-0.149	0.151	0.518
4.5 Collaborating and Discussing	R1	-0.081	0.019	0.092	-0.164	0.214	0	-0.153	0.174	0.658	0.132	0.138	-0.1	0.621
	R2	0.286	-0.082	-0.163	0.199	-0.064	0.408	-0.03	-0.08	0.065	-0.222	0.359	0.019	0.516
	R3	-0.073	0.406	0.066	0.044	0.034	0.13	0.011	0.208	0.336	0.039	-0.139	-0.47	0.592

4.6	S1	0.248	0.072	-0.091	0.42	-0.023	0.101	0.46	-0.121	0.129	-0.017	0.008	0.116	0.519
Understanding and Applying	S2	0.212	0.066	-0.003	0.418	-0.127	0.379	-0.048	-0.277	-0.128	0.025	0.15	0.028	0.502
	S3	0.251	-0.006	-0.035	0.41	0.076	-0.091	0.471	-0.1	-0.258	-0.004	0.223	-0.225	0.646
4.7	U1	0.134	-0.058	-0.012	0.648	-0.056	0.02	0.134	-0.071	-0.114	-0.106	-0.042	0.094	0.503
Creating and Promoting	U2	0.151	-0.067	-0.398	0.503	0.013	0.202	-0.052	0.029	-0.055	0.387	0.052	0.21	0.683
	U3	-0.105	0.014	0.068	0.008	0.038	-0.035	0.014	0.086	0.015	0.014	0.816	0.072	0.698
Eigenvalue		2.83	2.735	2.302	2.062	2.011	2.01	1.913	1.687	1.488	1.329	1.3	1.284	
% of variance		7.075	6.837	5.756	5.154	5.028	5.026	4.783	4.216	3.721	3.322	3.251	3.211	

Note. KMO=0.848

5.2 The Second Stage of Analysis

The second stage of analysis related to the general situations described through all of the questions in the questionnaire. This stage contained information about all of the participants and their e-learning practices in Hong Kong and mainland China. The answers are shown for parts one through four of the questionnaires.

5.2.1 Part One of Questionnaire: General Information About Participants

A summary of the general information about the participants, taken from their questionnaire answers, is listed in Table 15. In this study, only two participants come from Hong Kong but study in mainland China.

Table 15. Demographic Information about the Participants (*N*=330)

Questions	*n*	*%*
A1. Gender		
Male	153	46.36
Female	177	53.64
A 2. Nationality, and location of studies		
Hong Kong, Hong Kong	77	23.33
Mainland China, Mainland China	163	49.39
Hong Kong, Mainland China	2	0.61
Mainland China, Hong Kong	88	26.67
A 3. Academic Year		
Year 1	19	5.76
Year 2	49	14.85
Year 3	102	30.91
Year 4	114	34.55
Year 5	46	13.94

In part one of the questionnaire, the participants described their previous experiences before they enrolled at university. Participants answered the following three questions:

- ***A4. Have you joined any workshops or compulsory lessons about e-learning practices for teaching English before you enrolled at university?***
- ***A5. Have you taught English in schools or tutorial centers before you enrolled at university?***
- ***A6. Did you have any experience of field practice in any subject before you***

enrolled at university?

In Table 16, approximately half of the participants (48.79%) attended workshops or courses with compulsory lessons about e-learning practices for teaching English. Although roughly 61.82% of the participants had no experience teaching English in a school or a tutorial center, 54.24% had field experience in some subject.

Table 16. Participants' Previous Experience before Entering the University (N=330)

Responses	*n*	%
A 4. Enrollment in workshops or courses with compulsory lessons about e-learning practices for teaching English		
Joined	161	48.79
Not yet Joined	169	51.21
A 5. Teaching English in a school or a tutorial center		
Yes, I have	126	38.18
No, I have not	204	61.82
A 6. Experience of field practice in some/any subject		
Yes, I have	179	54.24
No, I have not	151	45.76

5.2.2 Part Two of Questionnaire: In-class Training at University

In the second part of the questionnaire, participants mainly provided their statements after they had done training at university, and in reference to that training. This part of the questionnaire contained seven subsections since there are seven types of e-learning

practices (Holmes & Gardner, 2006). Each subsection was made up of three questions, mainly investigating participants' technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK), which they acquired when learning about implementation of e-learning practices in preservice English language teacher education based on the TPACK framework (see Chapter 4). Therefore, there are 21 questions in total in part two of the questionnaire. Among those 21 questions, five were multiple selection and the others were multiple choice. Seven subsections investigate participants' experiences of e-learning practices in their training at university.

1) Searching and Selecting

The first subsection, 2.1, was titled *Searching and Selecting* (see Figure 11). This section had three questions, labeled as B1, B2, and B3:

- ***B1. I select some appropriate e-learning practices from a wide range of e-learning practices for English language teaching and learning.***
- ***B2. Teachers provide video records of successful cases of teaching English through the implementation of e-learning practices to formulate English pedagogies.***
- ***B3. I know how to solve my own technical problems when I complete the e-learning practices in English.***

Thirty-nine percent of participants said they sometimes chose e-learning practices from a wide range of e-learning practices for English language teaching and learning. Less

than 35% said that teachers often provided video records of successful cases about teaching English by implementing e-learning practices to formulate English pedagogies. More than 40% sometimes knew how to solve their own technical problems when they had completed their e-learning practices in English teaching and learning (see Figure 11).

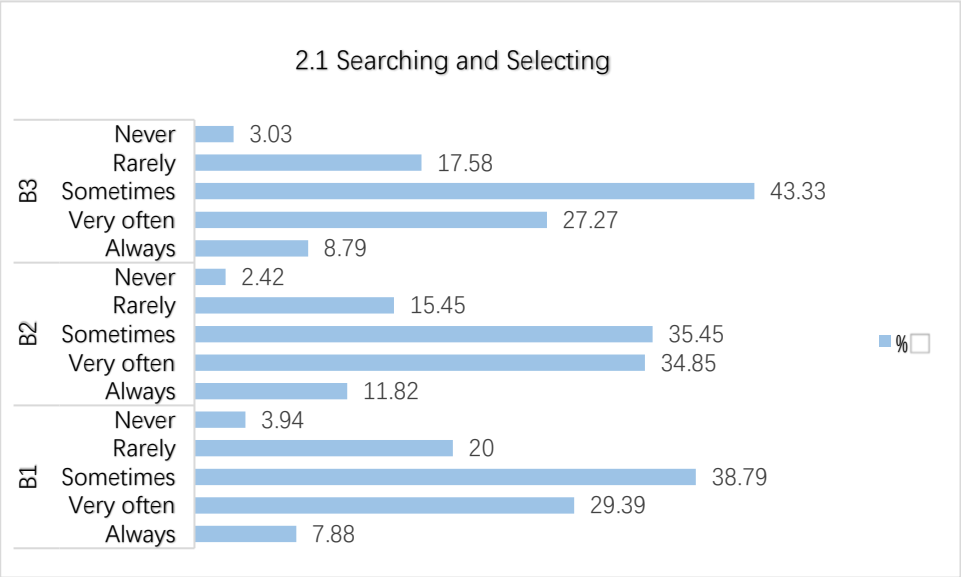

Figure 11. Participants' Responses about e-learning practice named Searching and Selecting (*N*=330)

The participants agreed that success of e-learning practices was determined by the course as well as the available time, because they needed time to select appropriate practices for teaching content. For example, they often used online tools for revising their courses. For a normal course, preservice English teachers disagreed on whether they had enough time to use e-learning tools. Some participants shared similar experiences, stating that they usually used teaching websites more than videos clips. For example, they learned English grammar more by watching content on webpages

than from watching videos. Some participants preferred face-to-face learning, because they felt that the aim of learning English was to communicate. Teaching English using e-learning practices influenced in-class communication. For example, when students watched videos on Moodle, they then had questions to answer but they needed to mark the questions first and they could not directly ask questions to their professors.

2) Exploring

The second subsection was titled *Exploring*, and had two multiple choice questions, C1 and C2:

- ***C1. I do not know how to organize and maintain classroom management by integrating e-learning practices for learning English.***
- ***C2. I learn more about teaching English by viewing my classmates' video clips.***

More than half the participants agreed that they knew how to organize and maintain their management of the classroom by integrating e-learning practices for learning English. Most participants stated that they sometimes learned how to teach English from viewing their classmates' video clips (see Figure 12).

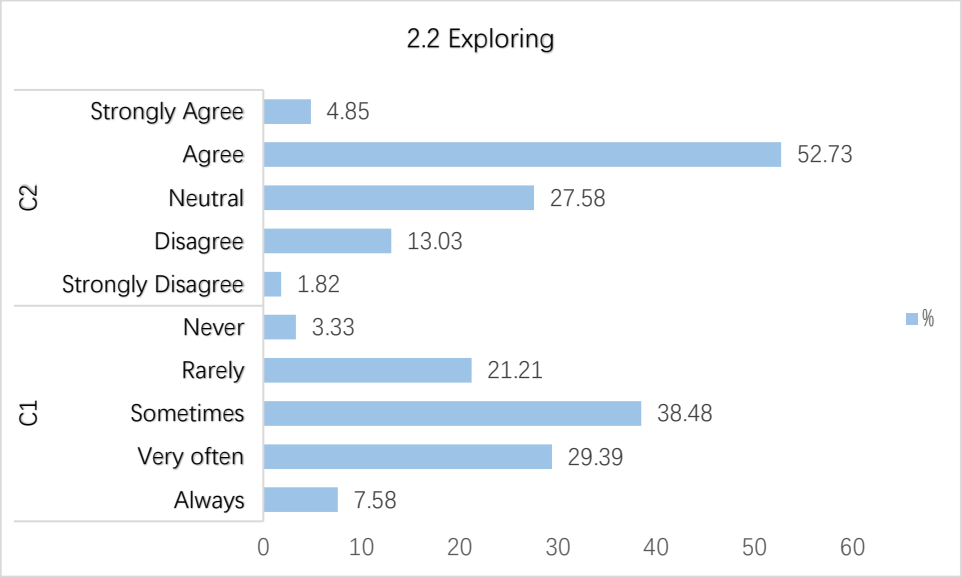

Figure 12. Participants' Responses to e-learning practice named Exploring (*N*=330)

The multiple selection question C3 asked participants what technological tools they always or most often used for English language learning (see Figure 13). Since choices available for each question will vary depending on this study's goals, when participants are taking questionnaires, we want them to pay attention to each question carefully. Therefore, we zoned in on specific options to get direct and clear answers for each question by offering a fixed set of choices. Therefore, we did not have "Others" in our list of options. Participants chose two out of five possible choices, and the two technological tools that they reported most often using were videos and Google Chrome.

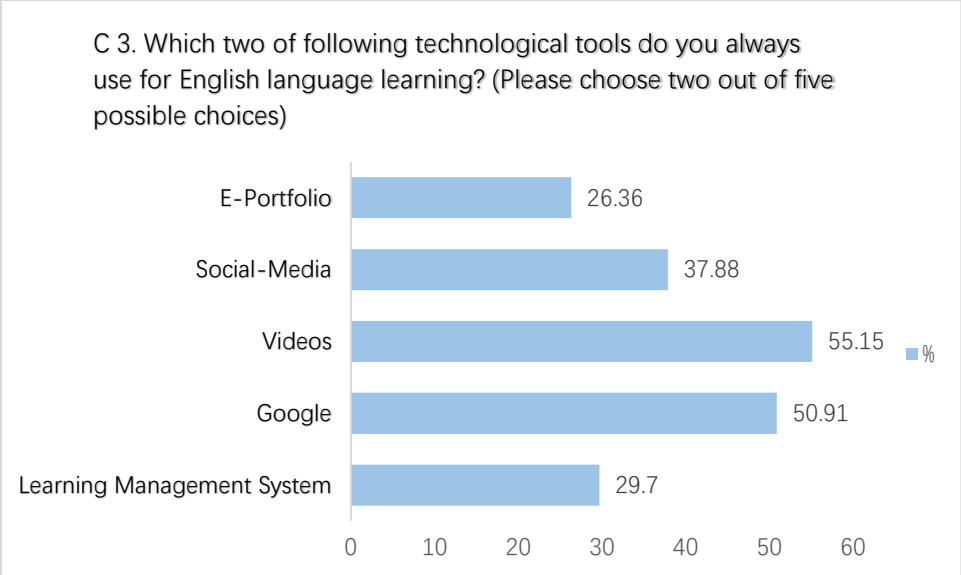

Figure 13. Participants' Responses to technological tools they most often used for English language learning (*N*=330)

3) Testing

The third subsection, titled *Testing*, had one multiple selection question. Participants chose two out of five possible responses about how their English teachers used the listed methods to combine with e-learning practices in their training. Based on the participants' answers, shown in Figure 14, the two methods most often used by teacher educators were the communicative method and the cooperative method.

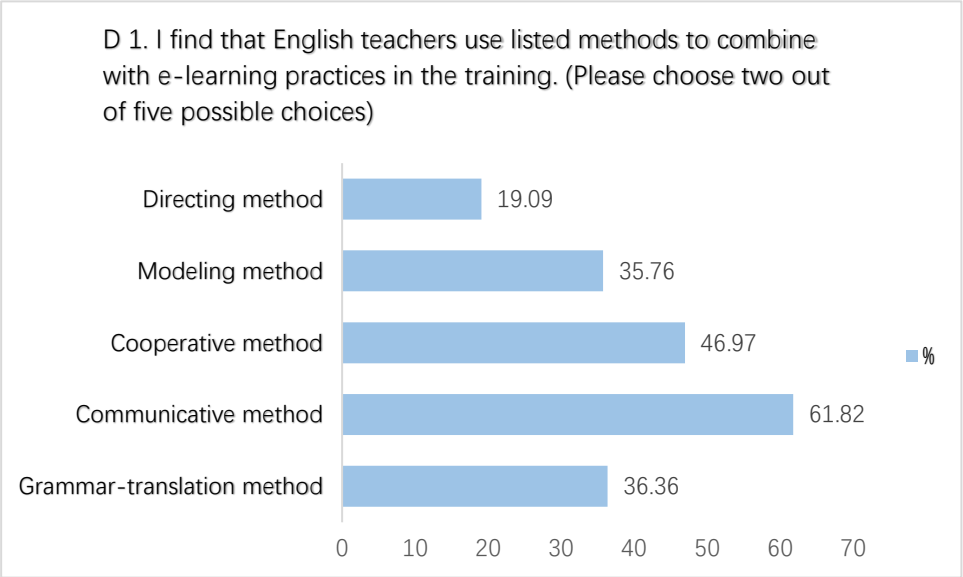

Figure 14. Participants' Responses to two methods most often used by teacher educators (*N*=330)

In subsection 2.3, two multiple choice questions were included:

- ***D2. I participate in training courses mostly centered around English subject matter.***
- ***D3. I can use website editors to test and modify web pages about English teaching and learning.***

Approximately 40% of participants said they very often participated in training courses that were centered largely around English subject matter. Roughly 33% sometimes used website editors to test and modify web pages about English teaching and learning (see Figure 15).

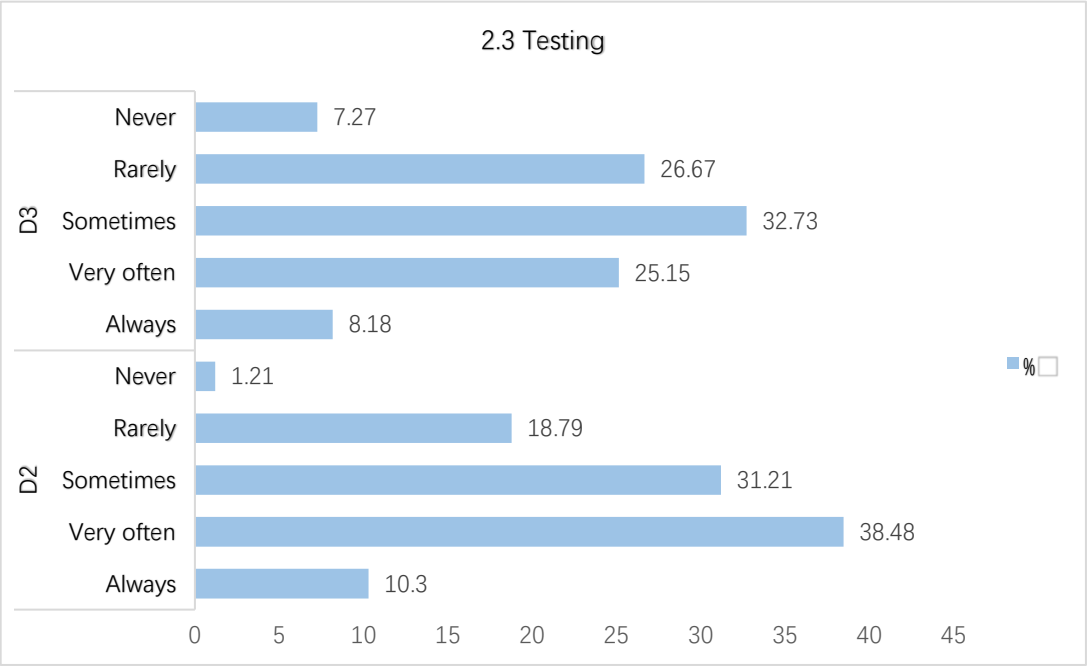

Figure 15. Participants' Responses to e-learning practice named Testing (*N=330*)

4) Analyzing and Synthesizing

The fourth subsection included two multiple-selection questions, which are Questions E1 and E3. For Question E1, participants chose two out of five possible answers about how they adapted learning styles to different learners by employing certain methods. Participants' answers showed that 60% of them most often adapted online student responses to their teachers, and 50% used online English learning resources (see Figure 16).

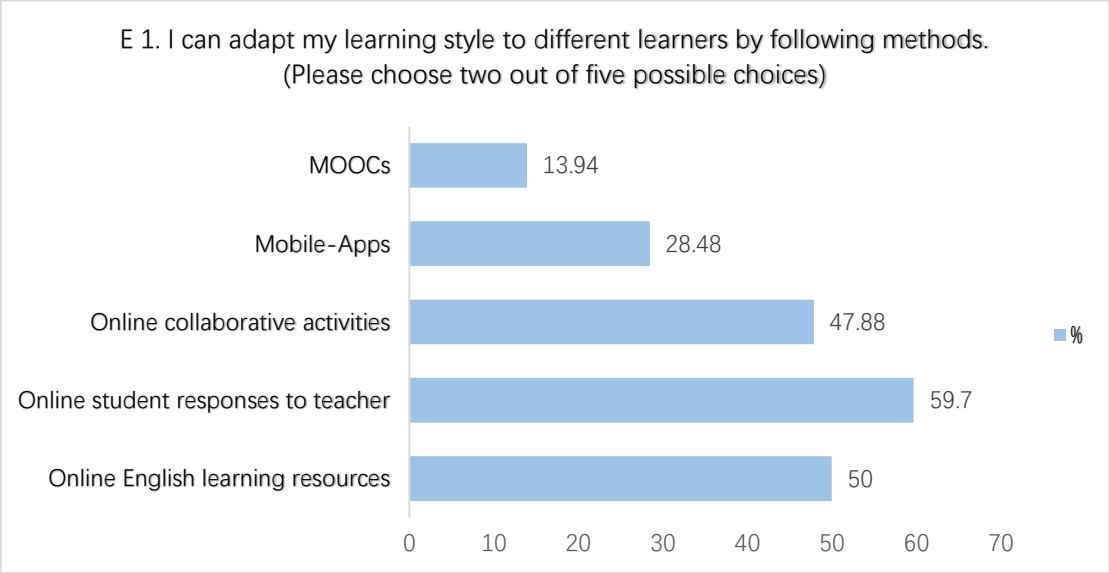

Figure 16. Participants' Responses to Question E1 (*N=330*)

The multiple-choice question E2 was as follows:

- ***E2. I think that English learning skills development with e-learning practices can be as effective as face-to-face lessons.***

Most participants had a neutral attitude towards whether they felt the development of English learning skills by using e-learning practices is as effective as using face-to-face lessons (see Figure 17).

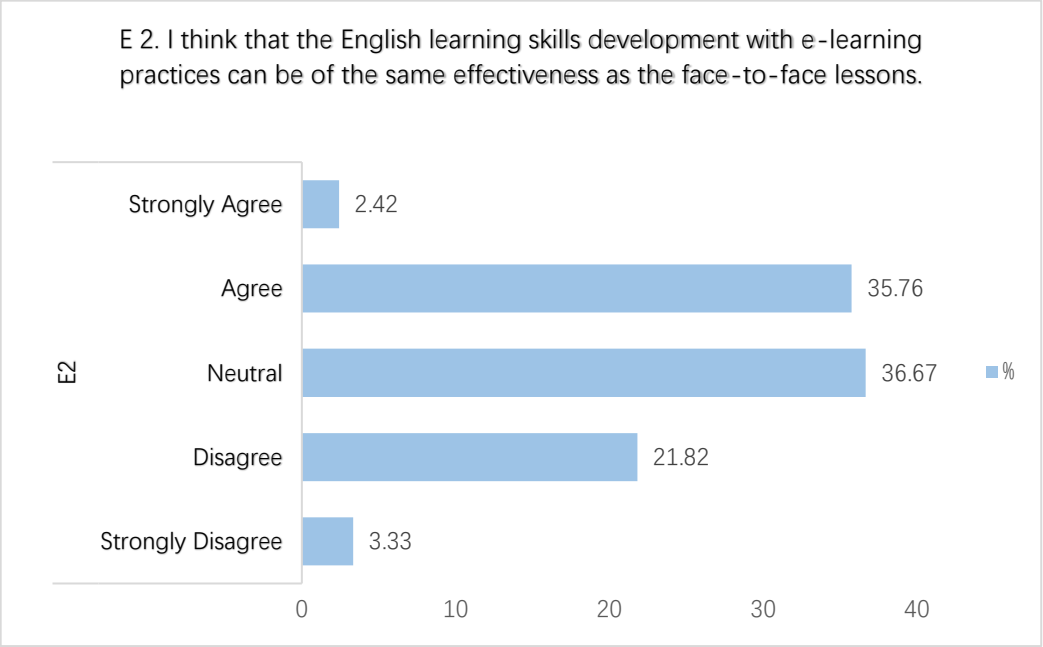

Figure 17. Participants' Responses to Question E2 (*N=330*)

For Question E3, when participants were asked about what options they utilized as technical components of their implementation of e-learning practices in their training, they responded that they most often watched videos of another teacher's teaching, and their second most used technical component was podcasting (see Figure 18).

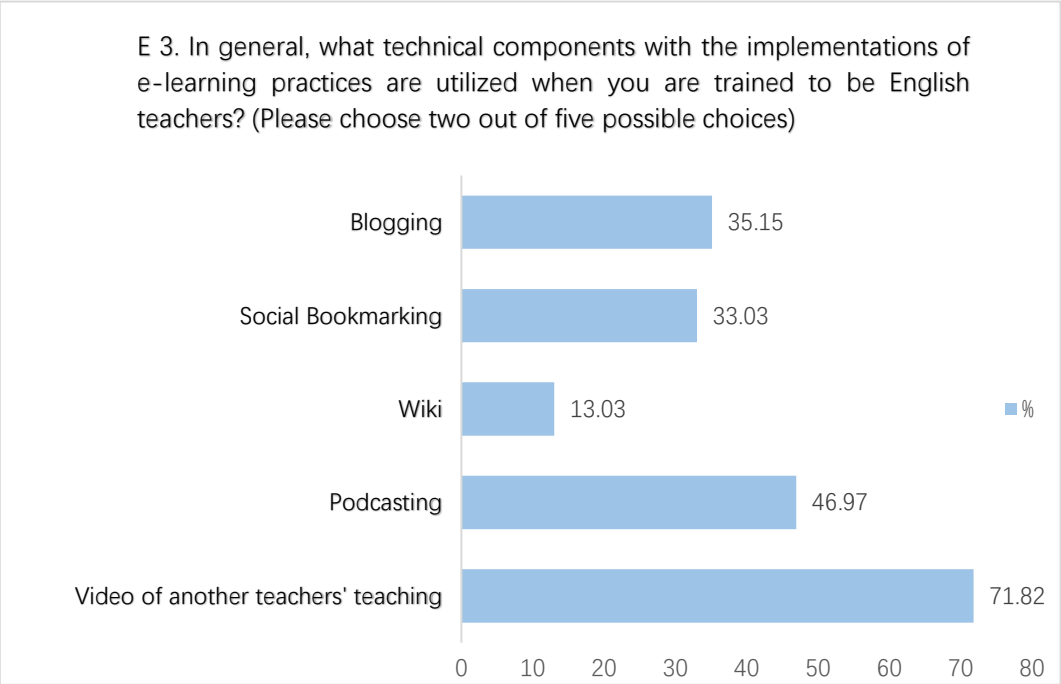

Figure 18. Participants' Responses to Question E3 (*N=330*)

5) Collaborating and Discussing

The fifth subsection included three multiple choice questions (Questions F1, F2, and F3) as follows (see Figure 19):

- ***F1. I know how to evaluate learners' performance by integrating e-learning practices for English learning.***
- ***F2. I can discuss English subject matter like an expert who specialized in English pre-service teacher education in e-learning practices.***
- ***F3. I have had sufficient opportunities to work with different technologies for e-learning practices in English learning and teaching.***

In Figure 19, roughly half of the participants said they sometimes knew how to evaluate learners' performance by integrating e-learning practices for English learning. The participants reported that they did not often discuss English subject matter like an expert who specialized in e-learning practices for English preservice teacher education. More than 40% of participants agreed that they had had sufficient opportunities to work with different technologies for their e-learning practice in English learning and teaching.

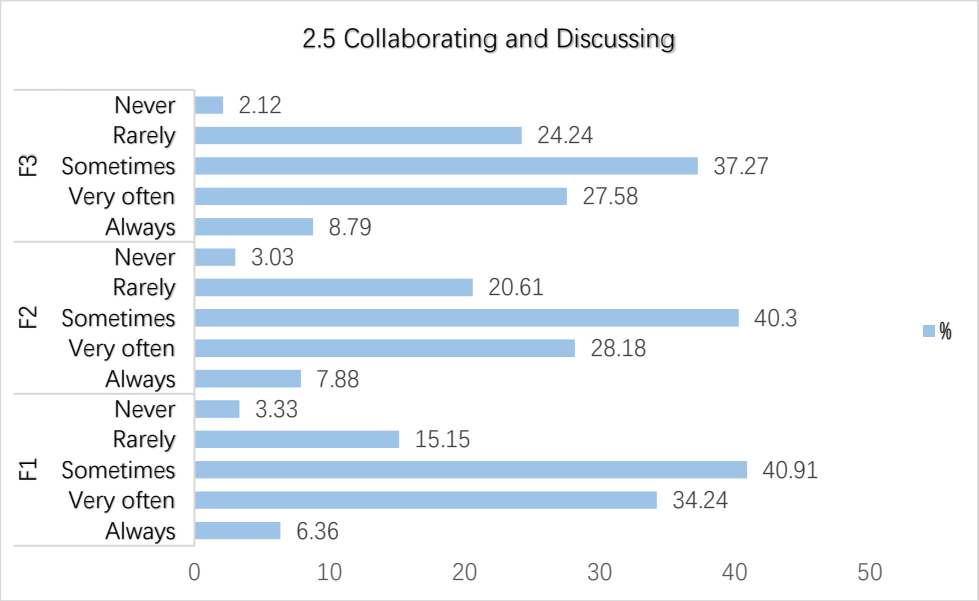

Figure 19. Participants' Responses about e-learning practice named collaborating and discussing (*N*=330)

6) Understanding and Applying

The sixth subsection included three multiple choice questions (Questions G1, G2, and G3):

- ***G1. I can understand my English learning with e-learning practices based upon***

what teachers currently teach.

- ***G2. I have numerous methods to develop my understanding of e-learning practices in English pre-service teacher education.***
- ***G3. I have the technical skills and I need to use technology to gain more experience for teaching English Language.***

Thirty-five percent of participants said they very often could understand their English language learning with e-learning practices based upon what the teachers were currently teaching. More than 40% of participants agreed that they had numerous methods with which to develop their understanding of e-learning practices in English preservice teacher education. More than 50% of participants believed they had the necessary technical skills and that they needed to use technology to gain more experience for teaching the English language (see Figure 20).

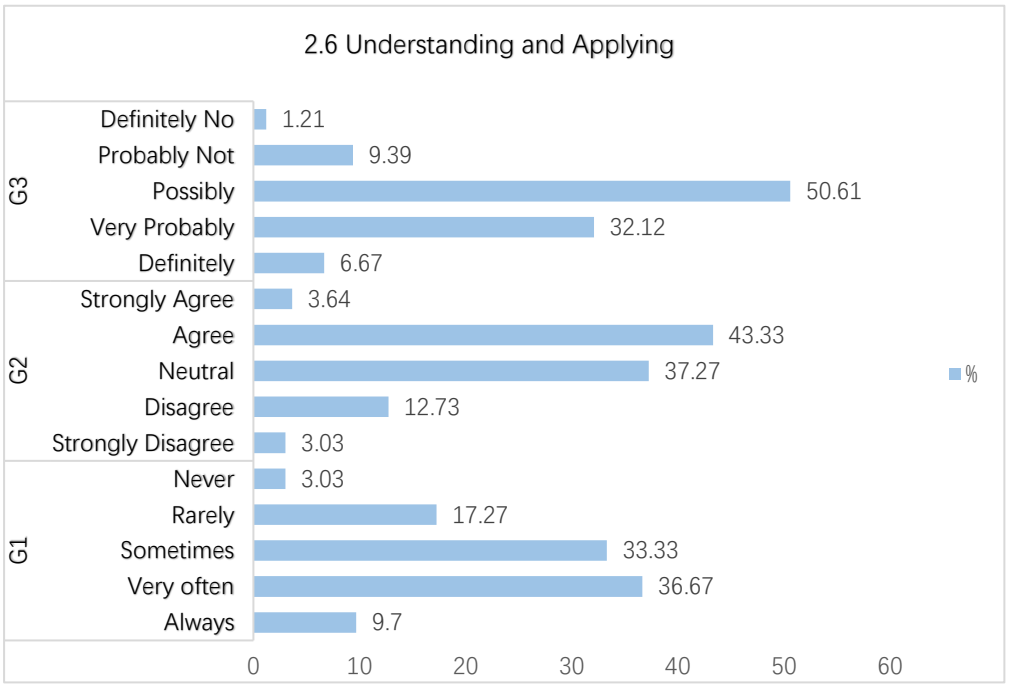

Figure 20. Participants' Responses to e-learning practice named Understanding and Applying *(N=330)*

7) Creating and Promoting

The seventh subsection included two multiple choice questions (Questions H1 and H3) and one multiple selection question (Question H2). When asked what the two most difficult parts of creating a unit of study that relied upon e-learning practices were, well over 50% of participants had difficulty with "the impacts that would arise if e-learning technologies could not be handled properly in instruction," and 46% had difficulty with "how to customize e-learning-infused instructional materials with collected resources" (see Figure 21).

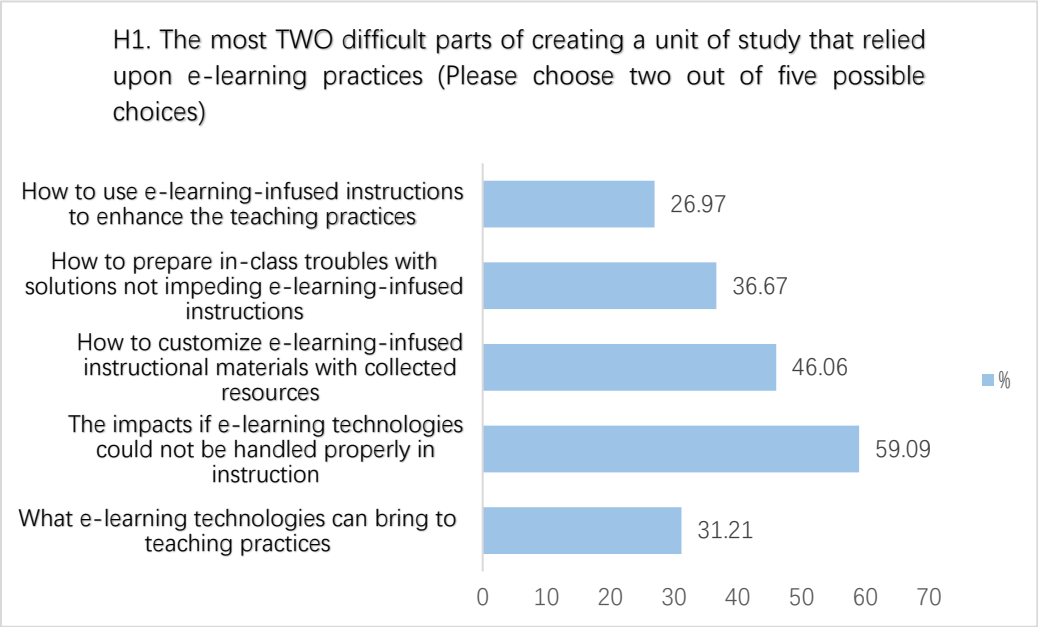

Figure 21. Participants' Responses to Question H1 (*N*=330)

The majority of participants devoted significant effort to their e-learning practices in English teaching and learning (see Figure 25).

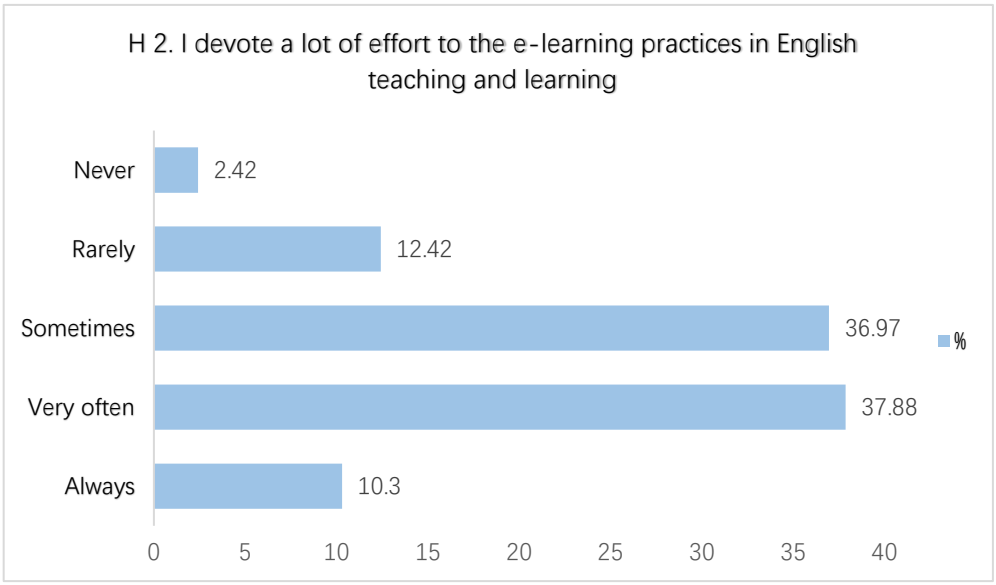

Figure 22. Participants' Responses to Question H2 (*N*=330)

At the end of part two of the questionnaire, participants stated what their single most

important learning goal at the time for their e-learning practice was. Based on the options the participants chose, their single most important learning goal in their e-learning practice was to improve their learning outcomes (see Figure 23).

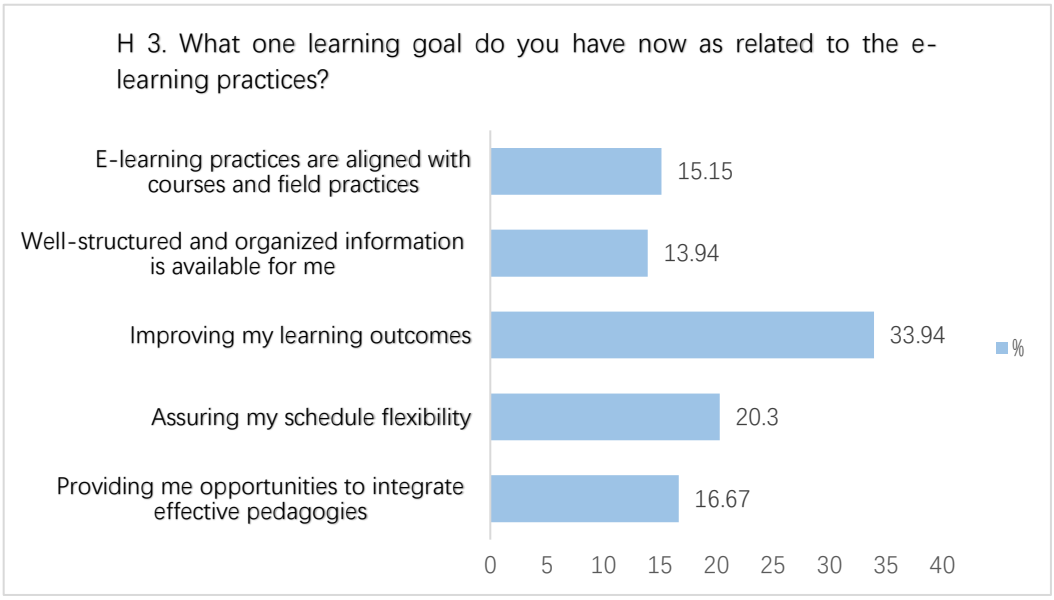

Figure 23. Participants' Responses to Question H3 (*N*=330)

5.2.3 Part Three of the Questionnaire: Self-modeling E-learning Practices in Daily Life

The four questions that comprised part three of the questionnaire examined how participants self-modeled their e-learning practices in their daily life:

- ***J1. I recap my planned e-learning practices to make myself more familiar with these practices in my daily life.***
- ***J2. I believe that implementation of e-learning practices makes me more excited and satisfied with my lectures.***

- ***J3. I believe that implementation of e-learning practices improves my sense of accomplishment.***
- ***J4. The implementation of e-learning practices in English language teacher education make designing teaching content easier.***

Participants expressed positive attitudes toward self-modeling e-learning practices in their daily life. In their specific answers (see Figure 24), the participants reported sometimes recapping their planned e-learning practices to make themselves more familiar with those practices in their daily life. Over 40% of participants believed that implementing e-learning practices made them more excited about and satisfied with their own lectures. Nearly 55% of participants agreed that implementation of e-learning practices improved their sense of accomplishment. Meanwhile, over 50% of participants agreed that implementing e-learning practices in their English language teacher education made it easier for them to design their teaching content.

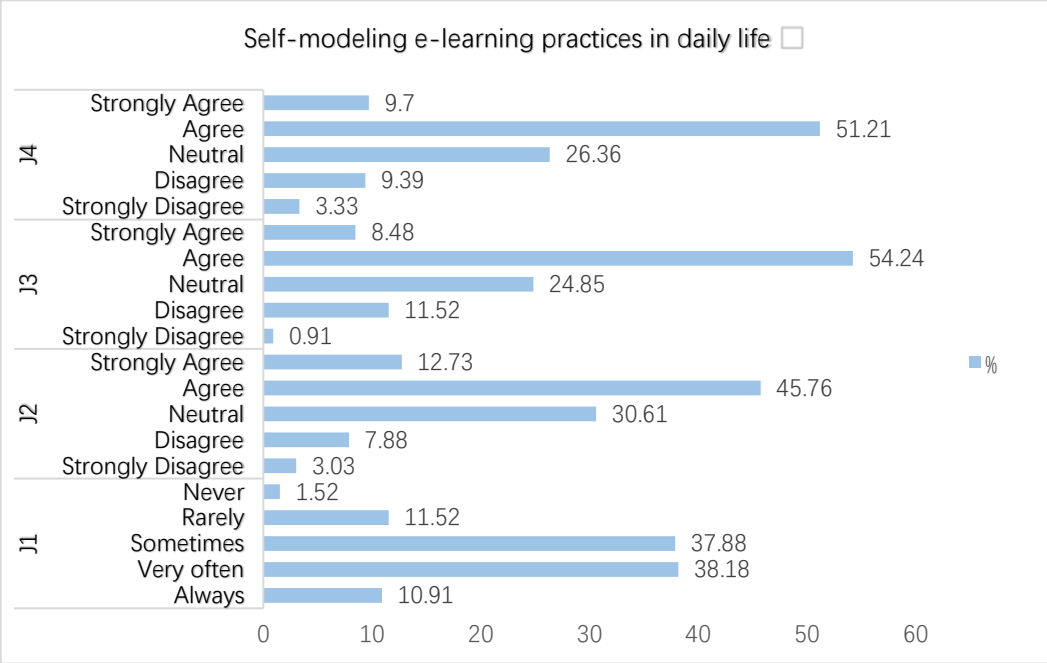

Figure 24. Participants' Responses to implementations of e-learning practice in their daily life (*N*=330)

5.2.4 Part Four of the Questionnaire: Implementation of E-learning Practices During Field Experience

In the fourth part of the questionnaire, participants mainly provided statements about their experiences in field practice in schools. This part of the questionnaire contained seven subsections, since there are seven types of e-learning practices (Holmes & Gardner, 2006). Each subsection contained three questions, mainly focusing on participants' technological pedagogical knowledge (TPK), pedagogical content knowledge (PCK) and technological content knowledge (TCK) which they gained from the implementation of e-learning practices in preservice English teacher education in their field practice based on the TPACK framework (See Chapter 4). Among those 21 questions, one was a multiple selection question and the others were multiple choice.

1) Searching and Selecting

The first subsection contained two multiple choice questions (Questions K1 and K2):

- ***K1. I do not know how to select effective teaching pedagogies to guide students' thinking and learning in English.***
- ***K2. I cannot select educational technologies to use in my classroom that enhance what I teach and how I teach English and what students learn.***

Almost 33% of participants reported very often knowing how to select effective teaching pedagogies to guide students' thinking and learning in English (Question K1). Over 50% of participants agreed that they could select educational technologies to use in their classroom that would enhance what they taught and how they taught English and what their students learned (Question K2; see Figure 25).

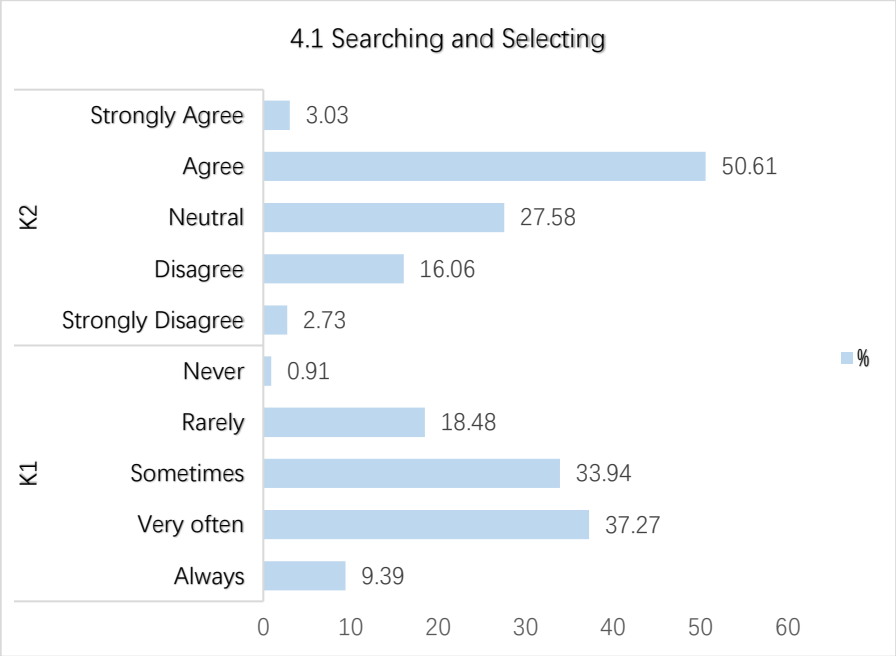

Figure 25. Participants' Responses to e-learning practice named searching and selecting in their field experience (*N*=330)

Question K3 is a multiple selection question and when asked what three e-learning practices they most often used to help students learn English, participants indicated that they used collaborating and discussing, understanding and applying, and analyzing and synthesizing (see Figure 26).

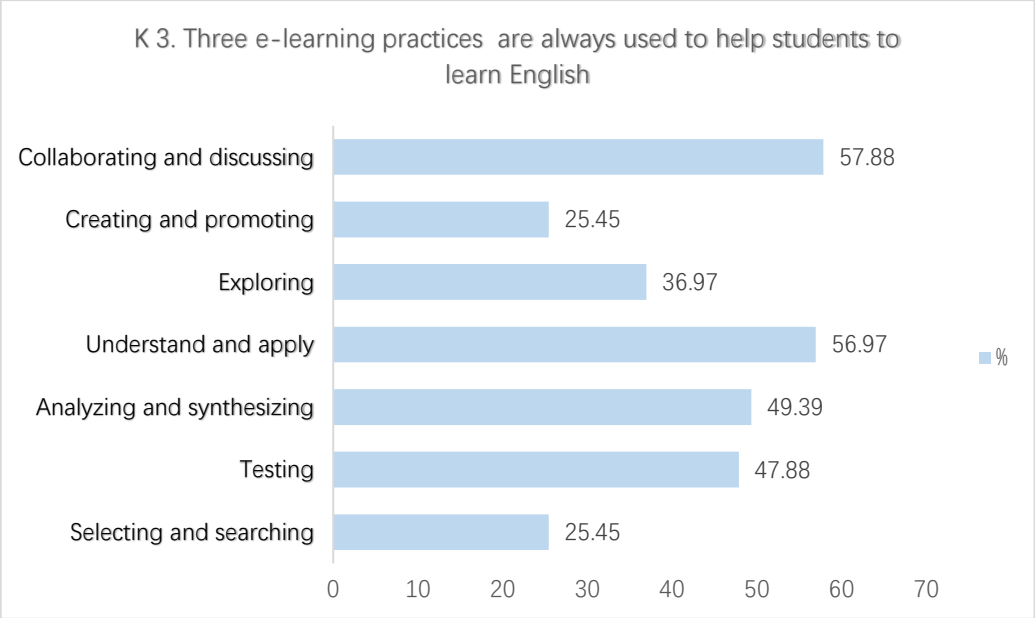

Figure 26. Participants' Responses to Question K3 (*N=330*)

2) Exploring

The second subsection contained three multiple choice questions (Questions L1, L2, and L3):

- ***L1. E-learning practices make it possible for different kinds of learning styles to be catered for in my field practice.***
- ***L2. I cannot use strategies that combine content, technologies, and teaching approaches that I learnt about in my classroom.***
- ***L3. E-learning practices allow me to interact with students in real time.***

In their answers, almost 55% of participants agreed that e-learning practices made different kinds of teaching and learning styles possible in their field practices. Less than

40% of participants could sometimes use strategies that they learned about in their classroom and that combined content, technologies, and teaching approaches. More than 36% of participants agreed that e-learning practices very often allowed them to interact with their students in real time (see Figure 27).

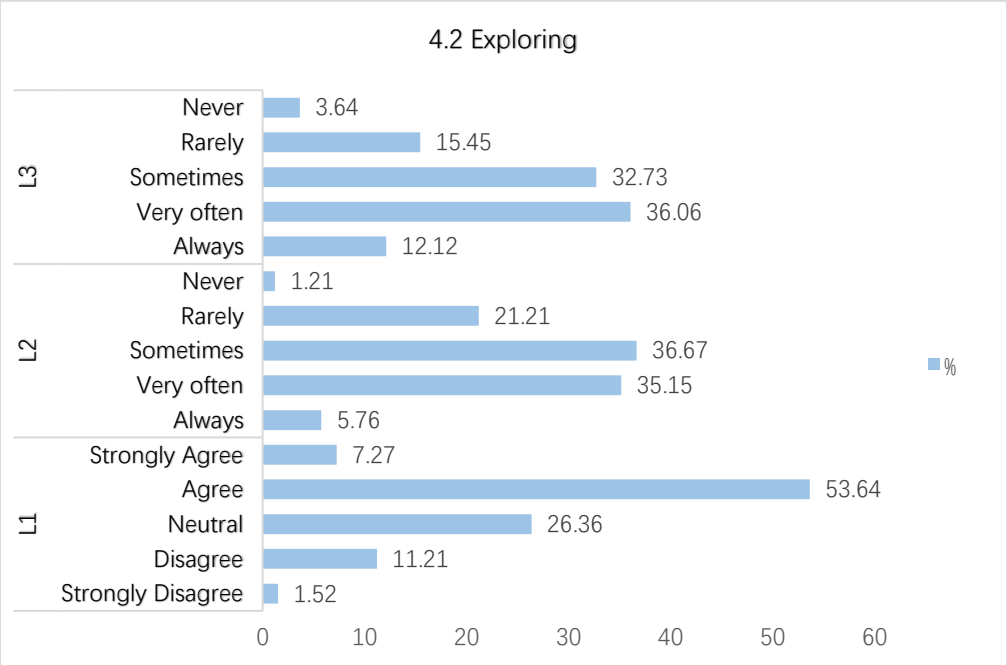

Figure 27. Participants' Responses e-learning practice named exploring in their field experience (*N=330*)

3) Testing

The third subsection contained three multiple choice questions (Questions M1, M2, and M3):

- ***M1. My online work is generally applicable and/or relevant to the other work I was completing for this class.***
- ***M2. Compared to activities that you have experienced in training, there are***

differences in your field experience depending on whether you use e-learning practices or instead show lots of pictures to students regarding the content you teach.

- ***M3. E-learning practices beneficially bridges pedagogical theories and teaching practices to improve my teaching skills.***

Over 55% of participants agreed that their online work was generally applicable and/or relevant to the other work they were completing for their class. When comparing their field experience with the activities that they had experienced in training, 36% of participants stated that there were differences in their field experience depending on whether they used e-learning practices or instead just showed a lot of pictures to the students. A total of 63% of participants felt that the content they taught via e-learning practices beneficially bridged pedagogical theories and teaching practices to improve their teaching skills (see Figure 28).

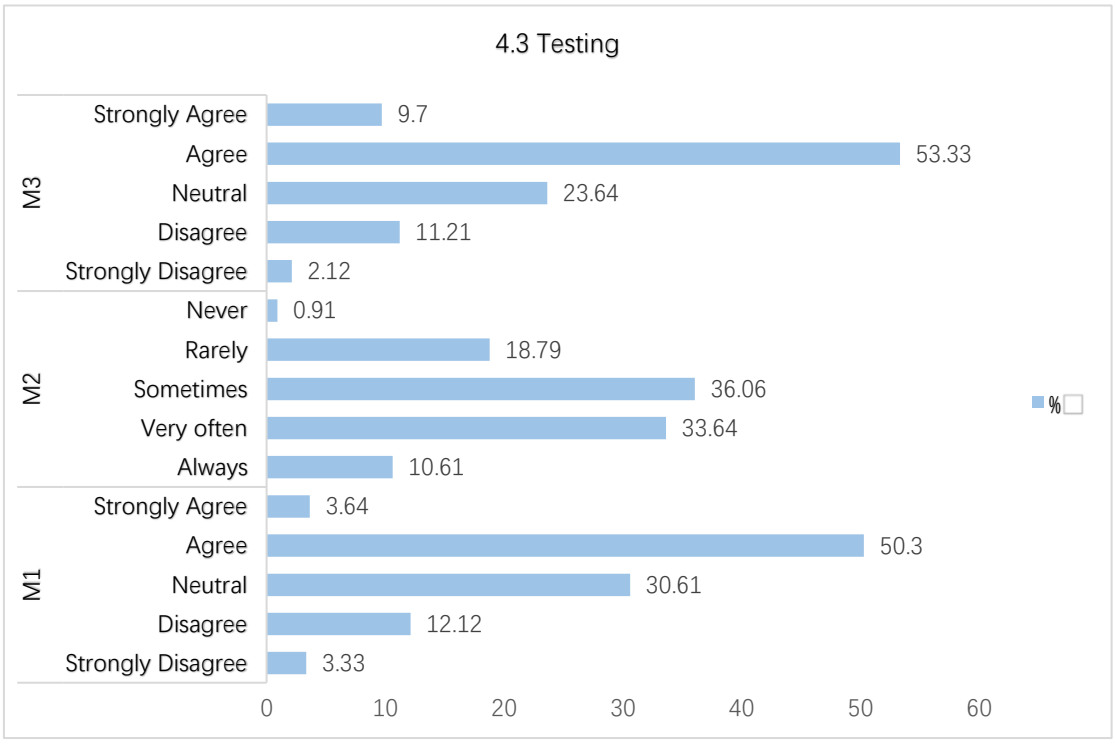

Figure 28.Participants' Responses about e-learning practice named testing in their field experience (*N=330*)

4) Analyzing and Synthesizing

The fourth subsection contained one multiple selection question (Question N1). In this question, we utilize an "Other (indicate)" choice to allow respondents to give a response not included in the inquiry's answer list since we cannot conceivably incorporate a totally comprehensive rundown of reactions for this study. The types of e-portfolio platforms that participants most often used were Blogger and Mahara (see Figure 29).

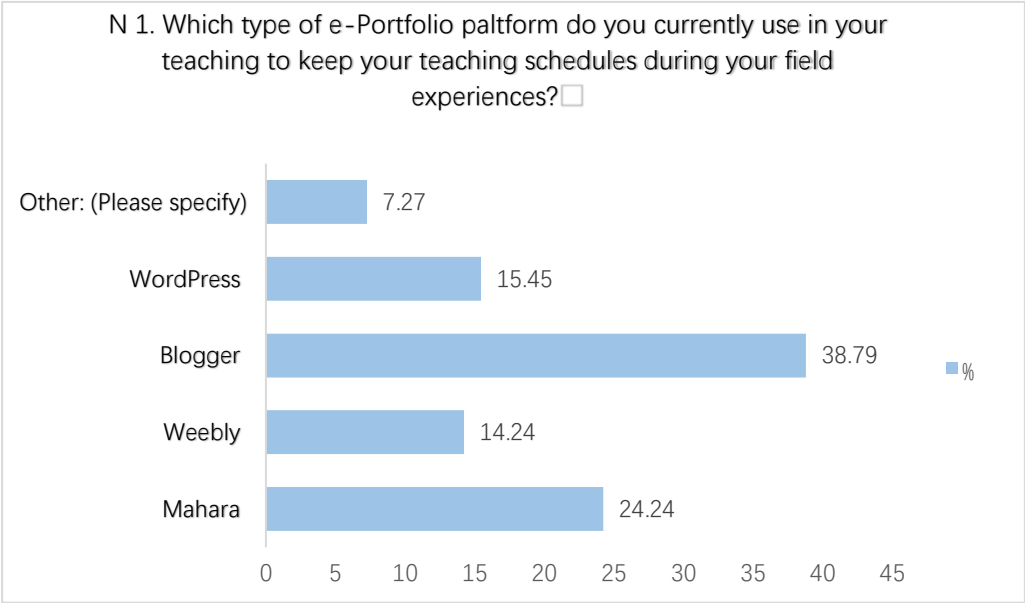

Figure 29. Participants' Responses to the types of e-portfolio platform that the participants most often used (*N=330*)

The two multiple choice questions (Questions N2 and N3) were as follows:

- ***N2. During field experience, e-learning practices accommodate the preference of students and teachers.***
- ***N3. To reduce my anxiety, schools provide technology support for me for teaching and learning English before the start of the field experience.***

Over 33% of participants agreed that during their field experience, e-learning practices accommodated the preferences of students and teachers. Almost 38% of participants indicated that to reduce their anxiety, schools sometimes provided them technology support for teaching and learning English before the start of the field experience (see Figure 30).

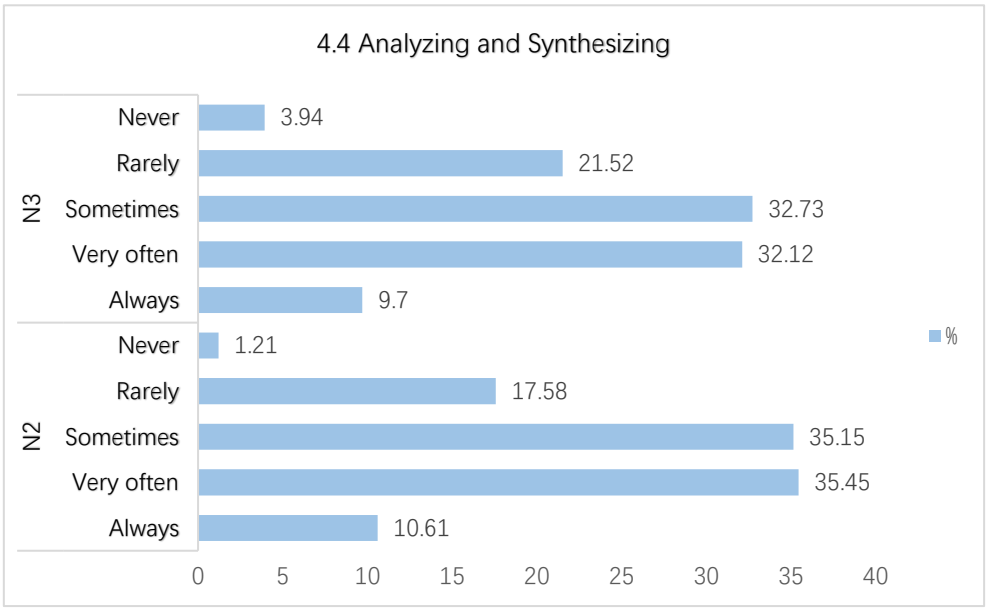

Figure 30. Participants' Responses to e-learning practice named analyzing and synthesizing (*N=330*)

5) Collaborating and Discussing

The fifth subsection had three multiple choice questions (Questions R1, R2, and R3):

- ***R1. Online English teaching and learning discussions are generally intellectually stimulating and inspiring for my students.***
- ***R2. I can provide leadership in helping others to coordinate the use of content, technologies, and teaching approaches during field practice.***
- ***R3. I design activities to let students create digital narratives by using e-learning practices on the topic of learning English in collaboration with their parents.***

Almost 37% of participants agreed that online English teaching and learning

discussions were at least sometimes generally intellectually stimulating and inspiring for their students. Over 47% of participants agreed that during their field practice they could provide leadership in helping others coordinate their use of content, technologies, and teaching approaches. However, more than 30% of participants only rarely designed activities to let students create digital narratives by using e-learning practices on the topic of learning English in collaboration with their parents (see Figure 31).

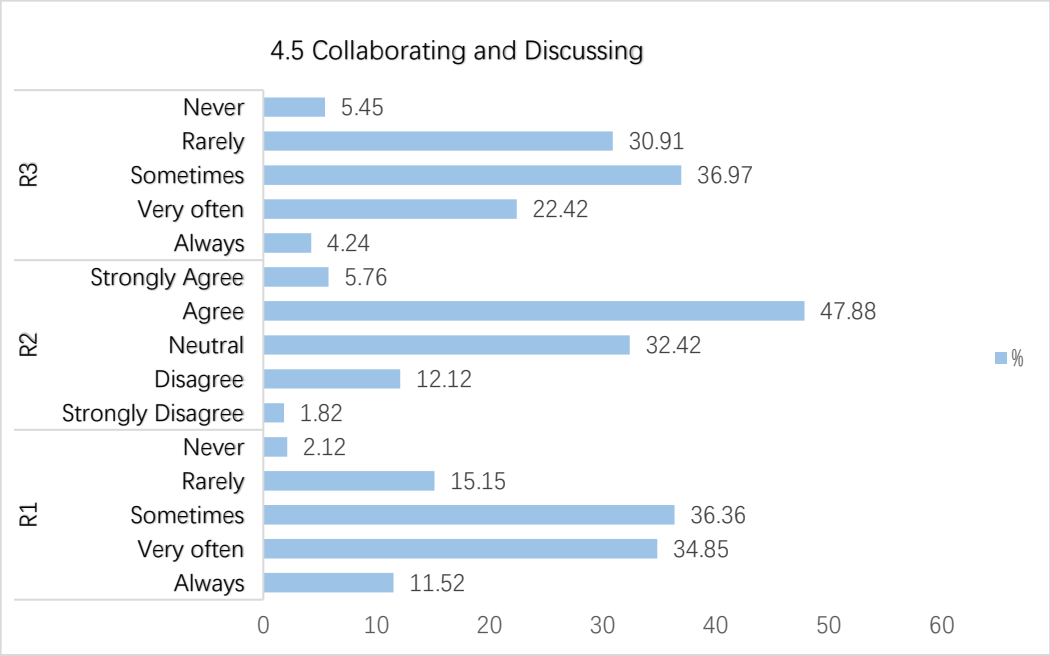

Figure 31. Participants' Responses about e-learning practices named collaborate and discussing (*N=330*)

6) Understanding and Applying

The sixth subsection contained three multiple choice questions (Questions S1, S2, and S3):

- ***S1. The time and effort I put into the e-learning practices of the course is generally worthwhile, given how much it assisted my professional development.***
- ***S2. I know about technologies that I can use for understanding and teaching English with e-learning practices.***
- ***S3. I can teach English that appropriately combines with my understanding of curriculum studies, technologies and teaching approaches.***

Because of how much assistance they gained in their professional development as a result of the time and effort the participants put into the courses' e-learning practices, over 50% agreed that their efforts were generally worthwhile. More than 55% of participants knew about technologies that they could use for understanding and teaching English with e-learning practices. Approximately 54% of participants agreed that they could teach English that appropriately combined with their understanding of curriculum studies, technologies, and teaching approaches (see Figure 32).

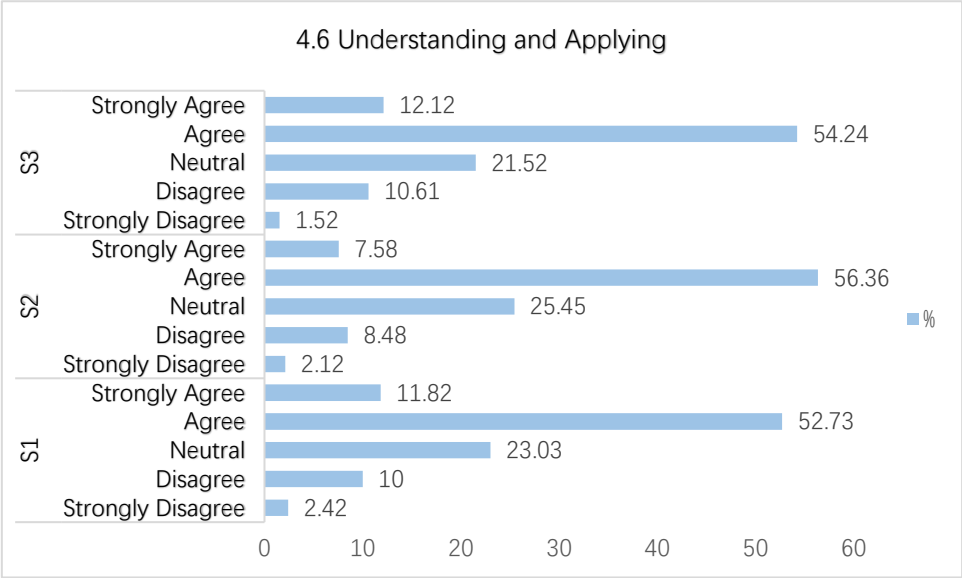

Figure 32. Participants' Responses about e-learning named understanding and applying (*N=330*)

7) Creating and Promoting

The seventh subsection had three multiple choice questions (Questions U1, U2, and U3):

- ***U1. My professional development as an educator has benefited directly from online interaction through e-learning practices.***
- ***U2. During field practice, e-learning practices ease the process of my teaching.***
- ***U3. There are differences in understanding the functions of e-learning practices compared with experiencing activities for teaching English.***

Over 40% of participants agreed that their professional development as educators had benefited directly from online interaction that occurred through e-learning practices.

Roughly, 44% of participants agreed that e-learning practices during their field practice eased the process of their teaching. In the final question, participants indicated their opinions about how large the difference was between understanding the functions of e-learning practices and experiencing activities for teaching English. Over 40% of participants thought that there were greater differences in understanding the functions of e-learning practices than there were in experiencing activities for teaching English. On the other hand, over 30% of participants agreed that the differences in understanding the functions of e-learning practices were actually lower than those in experiencing activities for teaching English (see Figure 33).

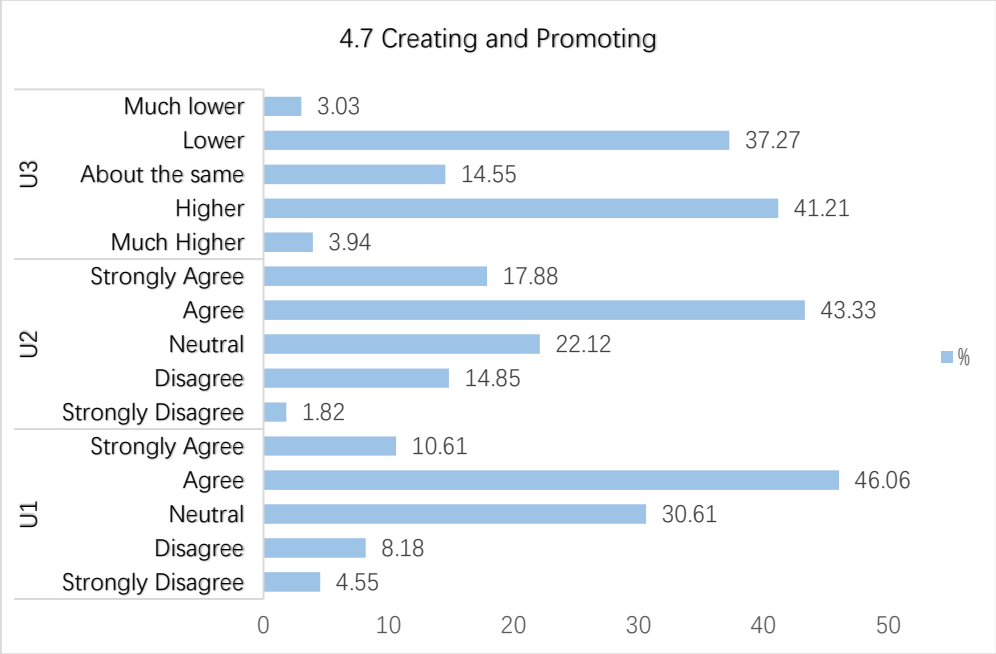

Figure 33. Participants' Responses about e-learning practice named creating and promoting (*N=330*)

5.3 Summary of the First and Second Stages of Analysis

In summary, there were 330 participants in total, 165 of whom were studying in Hong

Kong and 165 of whom were studying in mainland China. Among all participants, over half had attended workshops or compulsory lessons about e-learning practices for teaching English. More than 200 participants had had no experience with teaching English in schools or a tutoring center. However, roughly 54% of participants had had field practice in some subject or other. After the second stage of analysis, we make the first attempt to find the answer to research question 1 (*RQ1)* and research question 2 (*RQ2).*

Research Question 1: What e-learning practices are implemented in English language learning in preservice teacher education courses in Hong Kong and mainland China?

During their in-class training, all participants in Hong Kong and mainland China sometimes implemented the e-learning practices of *Searching and Selecting* and *Collaborating and Discussing*. All participants in Hong Kong and the mainland China very often implemented the e-learning practices of *Exploring, Testing,* and *Understanding and Applying.* This is consistent with the findings of research conducted by Chai, Koh and Tsai (2010) and Smith and Greene (2013). Meanwhile, all participants in Hong Kong and mainland China had a neutral attitude toward the e-learning practice of *Analyzing and Synthesizing*. In reference to the e-learning practice of *Creating and Promoting,* all participants in Hong Kong and mainland China agreed that there were two difficult parts to creating a unit of study that relied on e-learning practices: (1) considering the impacts that could occur if e-learning technologies could not be handled

properly in instruction, and (2) deciding how to customize e-learning-infused instructional materials with collected resources.

The learning goals of all participants in Hong Kong and the mainland were related to the e-learning practice of *improving their learning outcomes.* All participants in Hong Kong and mainland China always used two types of technological tools for English learning: *Videos* and *Google and its related functions.* The two methods combined with e-learning practice that the teachers used most often were the *grammar-translation method* and the *communicative method.* All participants in Hong Kong and mainland China adapted their learning style to different learners by using *online student responses to the teacher* and *online English learning resources.* During their training, the teachers always used *Podcasting* and *Videos of another teacher's teaching.*

Research question 2: What e-learning practices do preservice teachers implement in English language learning during their field experiences in schools in Hong Kong and mainland China? Why do they choose these e-learning practices?

- ***What e-learning practices do preservice teachers implement in English language learning during their field experiences in schools in Hong Kong and mainland China?***

During the preservice English teachers' field practice, all participants in Hong Kong and mainland China sometimes implemented the e-learning practices of *Analyzing and Synthesizing* and *Collaborating and Discussing*. All participants in Hong Kong and mainland China very often implemented the e-learning practices of *Searching and*

Selecting, Exploring, Testing, Understanding and Applying and *Creating and Promoting*. Finally, all participants in Hong Kong and mainland China always used the online e-Portfolio systems *Blogger* and *Mahara*. When discussing the differences in understanding the functions of e-learning practices compared with those in experiencing activities for teaching English, all participants in Hong Kong and mainland China opted for the response "*Greater differences"* with regards to understanding the functions of e-learning practices, compared with the differences in experiencing activities for teaching English.

In summary, according to the first stage of analysis, the first research question and the first sub-question of the second research question have been answered. The next three stages of analysis explore in depth participants' answers to the other sub-question of the second research question: *Why do preservice teachers choose these e-learning practices in English language learning during their field experiences in schools in Hong Kong and mainland China?* and the third research question: *What are the similarities and differences between Hong Kong and mainland China in regard to e-learning practices in English language preservice teacher education?*

Chapter 6: Finding the Relationship among Four Factors in Three Scenarios

In the third stage of analysis, the Chi-Square (χ^2) test was used to find the relationship among four factors in three different scenarios. The Chi-Square (χ^2) test is commonly used to assess whether two categorical factors are related. In this study, it was used to test whether participants' options for implementing e-learning practice in three scenarios is influenced by the four independent factors listed hereunder. A statistically significant chi-square indicates that the option profile of "frequent" differs from the profile of "rare." In this study, the four independent factors are:

1) participants' gender (Question A1), which has two options: male and female.

2) participants' previous attendance in any workshops or compulsory lessons about e-learning practices for teaching English before they enrolled at university (Question A4), which has two options: participants have enrolled, and participants have not enrolled.

3) participants' previous teaching experience in English in schools or tutor centers (Question A5), which has two options: yes, participants have that experience, and no, participants do not have that experience.

4) participants' previous field practice in any subject (Question A6), which has two options: yes, participants have attended field practice in some subject, and no, participants have not attended field practice in some subject.

In the following analysis stage, in order to concisely illustrate the findings, the first

factor is labeled Participants' Gender (Question A1), the second factor is labeled Pre-university Training Experience (Question A4), the third factor is labeled Pre-university Teaching English Experience (Question A5) and the fourth factor is labeled Pre-university Field Practice in Any Subject (Question A6), (see Figure 34).

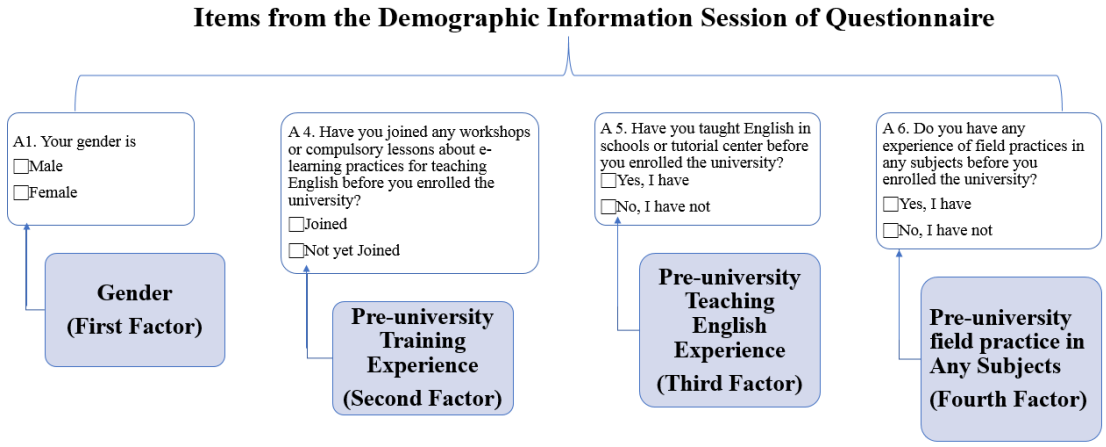

Figure 34. Items from Part 1 of the Questionnaire

We investigated how these four factors influence implementation of e-learning in preservice English teacher education in three scenarios, which are:

a) during their training at university (Questions in part 2 of questionnaire)

b) improvements in their daily life (Questions in part 3 of questionnaire)

c) during their field practice (Questions in part 4 of questionnaire)

Responses can be rated or ranked on an ordinal scale, but the distance between answers cannot be measured. Thus, on a Likert frequency response scale, the distinctions between "always," "often," and "sometimes" are not necessarily equivalent. In other words, one cannot suppose that even though the figures allocated to those answers are

not equal the distinction between answers is equidistant (Sullivan & Artino, 2013). For that reason, in this study, the five-point Likert scale is adopted in the questionnaire (See Figure 35). Before analyzing all collected data, we use a range of numerical values that could range from 1-5 to give the weight of the responses. The summary result of five-point Likert Scale is gauging up to 5, then the name and number matches. Therefore, there are clarified statements for all items with the five-point Likert scale in the questionnaire. The detailed summary of the total respondents is 330 and the scale range is listed in Figure 36. The level of each item is determined by the following formula: (highest point in Likert scale − lowest point in Likert scale)/the number of categories used. Then, rather than focusing on the individual items, it would be better to calculate the mean scale score.

Likert Scales	Items in Questionnaire
1= Strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= Strongly Agree	Question C2, Question E2, Question G2, Question J2, Question J3, Question J4, Question K2, Question L1, Question M1, Question M3, Question R2, Question S1, Question S2, Question S3, Question U1, Question U2 (16 questions in total)
1=Never 2= Rarely 3= Sometimes 4= Very often 5= Always	Question B1, Question B2, Question B3, Question C1, Question D2, Question D3, Question F1, Question F2, Question F3, Question G1, Question J1, Question K1, Question M2, Question H2, Question L2, Question L3, Question N2, Question N3, Question R1, Question R3 (20 questions in total)
1= Definitely No 2= Probably Not 3= Possibly 4= Very Probably 5= Definitely	Question G3
1= Much lower 2= Lower 3= About the same 4= Higher 5= Much Higher	Question U3
1=Providing me opportunities to integrate effective pedagogies 2= Assuring my schedule flexibility 3= Improving my learning outcomes 4=Well-structured and organize information is available for me 5=E-learning practices are aligned with courses and field practices	Question H3
1=Other: (Please specify) 2=WordPress 3= Blogger 4= Weebly 5=Mahara	Question N1

Figure 35. 5-point ordinal scale used by respondents to rate the degree of the options

In the second part of the questionnaire, participants provided information about their in-class training at university. There were seven subsections in part two of the questionnaire, and in each subsection, there were three questions, resulting in 21 questions in total. Among those 21 questions, five were multiple selection (Question C1, Question D1, Question E1, Question E3 and Question H1) and the remaining 16 were multiple choice. In the third part of the questionnaire, there were four multiple choice. In the final part of the questionnaire, there were seven subsections in part two of the questionnaire, and in each subsection, there were three questions, resulting in 21 questions in total. Among those 21 questions, one (Question K3) was multiple selection and the remaining 20 were multiple choice. Participants mainly provided statements about their implementation of e-learning practices during their field experience. Frequencies can be used to produce summary statistics and they are measures of central tendency for four different factors in three scenarios (See Table 17, Table 18 and Table 19).

Table 17. Part two of the Questionnaire

Part 2 In-Class Training During the University			
2.1 Searching and Selecting	B 1. I select some proper e-learning practices from wide range of e-learning practices for English language teaching and learning.	B 2. Teachers provide some video records of successful cases about teaching English by the implementations of e-learning practices to formulate English pedagogies.	B 3. I know how to solve my own technical problems when I complete the e-learning practices in English.
2.2 Exploring	C 1. I do not know how to organize and maintain classroom managements by integrating the e-learning practices for English learning.	C 2. I learn more about English teaching by viewing my classmates' video clips.	C 3. Which one of following technological tools do you always use for English language learning? (Please choose TWO out of five possible choices)*
2.3 Testing	D 1. I find that English teachers use listed methods to combine with e-learning practices in the training. (Please choose TWO out of five possible choices)*	D 2. I participate the training courses most centered-around English subject matter.	D 3. I can use website Editors to test and modify the web pages about English teaching and learning.
2.4 Analyzing and Synthesizing	E 1. I can adapt my learning style to different learners by following methods. (Please choose TWO out of five possible choices) *	E 2. I think that the English learning skills development with e-learning practices can be of the same effectiveness as the face-to-face lessons.	E 3. In general, what technical components with the implementations of e-learning practices are utilized when you are trained to be English teachers? (Please choose TWO out of five possible choices)*
2.5 Collaborating and Discussing	F 1. I know how to evaluate learners' performance by integrating the e-learning practices for English learning.	F 2. I can discuss the English subject matter like an expert who specialized in English pre-service teacher education in e-learning practices.	F 3. I have had sufficient opportunities to work with different technologies for e-learning practices in English learning and teaching.
2.6 Understanding and Applying	G 1. I can understand my English learning with e-learning practices based upon what teachers currently teach.	G 2. I have numerous methods to develop my understanding of e-learning practices in English pre-service teacher education.	G 3. I have the technical skills and I need to use technology for gaining more experience for teaching English Language.
2.7 Creating and Promoting	H 1. What was the most TWO difficult parts of creating a unit of study that relied upon e-learning practices? (Please choose TWO out of five possible choices) *	H 2. I devote a lot of effort to the e-learning practices in English teaching and learning.	H 3. What learning goals do you have now as related to the e-learning practices?

Table 18. Part three of the Questionnaire

Part 3. Self-modeling E-learning Practices in the Daily Life
J 1. I recap my planned e-learning practices to make myself more familiar with these practices in my daily life.
J 2. I believe that implementations of e-learning practices make myself more excited and satisfied with my lecture.
J 3. I believe that implementations of e-learning practices improve my senses of accomplishment.
J 4. The implementations of e-learning practices in English language teacher education make myself more easily design the teaching content.

Table 19. Part Four of the Questionnaire

Part 4 Implementations of E-learning practices During the Field Experience			
4.1 Searching and Selecting	K 1. I do not feel difficult to select effective teaching pedagogies to guide students thinking and learning in English.	K 2. I cannot select educational technologies to use in my classroom that enhance what and how I teach English and what student learn.	K 3. What different e-learning practices you used to help your students to learn English. (Please choose THREE out of seven possible choices)*
4.2 Exploring	L 1. E-learning practices make possible different kind of learning styles to be catered in my field practices.	L 2. I cannot use strategies that combine content, technologies and teaching approaches that I learnt about in my classroom.	L 3. E-learning practices allow me to interact with students in real time.
4.3 Testing	M 1. My online work is generally applicable and/or relevant to the other work I was completing for this class.	M 2. Comparing to the activities that you have experienced in training, there are differences in your field experience if yourself do not use the e-learning practices, but to show lot of pictures to students regarding the content you teach.	M 3. E-learning practices beneficially bridges pedagogical theories and teaching practices to improve my teaching skills.
4.4 Analyzing and Synthesizing	N 1. Which type of e-Portfolio platform do you currently use in your teaching to keep your teaching schedules during your field experiences?	N 2. During the field experiences, e-learning practices accommodate the preference of students and teachers.	N 3. To reduce my anxiety, schools provide technology support for me about teaching and learning English before the start of the field experience.
4.5 Collaborating and Discussing	R 1. Online English teaching and learning discussions are generally intellectually stimulating and inspiring for my student.	R 2. I can provide leadership in helping others to coordinate the use of content, technologies and teaching approach during the field practices.	R 3. I design the activities to let students create digital narratives by using e-learning practices on the topic of learning English in collaboration with their parents.
4.6 Understanding and Applying	S 1. The time and effort I put into the e-learning practices of the course is generally worthwhile, given how much it assisted my professional development.	S 2. I know about technologies that I can use for understanding and teaching English with e-learning practices for my students.	S 3. I can teach English that appropriately combine with my understandings for curriculum studies, technologies and teaching approaches.
4.7 Creating and Promoting	U 1. My professional development as an educator has benefited directly from online interactions through e-learning practices	U 2. During the field practices, e-learning practices ease the process of my teaching.	U 3. There are differences in understanding the functions of e-learning practices comparing with experiencing activities for teaching English.

6.1 The relationship between the participants' gender (Question A1) and the options they chose in three scenarios (Questions in the Part 2 to 4 of Questionnaire)

Scenario one: In-class training at the university

First, the way in which participants' gender influenced their choices was analyzed in three parts. There were 153 male participants and 177 female participants in total. Their answers showed how their gender influenced their choices during their in-class training at university (see Table 20).

Table 20. Participants' Gender and the Participants' Responses to implementing e-learning practice during in-class training by Chi-Square Test--Scenario one (N=330)

Type of e-learning practice	Question	Response	Male		Female		χ^2	*p*
			n	%	*n*	%		
2.1 Searching and Selecting	B1	Always	16	10.46	10	5.65	14.43	0.006**
		Very often	54	35.29	43	24.29		
		Sometimes	55	35.95	73	41.24		
		Rarely	20	13.07	46	25.99		
		Never	8	5.23	5	2.82		
	B2	Always	22	14.38	17	9.6	8.79	0.067
		Very often	57	37.25	58	32.77		
		Sometimes	54	35.29	63	35.59		
		Rarely	15	9.8	36	20.34		
		Never	5	3.27	3	1.69		
	B3	Always	16	10.46	13	7.34	9.735	0.045*
		Very often	47	30.72	43	24.29		
		Sometimes	56	36.6	87	49.15		
		Rarely	26	16.99	32	18.08		
		Never	8	5.23	2	1.13		
2.2 Exploring	C1	Always	14	9.15	11	6.21	7.37	0.118
		Very often	45	29.41	52	29.38		
		Sometimes	54	35.29	73	41.24		
		Rarely	31	20.26	39	22.03		

		Never	9	5.88	2	1.13		
		Strongly Disagree	3	1.96	3	1.69		
		Disagree	24	15.69	19	10.73		
	C2	Neutral	48	31.37	43	24.29	5.785	0.216
		Agree	70	45.75	104	58.76		
		Strongly Agree	8	5.23	8	4.52		
2.3 Testing	D2	Always	16	10.46	18	10.17	7.709	0.103
		Very often	68	44.44	59	33.33		
		Sometimes	38	24.84	65	36.72		
		Rarely	28	18.3	34	19.21		
		Never	3	1.96	1	0.56		
	D3	Always	14	9.15	13	7.34	6.328	0.176
		Very often	47	30.72	36	20.34		
		Sometimes	48	31.37	60	33.9		
		Rarely	34	22.22	54	30.51		
		Never	10	6.54	14	7.91		
2.4 Analyzing and Synthesizing	E2	Strongly Disagree	8	5.23	3	1.69	11.06	0.026*
		Disagree	40	26.14	32	18.08		
		Neutral	57	37.25	64	36.16		
		Agree	43	28.1	75	42.37		
		Strongly Agree	5	3.27	3	1.69		
2.5 Collaborating and Discussing	F1	Always	12	7.84	9	5.08	6.696	0.153
		Very often	55	35.95	58	32.77		
		Sometimes	63	41.18	72	40.68		
		Rarely	16	10.46	34	19.21		

		Never	7	4.58	4	2.26	
		Always	16	10.46	10	5.65	
		Very often	45	29.41	48	27.12	
	F2	Sometimes	59	38.56	74	41.81	3.564	0.468
		Rarely	28	18.3	40	22.6	
		Never	5	3.27	5	2.82	
		Always	15	9.8	14	7.91	
		Very often	56	36.6	35	19.77	
	F3	Sometimes	56	36.6	67	37.85	20.57	0.000**
		Rarely	22	14.38	58	32.77	
		Never	4	2.61	3	1.69	
		Always	16	10.46	16	9.04	
		Very often	48	31.37	73	41.24	
	G1	Sometimes	53	34.64	57	32.2	5.21	0.266
		Rarely	29	18.95	28	15.82	
		Never	7	4.58	3	1.69	
		Strongly Disagree	8	5.23	2	1.13	
2.6 Understanding and Applying		Disagree	22	14.38	20	11.3	
	G2	Neutral	58	37.91	65	36.72	7.821	0.098
		Agree	58	37.91	85	48.02	
		Strongly Agree	7	4.58	5	2.82	
		Definitely	14	9.15	8	4.52	
	G3	Very Probably	53	34.64	53	29.94	12.445	0.014*
		Possibly	65	42.48	102	57.63	
		Probably Not	17	11.11	14	7.91	

		Definitely No	4	2.61	0	0		
2.7 Creating and Promoting	H2	Always	17	11.11	17	9.6	4.614	0.329
		Very often	66	43.14	59	33.33		
		Sometimes	50	32.68	72	40.68		
		Rarely	16	10.46	25	14.12		
		Never	4	2.61	4	2.26		
	H 3	Providing me opportunities to integrate effective pedagogies	25	16.34	30	16.95	10.752	0.029*
		Assuring my schedule flexibility	34	22.22	33	18.64		
		Improving my learning outcomes	62	40.52	50	28.25		
		Well-structured and organized information is available for me	15	9.8	31	17.51		
		E-learning practices are aligned with courses and field practices	17	11.11	33	18.64		

* $p<0.05$ ** $p<0.01$

In part two of the questionnaire there were 21 questions in total, with 16 multiple choice questions and five multiple selections (Question C3, Question D1, Question E1, Question E3, Question H1). In Table 20, 16 multiple choice questions are listed. Generally speaking, participants' gender (Question A1) did not show significance in relation to Questions B2, C1, C2, D2, D3, F1, F2, G1, G2, and H2 ($p > 0.05$). Thus, responses by gender were consistent and showed no difference in relation to participants' CK about implementing the e-learning practice of *Searching and Selecting* (Questions B2), participants' PK and CK about implementing the e-learning practice of *Exploring* (Questions C1 and C2), participants' CK about implementing the e-learning practice of *Testing* (Question D2), participants' PK and CK about implementing the e-learning practice of *Collaborating and Discussing* (Questions F1 and F2), participants' PK and CK about implementing the e-learning practice of *Understanding and Applying* (Questions G1 and G2), and participants' CK about implementing the e-learning practice of *Creating and Promoting* (Question H2).

However, participants' gender (Question A1) did appear to be significant for Questions B1, B3, E2, F3, and H3 ($p < 0.05$), meaning that the responses of one gender to participants' PK and TK about implementing the e-learning practice of *Searching and Selecting* (Questions B1 and B3), participants' CK about implementing the e-learning practice of *Analyzing and Synthesizing* (Question E2), participants' TK of implementing the e-learning practice of *Collaborating and Discussing* (Question F3) and participants' TK of implementing the e-learning practice of *Creating and*

Promoting (Question H3) were significantly different from those of the other gender.

Specifically, participants' gender (Question A1) showed a level of significance of 0.01 in relation to participants' PK about implementing the e-learning practice of *Searching and Selecting* (Questions B1, $\chi^2 = 14.43$, $p = 0.01 < 0.01$): "I select some appropriate e-learning practices from a wide range of e-learning practices for English language teaching and learning." For the total responses to the entirety of part two of the questionnaire, among male participants the percentage that opted for *Very often* was 35.29%, which is higher than the female participants' percentage of 24.29%. The percentage of female participants that opted for *Rarely* was 25.99%, higher than the male participants' percentage of 13.07%. Meanwhile, responses by gender differed at a level of significance of 0.05 in relation to participants' TK about implementing the e-learning practice of *Searching and Selecting* (Question B3, $\chi^2 = 9.74$, $p = 0.05 < 0.05$): "I know how to solve my own technical problems when I complete the e-learning practices in English," with the percentage of female participants that opted for *Sometimes* being 49.15%, clearly higher than the male participants' percentage (36.60%); for participants' TK of implementing the e-learning practice of *Creating and Promoting* (Question H3, $\chi^2 = 10.75$, $p = 0.03 < 0.05$) the percentage of male participants that opted for *Improving my learning outcomes* was 40.52%, higher than the female participants' percentage (28.25%); and for participants' TK of implementing the e-learning practice of *Collaborating and Discussing* (Question F3, $\chi^2 = 20.57$, $p = 0.00 < 0.01$), the percentage of male participants that opted for *Very often* was 36.60%,

higher than the female participants' percentage (19.77%), whereas the female participants' percentage that opted for *Rarely* was 32.77%, much higher than the male participants' percentage (14.38%).

Scenario Two: Self-modeling E-learning Practices in Daily Life

The third part of the questionnaire had four multiple choice questions, each in reference to self-modeling e-learning practices in daily life. The way in which gender influenced the participants' answers regarding self-modeling e-learning practices in their daily lives is presented in Table 21.

Table 21. Participants' Gender and Participants' Responses to Part 3 of the Questionnaire, Regarding Self-modeling E-learning in Daily Life by Chi-Square Test-- Scenario Two (N=330)

Question	Response	Male		Female		χ^2	*p*
		n	%	*n*	%		
J1	Always	22	14.38	14	7.91	5.69	0.224
	Very often	60	39.22	66	37.29		
	Sometimes	56	36.6	69	38.98		
	Rarely	13	8.5	25	14.12		
	Never	2	1.31	3	1.69		
J2	Strongly Disagree	7	4.58	3	1.69	9.836	0.043*
	Disagree	15	9.8	11	6.21		
	Neutral	53	34.64	48	27.12		
	Agree	57	37.25	94	53.11		
	Strongly Agree	21	13.73	21	11.86		
J3	Strongly Disagree	3	1.96	0	0	9.41	0.052
	Disagree	23	15.03	15	8.47		
	Neutral	39	25.49	43	24.29		
	Agree	73	47.71	106	59.89		
	Strongly Agree	15	9.8	13	7.34		
J4	Strongly Disagree	11	7.19	0	0	24.174	0.000**

Disagree	**19**	**12.42**	**12**	**6.78**
Neutral	**42**	**27.45**	**45**	**25.42**
Agree	**62**	**40.52**	**107**	**60.45**
Strongly Agree	**19**	**12.42**	**13**	**7.34**

*** p<0.05 ** p<0.01**

Participants' gender (Question A1) did not show a significant influence on the responses to Questions J1 and J3 ($p > 0.05$), meaning that the responses by the two genders to whether participants recap their planned e-learning practices to make themselves more familiar with these practices (Question J1) and participants' belief that implementation of e-learning practices improves their sense of accomplishment (Question J3) showed consistency and no difference. However, the responses on whether implementation of e-learning practices makes participants more excited and satisfied with their lectures (Question J2), and whether implementation of e-learning practices in English language teacher education makes designing teaching content easier (Question J4), differed significantly by gender.

Specifically, the responses of the two genders differed at a level of significance of 0.01 in relation to whether implementation of e-learning practices in English language teacher education make designing the teaching content easier for participants (Question J4, $\chi^2 = 24.17$, $p = 0.00 < 0.01$): "The implementation of e-learning practices in English language teacher education makes it easier for me to design my teaching content." Furthermore, among all participants' responses in part three, the percentage of female participants that opted for *Agree* was 60.45%, higher than the male participants' percentage (40.52%). Meanwhile, the responses about whether implementation of e-

learning practices makes participants more excited and satisfied with their lectures (Question J2), "I believe that implementation of e-learning practices makes me more excited and satisfied with my lectures," differed by gender at a level of significance of 0.05 ($\chi^2 = 9.84$, $p = 0.04 < 0.05$). The percentage of female participants that opted for *Agree* was 53.11%, higher than the percentage of male participants (37.25%) who chose that option (see Table 23).

Scenario Three: Implementation of E-learning Practices During Field Experience

In part four of the questionnaire, there were 21 questions in total, including 20 multiple choice questions and one (Question K3) multiple selection. In Table 22, 20 multiple choice questions are listed. Generally speaking, gender did not show a significant difference in the participants' responses to Questions K1, L2, M1, M2, N3, R1, R2, R3, S1, U1, and U2 ($p > 0.05$), meaning that both genders' responses about participants' PCK about implementing the e-learning practice of *Searching and Selecting* (Questions K1), participants' TPK about implementation the e-learning practice of *Exploring* (Question L2), participants' PCK and TPK about implementing the e-learning practice of *Testing* (Questions M1 and M2), participants' TCK about the e-learning practice of *Analyzing and Synthesizing* (Question N3), participants' PCK, TPK and TCK about the e-learning practice of *Collaborating and Discussing* (Questions R1, R2, and R3), participants' PCK about the e-learning practice of *Understanding and Apply* (Question S1), and participants' PCK and TPK about the e-learning practice of *Creating and*

Promoting (Questions U1 and U2) showed consistency and there was no significant difference by participants' gender.

However, participants' gender did have a significant impact on participants' responses to Questions K2, L1, L3, M3, N1, N2, S2, S3, and U3 ($p < 0.05$). Thus, participants' responses with regards to their TPK about implementing the e-learning practice of *Searching and Selecting* (Question K2); participants' PCK and TCK about implementation of the e-learning practice of *Exploring* (Questions L1 and L3); participants' TCK about implementation of the e-learning practice of *Testing* (Question M3), participants' PCK and TPK about the e-learning practice of *Analyzing and Synthesizing* (Questions N1 and N2), participants' TPK and TCK about implementation of the e-learning practice of *Understanding and Applying* (Questions S2 and S3); and participants' TCK about the e-learning practice of *Creating and Promoting* (Question U3) differed significantly by participants' gender.

Table 22. Participants' Gender and the Participants' Responses to Implementations of e-learning practices during the field experience by Chi-Square Test--Scenario Three (N=330)

Type of e-learning practice	Question	Response	Male		Female			
			n	%	*n*	%	χ^2	*p*
4.1 Searching and Selecting	K1	Always	19	12.4	12	6.78	5.13	0.274
		Very often	59	38.6	64	36.16		
		Sometimes	45	29.4	67	37.85		
		Rarely	28	18.3	33	18.64		
		Never	2	1.31	1	0.56		
	K2	Strongly Disagree	8	5.23	1	0.56	16.17	0.003**
		Disagree	27	17.7	26	14.69		
		Neutral	50	32.7	41	23.16		
		Agree	62	40.5	105	59.32		
		Strongly Agree	6	3.92	4	2.26		
4.2 Exploring	L1	Strongly Disagree	5	3.27	0	0	21.81	0.000**
		Disagree	27	17.7	10	5.65		
		Neutral	43	28.1	44	24.86		
		Agree	67	43.8	110	62.15		
		Strongly Agree	11	7.19	13	7.34		
	L2	Always	11	7.19	8	4.52	8.554	0.073
		Very often	62	40.5	54	30.51		
		Sometimes	55	36	66	37.29		
		Rarely	23	15	47	26.55		
		Never	2	1.31	2	1.13		

		Always	18	11.8	22	12.43	
		Very often	61	39.9	58	32.77	
	L3	Sometimes	44	28.8	64	36.16	10.19	0.037*
		Rarely	20	13.1	31	17.51	
		Never	10	6.54	2	1.13	
		Strongly Disagree	8	5.23	3	1.69	
		Disagree	24	15.7	16	9.04	
	M1	Neutral	45	29.4	56	31.64	8.426	0.077
		Agree	69	45.1	97	54.8	
		Strongly Agree	7	4.58	5	2.82	
		Always	20	13.1	15	8.47	
		Very often	54	35.3	57	32.2	
4.3 Testing	M2	Sometimes	51	33.3	68	38.42	6.837	0.145
		Rarely	25	16.3	37	20.9	
		Never	3	1.96	0	0	
		Strongly Disagree	6	3.92	1	0.56	
		Disagree	26	17	11	6.21	
	M3	Neutral	42	27.5	36	20.34	22.69	0.000**
		Agree	63	41.2	113	63.84	
		Strongly Agree	16	10.5	16	9.04	
		Mahara	25	16.34	55	31.07	
	N1	Weebly	31	20.26	16	9.04	
		Blogger	66	43.14	62	35.03	20.545	0.000**
		WordPress	25	16.34	26	14.69	
		Other	6	3.92	18	10.17	

		Always	17	11.1	18	10.17		
		Very often	45	29.4	72	40.68		
	N2	Sometimes	63	41.2	53	29.94	11.16	0.025*
		Rarely	24	15.7	34	19.21		
4.4 Analyzing and Synthesizing		Never	4	2.61	0	0		
		Always	13	8.5	19	10.73		
		Very often	54	35.3	52	29.38		
	N3	Sometimes	48	31.4	60	33.9	3.164	0.531
		Rarely	30	19.6	41	23.16		
		Never	8	5.23	5	2.82		
		Always	22	14.4	16	9.04		
		Very often	48	31.4	67	37.85		
	R1	Sometimes	54	35.3	66	37.29	7.472	0.113
		Rarely	23	15	27	15.25		
		Never	6	3.92	1	0.56		
		Strongly Disagree	4	2.61	2	1.13		
		Disagree	17	11.1	23	12.99		
4.5 Collaborating and Discussing	R2	Neutral	49	32	58	32.77	5.235	0.264
		Agree	70	45.8	88	49.72		
		Strongly Agree	13	8.5	6	3.39		
		Always	8	5.23	6	3.39		
		Very often	32	20.9	42	23.73		
	R3	Sometimes	54	35.3	68	38.42	1.546	0.819
		Rarely	50	32.7	52	29.38		
		Never	9	5.88	9	5.08		

		Strongly Disagree	4	2.61	4	2.26		
		Disagree	17	11.1	16	9.04		
	S1	Neutral	37	24.2	39	22.03	1.151	0.886
		Agree	76	49.7	98	55.37		
		Strongly Agree	19	12.4	20	11.3		
		Strongly Disagree	7	4.58	0	0		
		Disagree	12	7.84	16	9.04		
4.6 Understanding and Applying	S2	Neutral	41	26.8	43	24.29	17.78	0.001**
		Agree	75	49	111	62.71		
		Strongly Agree	18	11.8	7	3.95		
		Strongly Disagree	4	2.61	1	0.56		
		Disagree	20	13.1	15	8.47		
	S3	Neutral	41	26.8	30	16.95	12.87	0.012*
		Agree	68	44.4	111	62.71		
		Strongly Agree	20	13.1	20	11.3		
		Strongly Disagree	9	5.88	6	3.39		
		Disagree	16	10.5	11	6.21		
	U1	Neutral	54	35.3	47	26.55	8.631	0.071
		Agree	59	38.6	93	52.54		
		Strongly Agree	15	9.8	20	11.3		
4.7 Creating and Promoting								
		Strongly Disagree	5	3.27	1	0.56		
		Disagree	28	18.3	21	11.86		
	U2	Neutral	30	19.6	43	24.29	7.376	0.117
		Agree	61	39.9	82	46.33		
		Strongly Agree	29	19	30	16.95		

		Much Higher	**9**	**5.88**	**4**	**2.26**		
		Higher	**53**	**34.64**	**83**	**46.89**		
	U3	**About the same**	**29**	**18.95**	**19**	**10.73**	**10.317**	**0.035***
		Lower	**56**	**36.6**	**67**	**37.85**		
		Much lower	**6**	**3.92**	**4**	**2.26**		

*** *p*<0.05 ** *p*<0.01**

Participants' responses regarding their TPK about implementing the e-learning practice of *Searching and Selecting* (Question K2) differed by gender at a level of significance of 0.01 ($\chi^2 = 16.17$, $p = 0.00 < 0.01$). Furthermore, among all participants' responses in the fourth part of the questionnaire, the percentage of female participants that opted for *Agree* was 59.32%, higher than the percentage of male participants who chose that option (40.52%); for participants' TPK about implementation of the e-learning practice of *Understanding and Applying* (Question S2, $\chi^2 = 17.78$, $p = 0.00 < 0.01$), the percentage of female participants that opted for *Agree* was 62.71%, which is higher than the percentage of male participants (49.02%); for participants' PCK about the e-learning practice of *Analyzing and Synthesizing* (Question N1, $\chi^2 = 20.55$, $p = 0.00 < 0.01$), the percentage of female participants that opted for *Mahara* was 31.07%, higher than the percentage of male participants that chose that option (16.34%), while the percentage of male participants that opted for *Weebly* was 20.26%, much higher than the percentage of females (9.04%); for participants' TCK about implementation of the e-learning practice of *Testing* (Question M3, $\chi^2 = 22.69$, $p = 0.00 < 0.01$), "E-learning practices beneficially bridge pedagogical theories and teaching practices to improve my teaching skills," the percentage of male participants that chose *Disagree* was 16.99%, significantly higher than female participants' percentage (6.21%); and the percentage of female participants that opted for *Agree* was 63.84%, which was higher than the percentage of male participants who chose *Agree* (41.18%). Meanwhile, participants' gender significantly influenced (at a level of significance of 0.05, $\chi^2 = 10.32$, $p = 0.04 < 0.05$) how participants responded to their TCK about the e-learning practice of

Creating and Promoting (Question U3, "There are differences in *understanding* the functions of e-learning practices compared with *experiencing* activities for teaching English"). The percentage of female participants that opted for *Higher* in response to that question was 46.89%, definitely greater than the percentage of male participants (34.64%); for participants' TCK about implementation of the e-learning practice of *Understanding and Applying* (Question S3, $\chi^2 = 12.87$, $p = 0.01 < 0.05$), the percentage of female participants who opted for *Agree* was 62.71%, again higher than the percentage of male participants who chose *Agree* (44.44%); for participants' TPK about the e-learning practice of *Analyzing and Synthesizing* (Question N2, $\chi^2 = 11.16$, $p = 0.02 < 0.05$), "During my field experience, e-learning practices accommodated the preferences of both students and teachers," the percentage of female participants that opted for *Very often* was 40.68%, higher than the percentage of male participants (29.41%), whereas for that question the percentage of male participants that opted for *Sometimes* was 41.18%, which is higher than the percentage of female participants (29.94%); for participants' PCK about implementation of the e-learning practice of *Exploring* (Question L1, $\chi^2 = 21.81$, $p = 0.00 < 0.01$), the percentage of male participants that chose *Disagree* was 17.65%, much higher than the percentage of female participants (5.65%), whereas for that question the percentage of female participants that opted for *Agree* was 62.15%, higher than the percentage of male participants who chose that option (43.79%).

6.2 The Relationship Between Participants' Attendance in Any Workshops or Compulsory Lessons About E-learning Practices for Teaching English Before They Enrolled at University (Question A4) and the Options They Chose in Three Scenarios (Questions in Parts 2 to 4 of Questionnaire)

Scenario One: In-class Training at University (Part Two of Questionnaire)

The influence that Question A4 (regarding whether participants had joined any workshops or compulsory lessons about e-learning practices before they enrolled at university) had on their responses was analyzed in three parts. The first part analyzed how Question A4 influenced participants' choices during their in-class training at university. Of the 330 participants, 161 chose *Joined* and 169 chose *Not yet joined* in response to Question A4 (regarding whether they had joined any workshops or compulsory lessons about e-learning practices before they enrolled at university), (see Table 25). Part two had 21 questions in total, 16 of which multiple choice questions were and five of which multiple selection (Question C3, Question D1, Question E1, Question E3, Question H1) were. In Table 23, 16 multiple choice questions are listed.

Table 23. Participants' Pre-university Experience with E-learning and Their Responses to Questions B1–H1 in Part 2 of the Questionnaire by Chi-Square Test-- Scenario one (*N*=330)

Part 2: In-class Training at the University			**Joined**		**Not yet Joined**		χ^2	*p*
Type of e-learning practice	**Question**	**Response**	***n***	**%**	***n***	**%**		
		Always	**17**	**10.56**	**9**	**5.33**		
		Very often	**67**	**41.61**	**30**	**17.75**		
	B1	**Sometimes**	**52**	**32.3**	**76**	**44.97**	**32.856**	**0.000****
		Rarely	**19**	**11.8**	**47**	**27.81**		
		Never	**6**	**3.73**	**7**	**4.14**		
		Always	**24**	**14.91**	**15**	**8.88**		
		Very often	**76**	**47.2**	**39**	**23.08**		
2.1 Searching and Selecting	**B2**	**Sometimes**	**45**	**27.95**	**72**	**42.6**	**33.185**	**0.000****
		Rarely	**15**	**9.32**	**36**	**21.3**		
		Never	**1**	**0.62**	**7**	**4.14**		
		Always	**20**	**12.42**	**9**	**5.33**		
		Very often	**55**	**34.16**	**35**	**20.71**		
	B3	**Sometimes**	**62**	**38.51**	**81**	**47.93**	**16.971**	**0.002****
		Rarely	**21**	**13.04**	**37**	**21.89**		
		Never	**3**	**1.86**	**7**	**4.14**		
		Always	**20**	**12.42**	**5**	**2.96**		
		Very often	**55**	**34.16**	**42**	**24.85**		
2.2 Exploring	**C1**	**Sometimes**	**55**	**34.16**	**72**	**42.6**	**17.309**	**0.002****
		Rarely	**27**	**16.77**	**43**	**25.44**		
		Never	**4**	**2.48**	**7**	**4.14**		

		Strongly Disagree	4	2.48	2	1.18		
		Disagree	19	11.8	24	14.2		
	C2	Neutral	41	25.47	50	29.59	2.946	0.567
		Agree	87	54.04	87	51.48		
		Strongly Agree	10	6.21	6	3.55		
		Always	22	13.66	12	7.1		
		Very often	74	45.96	53	31.36		
	D2	Sometimes	43	26.71	60	35.5	18.262	0.001**
		Rarely	22	13.66	40	23.67		
2.3 Testing		Never	0	0	4	2.37		
		Always	14	8.7	13	7.69		
		Very often	45	27.95	38	22.49		
	D3	Sometimes	62	38.51	46	27.22	13.357	0.010**
		Rarely	34	21.12	54	31.95		
		Never	6	3.73	18	10.65		
		Strongly Disagree	5	3.11	6	3.55		
		Disagree	38	23.6	34	20.12		
2.4 Analyzing and Synthesizing	E2	Neutral	53	32.92	68	40.24	3.981	0.409
		Agree	59	36.65	59	34.91		
		Strongly Agree	6	3.73	2	1.18		
		Always	15	9.32	6	3.55		
		Very often	66	40.99	47	27.81		
2.5 Collaborating and Discussing	F1	Sometimes	63	39.13	72	42.6	23.242	0.000**
		Rarely	11	6.83	39	23.08		
		Never	6	3.73	5	2.96		

		Always	13	8.07	13	7.69		
		Very often	54	33.54	39	23.08		
	F2	Sometimes	68	42.24	65	38.46	11.017	0.026*
		Rarely	23	14.29	45	26.63		
		Never	3	1.86	7	4.14		
		Always	20	12.42	9	5.33		
		Very often	43	26.71	48	28.4		
	F3	Sometimes	59	36.65	64	37.87	5.853	0.21
		Rarely	35	21.74	45	26.63		
		Never	4	2.48	3	1.78		
		Always	22	13.66	10	5.92		
		Very often	63	39.13	58	34.32		
	G1	Sometimes	51	31.68	59	34.91	9.665	0.046*
		Rarely	22	13.66	35	20.71		
		Never	3	1.86	7	4.14		
		Strongly Disagree	5	3.11	5	2.96		
		Disagree	23	14.29	19	11.24		
2.6 Understanding and Applying	G2	Neutral	56	34.78	67	39.64	7.075	0.132
		Agree	67	41.61	76	44.97		
		Strongly Agree	10	6.21	2	1.18		
		Definitely	13	8.07	9	5.33		
		Very Probably	65	40.37	41	24.26		
	G3	Possibly	68	42.24	99	58.58	14.311	0.006**
		Probably Not	12	7.45	19	11.24		
		Definitely Not	3	1.86	1	0.59		
2.7 Creating and Promoting	H2	Always	20	12.42	14	8.28	29.508	0.000**

		Very often	**82**	**50.93**	**43**	**25.44**		
		Sometimes	**42**	**26.09**	**80**	**47.34**		
		Rarely	**14**	**8.7**	**27**	**15.98**		
		Never	**3**	**1.86**	**5**	**2.96**		
	H3	**Providing me opportunities to integrate effective pedagogies**	**28**	**17.39**	**27**	**15.98**	**6.08**	**0.193**
		Assuring my schedule flexibility	**33**	**20.5**	**34**	**20.12**		
		Improving my learning outcomes	**54**	**33.54**	**58**	**34.32**		
		Well-structured and organized information is available for me	**28**	**17.39**	**18**	**10.65**		
		E-learning practices are aligned with courses and field practices	**18**	**11.18**	**32**	**18.93**		

*** p<0.05 ** p<0.01**

Generally speaking, participants' pre-university experience (Question A4) did not show significance in relation to Questions C2, E2, F3, G2, and H3 ($p > 0.05$), meaning that Question A4 (regarding whether participants had joined any workshops or compulsory lessons about e-learning practices before they enrolled at university) was consistent and exerted no difference with regard to participants' responses regarding their CK about implementing the e-learning practice of *Exploring* (Questions C2), participants' CK about implementing the e-learning practice of *Analyzing and Synthesizing* (Question E2), participants' TK about implementing the e-learning practice of *Collaborating and Discussing* (Question F3), participants' CK about implementing the e-learning practice of *Understanding and Applying* (Question G2), and participants' TK about implementing the e-learning practice of *Creating and Promoting* (Question H3), (see Table 23).

However, participants' pre-university experience (Question A4) had a significant effect on their responses to Questions B1, B2, B3, C1, D2, D3, F1, F2, G1, G3, and H2 ($p < 0.05$), meaning that whether or not participants had attended workshops or compulsory lessons on e-learning practices for teaching English prior to enrolling at University showed significantly different effects on their responses to their PK, CK and TK about implementing the e-learning practice of *Searching and Selecting* (Questions B1, B2, and B3), participants' PK about implementing the e-learning practice of *Exploring* (Question C1), participants' CK and TK about implementing the e-learning practice of *Testing* (Questions D2 and D3), participants' CK and PK about implementing the e-

learning practice of *Collaborating and Discussing* (Questions F1 and F2), participants' TK and PK about implementing the e-learning practice of *Understanding and Applying* (Questions G1 and G3), and participants' CK about implementing the e-learning practice of *Creating and Promoting* (Question H2).

Participants' pre-university experience (Question A4) showed a high level of significance in relation to participants' PK about implementing the e-learning practice of *Searching and Selecting* (Question B1, $\chi^2 = 32.86$, $p = 0.00 < 0.01$): "I select some appropriate e-learning practices from a wide range of e-learning practices for English language teaching and learning." Among all participants' responses in part two of the questionnaire, participants who had joined workshops or compulsory lessons about e-learning practices for teaching English before they enrolled at university and that opted for *Very often* in response to B1 was 41.61%, higher than the percentage of participants who had not joined workshops or compulsory lessons before they enrolled at university (17.75%); for participants' CK about implementing the e-learning practice of *Searching and Selecting* (Question B2, $\chi^2 = 33.18$, $p = 0.00 < 0.01$), "Teachers provide video records of successful cases of teaching English by implementing e-learning practices to formulate English pedagogies," the percentage of participants who had joined workshops or compulsory lessons about e-learning practices for teaching English prior to enrolling at university and who opted for *Very often* in response to B2 was 47.20%, a higher percentage than that of participants who had not joined workshops or compulsory lessons before they enrolled at university (23.08%) and who chose *Very*

often for B2; for participants' TK about implementing the e-learning practice of *Searching and Selecting* (Question B3, "I knew how to solve my own technical problems when I completed the e-learning practices in English" ($\chi^2 = 16.97$, $p = 0.00 < 0.01$), the percentage of participants who had joined workshops or compulsory lessons about e-learning practices prior to enrolling at university and who opted for *Very often* to B3 was 34.16%, higher than the percentage of participants who chose *Very often* for B3 but who had not joined workshops or compulsory lessons before they enrolled at university (20.71%); for participants' CK about implementing the e-learning practice of *Testing* (Question D2), regarding participating in English language training courses ($\chi^2 = 18.26$, $p = 0.00 < 0.01$), the percentage of participants who had joined workshops or compulsory lessons about e-learning practices before enrolling at university and who opted for *Very often* in response to D2 was 45.96%, noticeably higher than the percentage of participants who had not joined workshops or compulsory lessons prior to enrolling at university percentage (31.36%); on the other hand, the percentage of participants who had not joined workshops or compulsory lessons about e-learning practices before they enrolled at university and who opted for *Rarely* in response to D2 was 23.67%, which is higher than the percentage of participants who had joined workshops or compulsory lessons before enrolling at university (13.66%); for participants' TK about implementing the e-learning practice of *Testing* (Question D3), about their use of website editors ($\chi^2 = 13.36$, $p = 0.01 < 0.01$), the percentage of participants who responded in the affirmative to question A4 and who chose *Sometimes* regarding website editor use was 38.51%, clearly higher than the percentage of

participants who had not joined workshops or compulsory lessons before enrolling (27.22%), while the percentage of participants who responded in the negative in response to A4 and who opted for *Rarely* regarding website editor use was 31.95%, clearly higher than the percentage that had joined workshops before enrolling and who rarely used website editors (21.12%); for participants' CK about implementing the e-learning practice of *Creating and Promoting* (Question H2), regarding whether they "devoted a lot of effort to e-learning practices in teaching English" ($\chi^2 = 29.51$, $p = 0.00 < 0.01$), the percentage of participants who had joined workshops before university and who opted for *Very often* regarding devoting a large effort to e-learning was 50.93%, which is much higher than the percentage of participants who had not joined workshops before university and who responded *Very often* regarding devoting significant effort to e-learning in teaching English (25.44%); in addition, the percentage of participants who had not joined workshops before university and who opted for *Sometimes* and devoted significant effort to e-learning was 47.34%, higher than the percentage that responded in the affirmative to A4 and opted for *Sometimes* and devoted significant effort to e-learning (26.09%); for participants' TK about implementing the e-learning practice of *Understanding and Applying* (Question G3), regarding "having the technical skills and needing to use technology to gain more experience for teaching the English language" ($\chi^2 = 14.31$, $p = 0.01 < 0.01$), the percentage of participants who responded in the affirmative to A4 and who opted for *Very Probably* having the technical skills and needing to use technology was 40.37%, clearly higher than the percentage that had not joined workshops before university (24.26%); the percentage of participants who had

not joined workshops and who opted for *Possibly* having the technical skills and needing to use technology was 58.58%, which is higher than the percentage of participants who had not previously joined workshops (42.24%); for participants' PK about implementing the e-learning practice of *Collaborating and Discussing* (Question F1), regarding knowing "how to evaluate learners' performance by integrating e-learning practices for English learning" ($\chi^2 = 23.24$, $p = 0.00 < 0.01$), the percentage of participants who had previously joined workshops or compulsory lessons about e-learning practices before university and who indicated they *Very often* knew how to evaluate performance by integrating e-learning was 40.99%, higher than the percentage of participants who had not joined workshops or compulsory lessons about e-learning practices (27.81%); finally, the percentage of participants who responded in the negative to A4 and who opted for *Rarely* knowing how to evaluate performance by integrating e-learning was 23.08%, much higher than the percentage of participants who had joined workshops before they enrolled at university and who knew how to integrate e-learning to evaluate performance (6.83%).

Meanwhile, participants' pre-university experience (Question A4) had a level of significance of 0.05 in connection with the responses in relation to participants' CK about implementing the e-learning practice of *Collaborating and Discussing* (Question F2), regarding being able to "discuss English subject matter like an expert who specialized in English preservice teacher education in e-learning practices" ($\chi^2 = 11.02$, $p = 0.03 < 0.05$). Among all participants' responses, the percentage that had joined

workshops or compulsory lessons about e-learning practices for teaching English prior to enrolling at university and who opted for *Very often* regarding their ability to discuss English subject matter "like an expert" was 33.54%, clearly higher than the percentage that had not previously joined workshops (23.08%); in contrast, the percentage of participants who responded in the negative to A4 and who indicated they *Rarely* could discuss English subject matter like an expert was 26.63%, significantly higher than the percentage that had joined workshops or compulsory lessons before enrolling at university (14.29%).

Scenario Two: Self-modeling E-learning Practices in Daily Life (Part Three of Questionnaire)

Part three of the questionnaire, pertaining to self-modeling of e-learning practices in daily life, had four multiple choice questions. The way in which participants' pre-university experience (Question A4) influenced their self-modeling of e-learning practices in their daily life is presented in Table 24. Generally speaking, participants' pre-university experience (Question A4) did not show a significant relationship to Questions J2, J3, and J4 ($p > 0.05$), meaning that whether or not participants had joined workshops or compulsory lessons about e-learning practices for teaching English pre-university had a consistent relationship of no difference in relation to whether implementation of e-learning practice makes participants more excited and satisfied with their lectures (Question J2); participants believe that implementation of e-learning practices improves their sense of accomplishment (Question J3); implementation of e-

learning practices in English language teacher education makes designing teaching content easier (Question J4). However, participants' pre-university experience (Question A4) did have a significant relationship with the responses to Question J1 ($p < 0.05$), meaning that whether or not participants had joined workshops or compulsory lessons about e-learning practices for teaching English had a significant effect on their responses about whether participants recap their planned e-learning practices to make themselves more familiar with these practice (Question J1).

Participants' pre-university experience (Question A4) had a level of significance of 0.01 in relation to whether participants recap their planned e-learning practices to make themselves more familiar with these practices (Question J1), "I recap planned e-learning practices to make myself more familiar with these practices in my daily life" ($\chi^2 = 16.25$, $p = 0.00 < 0.01$). Among all participants' responses in part three of the questionnaire, the percentage that had joined workshops or compulsory lessons about e-learning practices for teaching English before they enrolled at university and who opted for *Very often* in regard to whether participants recap their planned e-learning practices to make themselves more familiar with these practice (Question J1) was 45.34%, higher than the percentage of participants who had not joined workshops prior to enrolling at university (31.36%); in contrast, the percentage of participants who had not joined workshops before they enrolled at university and who opted for *Sometimes* in regard to whether participants recap their planned e-learning practices to make themselves more familiar with these practice (Question J1), was 43.20%, clearly higher

than the percentage of participants who had joined pre-university workshops or compulsory lessons (32.30%).

Table 24. Participants' Pre-university Experience with E-learning and Their Responses in Part 3 of the Questionnaire by Chi-Square Test-- Scenario Two (*N*=330)

Question A4. Had you joined any workshops or compulsory lessons about e-learning practices for teaching English before you enrolled in the university?							
Question	**Response**	**Joined**		**Not yet Joined**		χ^2	***p***
		n	**%**	***n***	**%**		
J1	**Always**	**23**	**14.29**	**13**	**7.69**	**16.254**	**0.003****
	Very often	**73**	**45.34**	**53**	**31.36**		
	Sometimes	**52**	**32.30**	**73**	**43.20**		
	Rarely	**12**	**7.45**	**26**	**15.38**		
	Never	**1**	**0.62**	**4**	**2.37**		
J2	**Strongly Disagree**	**5**	**3.11**	**5**	**2.96**	**3.256**	**0.516**
	Disagree	**13**	**8.07**	**13**	**7.69**		
	Neutral	**51**	**31.68**	**50**	**29.59**		
	Agree	**67**	**41.61**	**84**	**49.7**		
	Strongly Agree	**25**	**15.53**	**17**	**10.06**		
J3	**Strongly Disagree**	**1**	**0.62**	**2**	**1.18**	**0.662**	**0.956**
	Disagree	**20**	**12.42**	**18**	**10.65**		
	Neutral	**41**	**25.47**	**41**	**24.26**		
	Agree	**86**	**53.42**	**93**	**55.03**		
	Strongly Agree	**13**	**8.07**	**15**	**8.88**		
J4	**Strongly Disagree**	**7**	**4.35**	**4**	**2.37**	**2.697**	**0.61**
	Disagree	**16**	**9.94**	**15**	**8.88**		
	Neutral	**38**	**23.6**	**49**	**28.99**		
	Agree	**82**	**50.93**	**87**	**51.48**		
	Strongly Agree	**18**	**11.18**	**14**	**8.28**		

*** *p*<0.05 ** *p*<0.01**

Scenario Three: Implementation of E-learning Practices During Field Experience (Part Four of the Questionnaire)

The fourth part of the questionnaire had 21 questions in total, 20 of which multiple

choice questions were and one of which a multiple selection was (Question K3). In Tables 25, 16 multiple choice questions are listed. Whether joining workshops or compulsory lessons about e-learning practices for teaching English before their enrollment at university had influenced participants during their field experience is detailed in Table 25. Generally speaking, participants' pre-university experience (Question A4) did not show a significant relationship to their responses to Questions K2, L1, L3, M1, M2, M3, N1, N2, R3, S1, S2, S3, U1, and U3 ($p > 0.05$), meaning that whether or not they had previously joined e-learning workshops had a consistent effect of no differences in connection to participants' responses about their TPK about implementing the e-learning practice of *Searching and Selecting* (Questions K2), participants' PCK and TCK about implementing the e-learning practice of *Exploring* (Questions L1 and L3), participants' PCK, TPK and TCK about implementing the e-learning practice of *Testing* (Questions M1, M2, and M3), participants' PCK and TPK about implementing the e-learning practice of *Analyzing and Synthesizing* (Questions N2 and N3), participants' TCK about implementing the e-learning practice of *Collaborating and Discussing* (Question R3), participants' PCK and TCK about implementing the e-learning practice of *Understanding and Applying* (Questions S1, S2, and S3), and participants' PCK and TCK about implementing the e-learning practice of *Creating and Promoting* (Questions U1 and U3).

However, participants' pre-university experience (Question A4) did show a significant relation to Questions K1, L2, N3, R1, R2, and U2 ($p < 0.05$), meaning that whether or

not participants had previously joined e-learning workshops or lessons showed a consistent and significantly different relationship to responses about participants' PCK about implementing the e-learning practice of *Searching and Selecting* (Questions K1), participants' TPK about implementing the e-learning practice of *Exploring* (Question L2), participants' TCK about implementing the e-learning practice of *Analyzing and Synthesizing* (Question N3), participants' PCK and TPK about implementing the e-learning practice of *Collaborating and Discussing* (Questions R1 and R2) and participants' TPK about implementing the e-learning practice of *Creating and Promoting* (Question U2).

Table 25. Participants' Pre-university Experience with E-learning Workshops or Lessons and Their Responses in Part 4 of the Questionnaire by Chi-Square Test-- Scenario Three (*N*=330)

Type of e-learning practice	Question	Response	Joined		Not yet Joined		χ^2	*p*
			n	%	n	%		
4.1 Searching and Selecting	K1	Always	18	11.18	13	7.69	13.949	0.007**
		Very often	74	45.96	49	28.99		
		Sometimes	44	27.33	68	40.24		
		Rarely	24	14.91	37	21.89		
		Never	1	0.62	2	1.18		
	K2	Strongly Disagree	4	2.48	5	2.96	4.985	0.289
		Disagree	26	16.15	27	15.98		
		Neutral	47	29.19	44	26.04		
		Agree	76	47.2	91	53.85		
		Strongly Agree	8	4.97	2	1.18		
4.2 Exploring	L1	Strongly Disagree	4	2.48	1	0.59	3.039	0.551
		Disagree	20	12.42	17	10.06		
		Neutral	40	24.84	47	27.81		
		Agree	84	52.17	93	55.03		
		Strongly Agree	13	8.07	11	6.51		
	L2	Always	11	6.83	8	4.73	16.774	0.002**
		Very often	71	44.1	45	26.63		
		Sometimes	55	34.16	66	39.05		
		Rarely	22	13.66	48	28.4		
		Never	2	1.24	2	1.18		

		Always	25	15.53	15	8.88		
		Very often	65	40.37	54	31.95		
	L3	Sometimes	43	26.71	65	38.46	8.77	0.067
		Rarely	22	13.66	29	17.16		
		Never	6	3.73	6	3.55		
		Strongly Disagree	4	2.48	7	4.14		
		Disagree	19	11.8	21	12.43		
	M1	Neutral	40	24.84	61	36.09	7.609	0.107
		Agree	90	55.9	76	44.97		
		Strongly Agree	8	4.97	4	2.37		
		Always	20	12.42	15	8.88		
		Very often	57	35.4	54	31.95		
4.3 Testing	M2	Sometimes	60	37.27	59	34.91	5.075	0.28
		Rarely	23	14.29	39	23.08		
		Never	1	0.62	2	1.18		
		Strongly Disagree	4	2.48	3	1.78		
		Disagree	23	14.29	14	8.28		
	M3	Neutral	31	19.25	47	27.81	6.913	0.141
		Agree	84	52.17	92	54.44		
		Strongly Agree	19	11.8	13	7.69		
		Mahara	37	22.98	43	25.44		
		Weebly	25	15.53	22	13.02		
	N1	Blogger	70	43.48	58	34.32	8.067	0.089
		WordPress	23	14.29	28	16.57		
		Other	6	3.73	18	10.65		

		Always	17	10.56	18	10.65	
		Very often	63	39.13	54	31.95	
	N2	Sometimes	50	31.06	66	39.05	3.805	0.433
		Rarely	28	17.39	30	17.75	
		Never	3	1.86	1	0.59	
4.4 Analyzing and Synthesizing		Always	25	15.53	7	4.14	
		Very often	55	34.16	51	30.18	
	N3	Sometimes	54	33.54	54	31.95	21.314	0.000**
		Rarely	24	14.91	47	27.81	
		Never	3	1.86	10	5.92	
		Always	27	16.77	11	6.51	
		Very often	55	34.16	60	35.5	
	R1	Sometimes	51	31.68	69	40.83	9.689	0.046*
		Rarely	24	14.91	26	15.38	
		Never	4	2.48	3	1.78	
		Strongly Disagree	2	1.24	4	2.37	
		Disagree	27	16.77	13	7.69	
4.5 Collaborating and Discussing	R2	Neutral	36	22.36	71	42.01	19.817	0.001**
		Agree	83	51.55	75	44.38	
		Strongly Agree	13	8.07	6	3.55	
		Always	9	5.59	5	2.96	
		Very often	43	26.71	31	18.34	
	R3	Sometimes	61	37.89	61	36.09	8.965	0.062
		Rarely	43	26.71	59	34.91	
		Never	5	3.11	13	7.69	

		Strongly Disagree	3	1.86	5	2.96		
		Disagree	15	9.32	18	10.65		
	S1	Neutral	35	21.74	41	24.26	4.526	0.34
		Agree	83	51.55	91	53.85		
		Strongly Agree	25	15.53	14	8.28		
		Strongly Disagree	3	1.86	4	2.37		
		Disagree	15	9.32	13	7.69		
4.6 Understanding and Applying	S2	Neutral	36	22.36	48	28.40	5.243	0.263
		Agree	90	55.9	96	56.80		
		Strongly Agree	17	10.56	8	4.73		
		Strongly Disagree	1	0.62	4	2.37		
		Disagree	11	6.83	24	14.20		
	S3	Neutral	39	24.22	32	18.93	7.235	0.124
		Agree	89	55.28	90	53.25		
		Strongly Agree	21	13.04	19	11.24		
		Strongly Disagree	6	3.73	9	5.33		
		Disagree	11	6.83	16	9.47		
	U1	Neutral	50	31.06	51	30.18	2.98	0.561
		Agree	73	45.34	79	46.75		
		Strongly Agree	21	13.04	14	8.28		
4.7 Creating and Promoting		Strongly Disagree	1	0.62	5	2.96		
		Disagree	26	16.15	23	13.61		
	U2	Neutral	26	16.15	47	27.81	13.667	0.008**
		Agree	70	43.48	73	43.20		
		Strongly Agree	38	23.6	21	12.43		

		Much Higher	**5**	**3.11**	**8**	**4.73**		
		Higher	**69**	**42.86**	**67**	**39.64**		
	U3	**About the same**	**23**	**14.29**	**25**	**14.79**	**0.815**	**0.936**
		Lower	**59**	**36.65**	**64**	**37.87**		
		Much lower	**5**	**3.11**	**5**	**2.96**		

*** p<0.05 ** p<0.01**

Question A4 showed a level of significance of 0.01 in relation to participants' TPK about implementing the e-learning practice of *Collaborating and Discussing* (Question R2) regarding to what extent participants could "provide leadership in helping others to coordinate the use of content, technologies, and teaching approaches during field practice" ($\chi^2 = 19.82$, $p = 0.00 < 0.01$). Among all participants' responses in part four of the questionnaire, the percentage that had not joined workshops or compulsory lessons about e-learning practices for teaching English before enrolling at university and who opted for *Neutral* in response to R2 was 42.01%, which is clearly higher than the percentage that had joined workshops or compulsory lessons (22.36%); for participants' TCK about implementing the e-learning practice of *Creating and Promoting* (Question U2), regarding whether "during field practice, e-learning practices eased the process of my teaching" ($\chi^2 = 13.67$, $p = 0.01 < 0.01$), the percentage of participants who had not joined workshops about e-learning practices and who chose *Neutral* in response to U2 was 27.81%, somewhat higher than the percentage that had previously joined workshops or compulsory lessons (16.15%). The percentage of participants who had joined workshops or compulsory lessons about e-learning practices prior to enrolling at university and who said they *Strongly Agree* with U2 was 23.60%, clearly higher than the percentage that had not joined workshops or compulsory lessons (12.43%); for participants' TPK about implementing the e-learning practice of *Analyzing and Synthesizing* (Question N3), regarding whether schools attempted to reduce preservice English teachers anxiety by providing technology support for teaching and learning English before the start of field experience ($\chi^2 = 21.31$,

$p = 0.00 < 0.01$), the percentage of participants who responded in the negative to A4 and who chose *Rarely* for N3 was 27.81%, higher than the percentage that chose *Rarely* for N3 and had joined workshops or compulsory lessons before enrolling (14.91%); for participants' TPK about implementing the e-learning practice of *Exploring* (Question L2), regarding being able to "use strategies that combine content, technologies, and teaching approaches that they had learned about in the classroom" ($\chi^2 = 16.77$, $p = 0.00 < 0.01$), the percentage of participants who had joined workshops or compulsory lessons about e-learning practices prior to enrolling at university and who opted for *Very often* in response to L2 was 44.10%, which is higher than the percentage that had not joined workshops or compulsory lessons before enrolling at university (26.63%). Participants who responded in the negative to A4 and who opted for *Rarely* in response to L2 was 28.40%, which is higher than the percentage that had joined workshops or compulsory lessons and who selected *Rarely* for L2 (13.66%); for participants' PCK about implementing the e-learning practice of *Searching and Selecting* (Question K1), regarding knowing "how to select effective teaching pedagogies to guide students' thinking and learning in English" ($\chi^2 = 13.95$, $p = 0.01 < 0.01$), the percentage of participants who had joined workshops or compulsory lessons about e-learning practices before enrolling at university and who opted for *Very often* in response to K1 was 45.96%, noticeably higher than the percentage that had not joined such workshops (28.99%); the percentage of participants who had not joined workshops or compulsory lessons and who opted for *Sometimes* in response to K1 was 40.24%, higher than the percentage that had joined pre-university workshops or compulsory lessons (27.33%).

Meanwhile, Question A4 showed a level of significance of 0.05 in relation to Question R1 regarding whether "online English teaching and learning discussions were generally intellectually stimulating and inspiring for my students" ($\chi^2 = 9.69$, $p = 0.05 < 0.05$). Among all participants' responses in part four of the questionnaire, the percentage that had joined workshops or compulsory lessons about e-learning practices for teaching English prior to enrolling at university and who opted for *Always* in response to R1 was 16.77%, which is higher than the percentage that had not previously joined workshops or compulsory lessons (6.51%).

6.3 The Relationship Between Participants' Previous Experience Teaching English in Schools or Tutorial Centers Before They Enrolled at University (Question A5) and the Options They Chose in Three Scenarios (Questions in Parts 2 to 4 of Questionnaire)

Scenario One: In-class Training at University (Part Two of Questionnaire)

The influence of Question A5 (whether participants had previous experience teaching English in schools or tutorial centers before they enrolled at university) on participants' choices was analyzed in three parts. The first analysis was whether or not having had experience of teaching English in schools or tutorial centers before they enrolled at university influenced participants'' responses to part two of the questionnaire. There were 126 participants who chose *Yes, I have,* and 204 participants who chose *No, I have*

not. In part two of the questionnaire, there were 21 questions in total, with 16 being multiple choice questions and five being multiple selections. In Table 26, 15 multiple choice questions and one multiple selection are listed. Generally speaking, Question A5 did not show a significant relationship to Questions B2, C1, C2, D2, D3, E2, F1, F2, F3, G1, G2, G3, H2, and H3 ($p > 0.05$), meaning that whether or not participants had pre-university experience teaching English in schools or tutorial centers had a consistent effect of making no difference in relation to responses about participants' CK about implementation of the e-learning practice of *Searching and Selecting* (Question B2), participants' PK and CK about implementation of the e-learning practice of *Exploring* (Questions C1 and C2), participants' CK and TK about implementation of the e-learning practice of *Testing* (Questions D2 and D3), participants' CK about implementation of the e-learning practice of *Analyzing and Synthesizing* (Question E2), participants' PK, CK and TK about implementation of the e-learning practice of *Collaborating and Discussing* (Questions F1, F2, and F3), participants' PK, CK and TK about implementation of the e-learning practice of *Understanding and Applying* (Questions G1, G2, and G3), and participants' PK, CK and TK about implementation of the e-learning practice of *Creating and Promoting* (Questions H2 and H3).

On the other hand, participants' response to Question A5 (whether participants had previous experience teaching English in schools or tutorial centers before they enrolled at university) had a significant influence on their responses to Questions B1 and B3 ($p < 0.05$), meaning that whether or not they had pre-university experience teaching

English had consistent and significantly different effects on responses regarding participants' PK and TK about implementing the e-learning practice of *Searching and Selecting* (Questions B1 and B3).

Table 26. Participants' Pre-university Experience with Teaching English in Schools or Tutorial Centers and Their Responses in Part 2 of the Questionnaire by Chi-Square Test-- Scenario one (*N*=330)

Questionnaire Part 2: In-class Training at the University								
Type of e-learning practice			**Yes, I have**		**No, I have not**		χ^2	***p***
	Question	**Response**	***n***	**%**	***n***	**%**		
2.1 Searching and Selecting	**B1**	**Always**	**13**	**10.32**	**13**	**6.37**	**21.651**	**0.000****
		Very often	**44**	**34.92**	**53**	**25.98**		
		Sometimes	**31**	**24.6**	**97**	**47.55**		
		Rarely	**35**	**27.78**	**31**	**15.2**		
		Never	**3**	**2.38**	**10**	**4.9**		
	B2	**Always**	**15**	**11.9**	**24**	**11.76**	**3.647**	**0.456**
		Very often	**43**	**34.13**	**72**	**35.29**		
		Sometimes	**41**	**32.54**	**76**	**37.25**		
		Rarely	**25**	**19.84**	**26**	**12.75**		
		Never	**2**	**1.59**	**6**	**2.94**		
	B3	**Always**	**16**	**12.7**	**13**	**6.37**	**10.882**	**0.028***
		Very often	**38**	**30.16**	**52**	**25.49**		
		Sometimes	**52**	**41.27**	**91**	**44.61**		
		Rarely	**20**	**15.87**	**38**	**18.63**		
		Never	**0**	**0**	**10**	**4.9**		
2.2 Exploring	**C1**	**Always**	**14**	**11.11**	**11**	**5.39**	**5.438**	**0.245**
		Very often	**37**	**29.37**	**60**	**29.41**		
		Sometimes	**46**	**36.51**	**81**	**39.71**		
		Rarely	**27**	**21.43**	**43**	**21.08**		

		Never	2	1.59	9	4.41	
		Strongly Disagree	3	2.38	3	1.47	
		Disagree	16	12.7	27	13.24	
	C2	Neutral	30	23.81	61	29.9	1.931	0.748
		Agree	71	56.35	103	50.49	
		Strongly Agree	6	4.76	10	4.9	
		Always	12	9.52	22	10.78	
		Very often	37	29.37	90	44.12	
	D2	Sometimes	44	34.92	59	28.92	9.329	0.053
		Rarely	31	24.6	31	15.2	
		Never	2	1.59	2	0.98	
2.3 Testing		Always	13	10.32	14	6.86	
		Very often	31	24.6	52	25.49	
	D3	Sometimes	46	36.51	62	30.39	4.442	0.35
		Rarely	30	23.81	58	28.43	
		Never	6	4.76	18	8.82	
		Strongly Disagree	3	2.38	8	3.92	
		Disagree	30	23.81	42	20.59	
2.4 Analyzing and Synthesizing	E2	Neutral	44	34.92	77	37.75	1.128	0.89
		Agree	46	36.51	72	35.29	
		Strongly Agree	3	2.38	5	2.45	
		Always	10	7.94	11	5.39	
		Very often	41	32.54	72	35.29	
2.5 Collaborating and Discussing	F1	Sometimes	48	38.1	87	42.65	2.916	0.572
		Rarely	21	16.67	29	14.22	
		Never	6	4.76	5	2.45	

		Always	14	11.11	12	5.88		
		Very often	36	28.57	57	27.94		
	F2	Sometimes	52	41.27	81	39.71	5.141	0.273
		Rarely	22	17.46	46	22.55		
		Never	2	1.59	8	3.92		
		Always	13	10.32	16	7.84		
		Very often	36	28.57	55	26.96		
	F3	Sometimes	42	33.33	81	39.71	2.542	0.637
		Rarely	31	24.6	49	24.02		
		Never	4	3.17	3	1.47		
		Always	17	13.49	15	7.35		
		Very often	48	38.1	73	35.78		
	G1	Sometimes	32	25.4	78	38.24	7.785	0.1
		Rarely	25	19.84	32	15.69		
		Never	4	3.17	6	2.94		
		Strongly Disagree	6	4.76	4	1.96		
		Disagree	20	15.87	22	10.78		
2.6 Understanding and Applying	G2	Neutral	37	29.37	86	42.16	9.144	0.058
		Agree	56	44.44	87	42.65		
		Strongly Agree	7	5.56	5	2.45		
		Definitely	7	5.56	15	7.35		
		Very Probably	37	29.37	69	33.82		
	G3	Possibly	68	53.97	99	48.53	1.555	0.817
		Probably Not	12	9.52	19	9.31		
		Definitely Not	2	1.59	2	0.98		
2.7 Creating and Promoting	H2	Always	14	11.11	20	9.8	3.82	0.431

		Very often	**42**	**33.33**	**83**	**40.69**	
		Sometimes	**47**	**37.3**	**75**	**36.76**	
		Rarely	**18**	**14.29**	**23**	**11.27**	
		Never	**5**	**3.97**	**3**	**1.47**	
	H3	**Providing me opportunities to integrate effective pedagogies**	**18**	**14.29**	**37**	**18.14**	**1.851**	**0.763**
		Assuring my schedule flexibility	**28**	**22.22**	**39**	**19.12**	
		Improving my learning outcomes	**40**	**31.75**	**72**	**35.29**	
		Well-structured and organized information is available for me	**19**	**15.08**	**27**	**13.24**	
		E-learning practices are aligned with courses and field practices	**21**	**16.67**	**29**	**14.22**	

*** p<0.05 ** p<0.01**

Question A5 (whether participants had previous experience teaching English in schools or tutorial centers before they enrolled at university) showed a level of significance of 0.01 in relation to participants' PK about implementing the e-learning practice of *Searching and Selecting* (Question B1, $\chi^2 = 21.65$, $p = 0.00 < 0.01$). Among all participants' responses in part two of the questionnaire, the percentage that had not joined workshops or compulsory lessons about e-learning practices for teaching English before they enrolled at university and who opted for *Sometimes* in response to B1 was 47.55%, which was higher than the percentage that had joined workshops or compulsory lessons (24.60%); for participants' TPK about implementing the e-learning practice of *Collaborating and Discussing* (Question R2) of part four of the questionnaire, regarding being able to "provide leadership in helping others to coordinate the use of content, technologies, and teaching approach during field practice" ($\chi^2 = 14.31$, $p = 0.01 < 0.01$), the percentage that had not taught English in schools or tutorial centers pre-university and who chose *Agree* in response to R2 was 52.45%, higher than 40.48%, the percentage that had taught English in schools or tutorial centers pre-university (see Table 26).

Scenario Two: Self-modeling E-learning Practices in Daily Life

In part three of the questionnaire there were four multiple choice questions, and in part four of the questionnaire there were 21 questions. The four multiple choice questions from part three are listed in Table 27, and 18 of the 19 multiple choice and one of the two multiple selection questions from part four are listed in Table 27. Generally

speaking, Question A5 (whether participants had previous experience teaching English in schools or tutorial centers before they enrolled at university) did not show a significant relationship to Questions J1, J2, and J3 ($p > 0.05$), meaning that whether or not participants had pre-university experience of teaching English had the consistent effect of no significant difference in relation to their responses about whether they recap their planned e-learning practices to make themselves more familiar with these practices (Question J1), whether implementation of e-learning practice makes participants more excited and satisfied with their lectures (Question J2) and whether participants believe that implementation of e-learning practices improves their sense of accomplishment (Question J3).

However, Question A5 (whether participants had previous experience teaching English in schools or tutorial centers before they enrolled at university) did show a significant relationship to the responses to Question J4 ($p < 0.05$), meaning that whether or not participants had pre-university experience with teaching English had a consistent and significantly differing influence on their responses about whether implementation of e-learning practices in English language teacher education makes designing teaching content easier for participants (Question J4), (see Table 27).

Table 27. Participants' Pre-university Experience with Teaching English in Schools or Tutorial Centers and Their Responses in Part 3 of the Questionnaire by Chi-Square Test (*N*=330)

Question	Response	Yes, I have		No, I have not			
		n	%	*n*	%	χ^2	*p*
J1	Always	12	9.52	24	10.91	1.167	0.883
	Very often	49	38.89	77	38.18		
	Sometimes	49	38.89	76	37.88		
	Rarely	15	11.9	23	11.52		
	Never	1	0.79	4	1.52		
J2	Strongly Disagree	6	4.76	4	3.03	5.287	0.259
	Disagree	12	9.52	14	7.88		
	Neutral	39	30.95	62	30.61		
	Agree	58	46.03	93	45.76		
	Strongly Agree	11	8.73	31	12.73		
J3	Strongly Disagree	2	1.59	1	0.91	5.238	0.264
	Disagree	20	15.87	18	11.52		
	Neutral	28	22.22	54	24.85		
	Agree	65	51.59	114	54.24		
	Strongly Agree	11	8.73	17	8.48		
J4	Strongly Disagree	7	5.56	4	3.33	10.551	0.032*
	Disagree	16	12.7	15	9.39		
	Neutral	25	19.84	62	26.36		
	Agree	69	54.76	100	51.21		
	Strongly Agree	9	7.14	23	9.7		

*** *p*<0.05 ** *p*<0.01**

Scenario Three: Implementation of E-learning Practices During Field Experience

Part four of the questionnaire, implementation of e-learning practices during field experience, had 21 questions in total, 20 of which were multiple choice questions and one of which was multiple selection. 18 multiple choice questions (Table 28) are listed. Generally speaking, Question A5 (whether participants had previous experience teaching English in schools or tutorial centers before they enrolled at university) did not show a significant relationship to responses to Questions K1, K2, L1, L2, M1, M3,

N3, R3, S1, S2, U1, U2, and U3 ($p > 0.05$), meaning that whether or not participants had pre-university experience teaching English consistently made no significant difference in their responses about participants' PCK and TPK about implementing the e-learning practice of *Searching and Selecting* (Questions K1 and K2), participants' PCK and TPK about implementing the e-learning practice of *Exploring* (Questions L1 and L2), participants' PCK and TCK about implementing the e-learning practice of *Testing* (Questions M1 and M3), participants' TCK about implementing the e-learning practice of *Analyzing and Synthesizing* (Question N3), participants' TCK about implementing the e-learning practice of *Collaborating and Discussing* (Question R3), participants' PCK and TPK about implementing the e-learning practice of *Understanding and Applying* (Questions S1 and S2), and participants' PCK and TCK about implementing the e-learning practice of *Creating and Promoting* (Questions U1, U2, and U3).

In contrast, Question A5 (whether participants had previous experience teaching English in schools or tutorial centers before they enrolled at university) did have a significant effect on participants' responses to Questions L3, M2, N1, N2, R1, R2, and S3 ($p < 0.05$), meaning that Question A5 consistently affected the responses to participants' TCK about implementing the e-learning practice of *Exploring* (Questions L3), participants' TPK about implementing the e-learning practice of *Testing* (Question M2), participants' PCK and TPK about implementing the e-learning practice of *Analyzing and Synthesizing* (Questions N1 and N2), participants' PCK and TPK about

implementing the e-learning practice of *Collaborating and Discussing* (Questions R1 and R2) and participants' TCK about implementing the e-learning practice of *Understanding and Applying* (Question S3).

Table 28. Participants' Pre-university Experience with Teaching English in Schools or Tutorial Centers and Their Responses in Part 4 of the Questionnaire by Chi-Square Test-- Scenario Three (*N*=330)

Type of e-learning practice	Question	Response	Yes, I had		No, I had not		χ^2	*p*
			n	%	*n*	%		
4.1 Searching and Selecting	K1	Always	15	11.9	16	7.84	3.553	0.47
		Very often	48	38.1	75	36.76		
		Sometimes	40	31.75	72	35.29		
		Rarely	23	18.25	38	18.63		
		Never	0	0	1.47	1.47		
	K2	Strongly Disagree	4	3.17	2.45	2.45	4.371	0.358
		Disagree	26	20.63	13.24	13.24		
		Neutral	29	23.02	30.39	30.39		
		Agree	63	50	104	50.98		
		Strongly Agree	4	3.17	6	2.94		
4.2 Exploring	L1	Strongly Disagree	3	2.38	2	0.98	2.849	0.583
		Disagree	17	13.49	20	9.8		
		Neutral	35	27.78	52	25.49		
		Agree	63	50	114	55.88		
		Strongly Agree	8	6.35	16	7.84		
	L2	Always	9	7.14	10	4.9	8.389	0.078
		Very often	41	32.54	75	36.76		
		Sometimes	39	30.95	82	40.2		
		Rarely	36	28.57	34	16.67		

		Never	1	0.79	3	1.47		
		Always	16	12.7	24	11.76		
		Very often	39	30.95	80	39.22		
	L3	Sometimes	34	26.98	74	36.27	14.856	0.005**
		Rarely	30	23.81	21	10.29		
		Never	7	5.56	5	2.45		
		Strongly Disagree	4	3.17	7	3.43		
		Disagree	16	12.7	24	11.76		
	M1	Neutral	40	31.75	61	29.9	8.089	0.088
		Agree	57	45.24	109	53.43		
		Strongly Agree	9	7.14	3	1.47		
		Always	11	8.73	24	11.76		
		Very often	46	36.51	65	31.86		
4.3 Testing	M2	Sometimes	35	27.78	84	41.18	11.028	0.026*
		Rarely	33	26.19	29	14.22		
		Never	1	0.79	2	0.98		
		Strongly Disagree	3	2.38	4	1.96		
		Disagree	17	13.49	20	9.8		
	M3	Neutral	27	21.43	51	25	1.642	0.801
		Agree	68	53.97	108	52.94		
		Strongly Agree	11	8.73	21	10.29		
		Mahara	48	38.1	32	15.69		
		Weebly	17	13.49	30	14.71		
	N1	Blogger	35	27.78	93	45.59	23.004	0.000**
		WordPress	18	14.29	33	16.18		
		Other	8	6.35	16	7.84		

		Always	23	18.25	12	5.88		
		Very often	38	30.16	79	38.73		
	N2	Sometimes	36	28.57	80	39.22	17.322	0.002**
		Rarely	27	21.43	31	15.2		
4.4 Analyzing and Synthesizing		Never	2	1.59	2	0.98		
		Always	16	12.7	16	7.84		
		Very often	43	34.13	63	30.88		
	N3	Sometimes	34	26.98	74	36.27	4.554	0.336
		Rarely	27	21.43	44	21.57		
		Never	6	4.76	7	3.43		
		Always	20	15.87	18	8.82		
		Very often	39	30.95	76	37.25		
	R1	Sometimes	38	30.16	82	40.2	11.982	0.017*
		Rarely	27	21.43	23	11.27		
		Never	2	1.59	5	2.45		
		Strongly Disagree	5	3.97	1	0.49		
4.5 Collaborating and Discussing		Disagree	22	17.46	18	8.82		
	R2	Neutral	38	30.16	69	33.82	14.312	0.006**
		Agree	51	40.48	107	52.45		
		Strongly Agree	10	7.94	9	4.41		
		Always	10	7.94	4	1.96		
		Very often	30	23.81	44	21.57		
	R3	Sometimes	40	31.75	82	40.2	9.236	0.055
		Rarely	41	32.54	61	29.9		
		Never	5	3.97	13	6.37		
	S1	Strongly Disagree	4	3.17	4	1.96	2.975	0.562

		Disagree	**15**	**11.9**	**18**	**8.82**		
		Neutral	**28**	**22.22**	**48**	**23.53**		
		Agree	**68**	**53.97**	**106**	**51.96**		
		Strongly Agree	**11**	**8.73**	**28**	**13.73**		
4.6 Understanding and Applying	**S2**	**Strongly Disagree**	**4**	**3.17**	**3**	**1.47**	**4.649**	**0.325**
		Disagree	**15**	**11.9**	**13**	**6.37**		
		Neutral	**32**	**25.4**	**52**	**25.49**		
		Agree	**67**	**53.17**	**119**	**58.33**		
		Strongly Agree	**8**	**6.35**	**17**	**8.33**		
	S3	**Strongly Disagree**	**2**	**1.59**	**3**	**1.47**	**10.948**	**0.027***
		Disagree	**21**	**16.67**	**14**	**6.86**		
		Neutral	**28**	**22.22**	**43**	**21.08**		
		Agree	**57**	**45.24**	**122**	**59.8**		
		Strongly Agree	**18**	**14.29**	**22**	**10.78**		
4.7Creating and Promoting	**U1**	**Strongly Disagree**	**8**	**6.35**	**7**	**3.43**	**6.542**	**0.162**
		Disagree	**14**	**11.11**	**13**	**6.37**		
		Neutral	**35**	**27.78**	**66**	**32.35**		
		Agree	**60**	**47.62**	**92**	**45.1**		
		Strongly Agree	**9**	**7.14**	**26**	**12.75**		
	U2	**Strongly Disagree**	**2**	**1.59**	**4**	**1.96**	**4.652**	**0.325**
		Disagree	**25**	**19.84**	**24**	**11.76**		
		Neutral	**29**	**23.02**	**44**	**21.57**		
		Agree	**49**	**38.89**	**94**	**46.08**		
		Strongly Agree	**21**	**16.67**	**38**	**18.63**		
		Much Higher	**6**	**4.76**	**7**	**3.43**	**2.893**	**0.576**

	Higher	**58**	**46.03**	**78**	**38.24**
U3	**About the same**	**17**	**13.49**	**31**	**15.2**
	Lower	**41**	**32.54**	**82**	**40.2**
	Much lower	**4**	**3.17**	**6**	**2.94**

*** $p<0.05$ ** $p<0.01$**

Question A5 (whether participants had previous experience teaching English in schools or tutorial centers before they enrolled at university) showed a level of significance of 0.05 in relation to participants' TCK about implementing the e-learning practice of *Understanding and Applying* (Question S3, $\chi^2 = 10.95$, $p = 0.01 < 0.01$). Among all participants' responses in part four of the questionnaire, the percentage that had not joined workshops or compulsory lessons about e-learning practices for teaching English before they enrolled at university and who opted for *Agree* in response to S3 was 59.80%, which was higher than the percentage that had joined workshops or compulsory lessons (45.24%). For participants' PCK about implementing the e-learning practice of *Collaborating and Discussing* (Question R1, $\chi^2 = 11.98$, $p = 0.01 < 0.01$), among all participants' responses in part four of the questionnaire, the percentage that had not joined workshops or compulsory lessons about e-learning practices for teaching English before they enrolled in university and who opted for *Sometimes* in response to R1 was 40.20%, which was higher than the percentage that had joined workshops or compulsory lessons (30.16%); and the percentage that had joined workshops or compulsory lessons about e-learning practices for teaching English before they enrolled in university and who opted for *Rarely* in response to R1 was 21.43%, which was higher than the percentage that had not joined workshops or compulsory lessons (11.27%). For TPK about implementing the e-learning practice of *Testing* (Question M2, $\chi^2 = 11.03$, $p = 0.01 < 0.01$), among all participants' responses in part four of the questionnaire, the percentage that had not joined workshops or compulsory lessons about e-learning practices for teaching English before they enrolled at university and who opted for

Sometimes in response to M2 was 41.18%, which was higher than the percentage that had joined workshops or compulsory lessons (27.78%); and the percentage that had joined workshops or compulsory lessons about e-learning practices for teaching English before they enrolled at university and who opted for *Rarely* in response to M2 was 26.19%, which was higher than 14.22%, the percentage that had not joined workshops or compulsory lessons (see Table 28).

Meanwhile, Question A5 (whether participants had previous experience teaching English in schools or tutorial centers before they enrolled at university) showed a level of significance of 0.01 in relation to participants' TPK about implementing the e-learning practice of *Collaborating and Discussing* (Question R2, $\chi^2 = 14.312$, $p = 0.01 < 0.01$). Among all participants' responses in part four of the questionnaire, the percentage that had not joined workshops or compulsory lessons about e-learning practices for teaching English before they enrolled at university and who opted for *Agree* in response to R2 was 40.48%, which was higher than the percentage that had joined workshops or compulsory lessons (24.60%). For participants' TCK about implementing the e-learning practice of *Exploring* (Questions L3) in part four of the questionnaire, the percentage that had joined workshops or compulsory lessons about e-learning practices for teaching English before they enrolled at university and who opted for *Rarely* in response to L3 was 23.81%, which was higher than 10.29%, the percentage that had not joined workshops or compulsory lessons ($\chi^2 = 14.86$, $p = 0.01 < 0.01$). For participants' TPK about implementing the e-learning practice of *Analyzing*

and Synthesizing (Question N2), the percentage that had joined workshops or compulsory lessons about e-learning practices for teaching English before they enrolled in university and who opted for *Always* in response to N2 was 18.25%, which was higher than the percentage that had not joined workshops or compulsory lessons (5.88%); and the percentage that had not joined workshops or compulsory lessons about e-learning practices for teaching English before they enrolled at university and who opted for *Sometimes* in response to N2 was 39.22%, which was higher than 28.57%, the percentage that had joined workshops or compulsory lessons ($\chi^2 = 17.32$, $p = 0.01 < 0.01$), (see Table 28).

For participants' PCK about implementing the e-learning practice of *Analyzing and Synthesizing* (Question N1), the percentage that had joined workshops or compulsory lessons about e-learning practices for teaching English before they enrolled at university and who opted for *Mahara* in response to N1 was 38.10%, which was higher than the percentage that had not joined workshops or compulsory lessons (15.69%); furthermore, the percentage that had not joined workshops or compulsory lessons about e-learning practices for teaching English before they enrolled at university and who opted for *Blogger* in response to N1 was 45.59%, which was higher than 27.78%, the percentage that had joined workshops or compulsory lessons ($\chi^2 = 23.00$, $p = 0.01 < 0.01$). For participants' TCK about implementing the e-learning practice of *Creating and Promoting* (Question U3), the percentage that had joined workshops or compulsory lessons about e-learning practices for teaching English before they enrolled at

university and who opted for *Higher* in response to U3 was 46.03%, which was higher than the percentage that had not joined workshops or compulsory lessons (38.24%); in addition, the percentage that had not joined workshops or compulsory lessons about e-learning practices for teaching English before they enrolled in university and who opted for *Lower* in response to U3 was 40.2%, which was higher than 32.54%, the percentage that had joined workshops or compulsory lessons ($\chi^2 = 2.893$, $p = 0.576 > 0.01$), (see Table 28).

6.4 The Relationship Between Participants' Pre-university Experience of Field Practice in Any Subject (Question A6) and the Options They Chose in Three Scenarios (Questions in Parts 2 to 4 of Questionnaire)

Scenario One: In-class Training at University

The way in which Question A6 (regarding whether the participants had had field practice experience in any subject before they enrolled at university) influenced participants' choices was analyzed in three parts. The first part examined whether participants had had field practice experience in any subject before they enrolled at university and the effects of that answer on aspects of their in-class training. A total of 179 participants chose *Yes, I have,* and 151 participants chose *No, I have not* in response to Question A6. In part two of the questionnaire, regarding in-class training at university, there were 21 questions in total, 16 of which were multiple choice questions and five of which were multiple selection. In Table 29, 16 multiple choice questions respectively

are listed. Generally speaking, Question A6 did not show a significant relationship to Questions B1, B2, C2, D2, E2, F1, G1, G2, G3, H2, and H3 ($p > 0.05$), meaning that whether participants had field practice experience in any subject before they enrolled at university showed consistently no significant difference in relation to their answers regarding PK and CK about implementing the e-learning practice of *Searching and Selecting* (Questions B1 and Question B2), participants' CK about implementing the e-learning practice of *Exploring* (Question C2), participants' CK about implementing the e-learning practice of *Testing* (Question D2), participants' CK about implementing the e-learning practice of *Analyzing and Synthesizing* (Question E2), participants' PK about implementing the e-learning practice of *Collaborating and Discussing* (Question F1), participants' PK, CK and TK about implementing the e-learning practice of *Understanding and Applying* (Questions G1, G2, and G3), and participants' CK and TK about implementing the e-learning practice of *Creating and Promoting* (Questions H2 and H3).

However, Question A6 (regarding whether the participants had had experience with field practice in any subject before they enrolled at university) did show significance in relation to Questions B3, C1, D3, F2, and F3 ($p < 0.05$), meaning that whether or not participants had field practice experience in any subject before they enrolled at university had a significant influence on responses regarding participants' TK about implementing the e-learning practice of *Searching and Selecting* (Questions B3), participants' PK about implementing the e-learning practice of *Exploring* (Question C1),

participants' TK about implementing the e-learning practice of *Testing* (Question D3) and participants' CK and TK about implementing the e-learning practice of *Collaborating and Discussing* (Questions F2 and F3).

Table 29. Participants' Pre-university Experience with Field Practice in Any Subject and their Responses to Questions in Part 2 of the Questionnaire by Chi-Square Test-- Scenario one (*N*=330)

Type of e-learning practice	Question	Response	Yes, I did		No, I did not		χ^2	*p*
			n	%	*n*	%		
2.1 Searching and Selecting	B1	Always	19	11	7	4.64	8.9	0.063
		Very often	57	32	40	26.49		
		Sometimes	60	34	68	45.03		
		Rarely	38	21	28	18.54		
		Never	5	2.8	8	5.3		
	B2	Always	27	15	12	7.95	9.1	0.059
		Very often	63	35	52	34.44		
		Sometimes	56	31	61	40.4		
		Rarely	31	17	20	13.25		
		Never	2	1.1	6	3.97		
	B3	Always	21	12	8	5.3	13	0.011*
		Very often	58	32	32	21.19		
		Sometimes	68	38	75	49.67		
		Rarely	29	16	29	19.21		
		Never	3	1.7	7	4.64		
2.2 Exploring	C1	Always	19	11	6	3.97	11	0.029*
		Very often	58	32	39	5.83		
		Sometimes	62	35	65	43.05		
		Rarely	37	21	33	21.85		
		Never	3	1.7	8	5.3		

		Strongly Disagree	5	2.8	1	0.66		
		Disagree	22	12	21	13.91		
	C2	Neutral	46	26	45	29.8	5.5	0.241
		Agree	94	53	80	52.98		
		Strongly Agree	12	6.7	4	2.65		
		Always	20	11	14	9.27		
		Very often	62	35	65	43.05		
	D2	Sometimes	56	31	47	31.13	3.7	0.449
		Rarely	39	22	23	15.23		
		Never	2	1.1	2	1.32		
2.3 Testing		Always	21	12	6	3.97		
		Very often	51	28	32	21.19		
	D3	Sometimes	62	35	46	30.46	18	0.001**
		Rarely	37	21	51	33.77		
		Never	8	4.5	16	10.6		
		Strongly Disagree	10	5.6	1	0.66		
		Disagree	44	25	28	18.54		
2.4 Analyzing and Synthesizing	E2	Neutral	60	34	61	40.4	9.4	0.051
		Agree	62	35	56	37.09		
		Strongly Agree	3	1.7	5	3.31		
		Always	13	7.3	8	5.3		
		Very often	64	36	49	32.45		
2.5 Collaborating and Discussing	F1	Sometimes	68	38	67	44.37	2	0.742
		Rarely	27	15	23	15.23		
		Never	7	3.9	4	2.65		
	F2	Always	16	8.9	10	6.62	10	0.040*

		Very often	56	31	37	24.5		
		Sometimes	71	40	62	41.06		
		Rarely	35	20	33	21.85		
		Never	1	0.6	9	5.96		
	F3	Always	19	11	10	6.62	9.8	0.043*
		Very often	59	33	32	21.19		
		Sometimes	56	31	67	44.37		
		Rarely	42	23	38	25.17		
		Never	3	1.7	4	2.65		
	G1	Always	21	12	11	7.28	2.9	0.57
		Very often	61	34	60	39.74		
		Sometimes	58	32	52	34.44		
		Rarely	33	18	24	15.89		
		Never	6	3.4	4	2.65		
2.6 Understanding and Applying	G2	Strongly Disagree	8	4.5	2	1.32	6.4	0.171
		Disagree	28	16	14	9.27		
		Neutral	63	35	60	39.74		
		Agree	73	41	70	46.36		
		Strongly Agree	7	3.9	5	3.31		
	G3	Definitely	14	7.8	8	5.3	4.5	0.347
		Very Probably	55	31	51	33.77		
		Possibly	89	50	78	51.66		
		Probably Not	17	9.5	14	9.27		
		Definitely Not	4	2.2	0	0		
	H2	Always	21	12	13	8.61	5	0.286

		Very often	**67**	**37**	**58**	**38.41**	
		Sometimes	**64**	**36**	**58**	**38.41**	
		Rarely	**20**	**11**	**21**	**13.91**	
		Never	**7**	**3.9**	**1**	**0.66**	
2.7 Creating and Promoting	**H 3**	**Providing me opportunities to integrate effective pedagogies**	**26**	**19**	**55**	**16.67**	**3.4**	**0.496**
		Assuring my schedule flexibility	**36**	**21**	**67**	**20.3**	
		Improving my learning outcomes	**58**	**36**	**112**	**33.94**	
		Well-structured and organized information is available for me	**28**	**12**	**46**	**13.94**	
		E-learning practices are aligned with courses and field practices	**31**	**13**	**50**	**15.15**	

*** p<0.05 ** p<0.01**

Question A6 (regarding whether participants had had field practice experience in any subject before they enrolled at university) showed a level of significance of 0.05 in relation to participants' TK about implementing the e-learning practice of *Searching and Selecting* (Questions B3, $\chi^2 = 13.00$, $p = 0.01 < 0.05$). Among all participants' responses in part two of the questionnaire, the percentage of participants who had field practice in any subject before they enrolled at university and who opted for *Very often* in response to participants' TK about implementing the e-learning practice of *Searching and Selecting* (Questions B3), was 32.40%, which is higher than the percentage that had no field practice in any subject (21.19%); the percentage of participants who did not have field practice in any subject prior to enrolling at university and who chose *Sometimes* in response to participants' TK about implementing the e-learning practice of *Searching and Selecting* (Questions B3), was 49.67%, higher than the percentage that did have previous field practice (37.99%). For participants' TK about implementing the e-learning practice of *Testing* (Question D3), regarding having the ability to use website editors to test and modify web pages in their English teaching, the percentage that had no previous field practice and who chose *Rarely* in response to D3 was 33.77%, clearly much higher than the percentage that did have such field experience and *Rarely* used website editors (20.67%). For participants' CK and TK about implementing the e-learning practice of *Collaborating and Discussing* (Questions F2 and F3), regarding how often "I have had sufficient opportunities to work with different technologies for e-learning practice in English learning and teaching" ($\chi^2 = 9.83$, $p = 0.04 < 0.05$), the percentage of participants who had pre-university field practice in any subject and who

opted for *Very often* in response to F3 was 32.96%, higher than the percentage that had no prior field practice (21.19%). In addition, the percentage that had no prior field practice and who chose *Sometimes* in response to F3 was 44.37%, higher than 31.28%, the percentage that did have pre-university field practice (see Table 29).

Scenario Two: Self-modeling E-learning Practices in Daily Life

Part three of the questionnaire had four multiple choice questions. Generally speaking, Question A6 (regarding whether the participants had had field practice experience in any subject before they enrolled at university) did not show a significant relationship to Questions J1, J2, J3, and J4 ($p > 0.05$) meaning that Question A6 consistently had no significant influence on the participants' responses to questions about whether participants recap their planned e-learning practices to make themselves more familiar with these practice (Question J1), whether implementation of e-learning practices makes participants more excited and satisfied with their lectures (Question J2), whether participants believe that implementation of e-learning practices improves their sense of accomplishment (Question J3), and whether implementation of e-learning practices in English language teacher education makes designing teaching content easier (Question J4), (see Table 30).

Table 30. Participants' Pre-university Experience with Field Practice in Any Subject and Their Responses to Part 3 of the Questionnaire by Chi-Square Test-- Scenario Two (*N*=330)

Question A6. Did you have any experience of field practice in any subject before you enrolled in the university?							
Question	**Response**	**Yes, I did**		**No, I did not**		χ^2	***p***
		n	**%**	**n**	**%**		
J1	**Always**	**23**	**12.85**	**13**	**8.61**	**5.912**	**0.206**
	Very often	**73**	**40.78**	**53**	**35.1**		
	Sometimes	**61**	**34.08**	**64**	**42.38**		
	Rarely	**21**	**11.73**	**17**	**11.26**		
	Never	**1**	**0.56**	**4**	**2.65**		
J2	**Strongly Disagree**	**8**	**4.47**	**2**	**1.32**	**5.517**	**0.238**
	Disagree	**16**	**8.94**	**10**	**6.62**		
	Neutral	**59**	**32.96**	**42**	**27.81**		
	Agree	**75**	**41.9**	**76**	**50.33**		
	Strongly Agree	**21**	**11.73**	**21**	**13.91**		
J3	**Strongly Disagree**	**3**	**1.68**	**0**	**0**	**8.282**	**0.082**
	Disagree	**26**	**14.53**	**12**	**7.95**		
	Neutral	**48**	**26.82**	**34**	**22.52**		
	Agree	**88**	**49.16**	**91**	**60.26**		
	Strongly Agree	**14**	**7.82**	**14**	**9.27**		
J4	**Strongly Disagree**	**7**	**3.91**	**4**	**2.65**	**5.367**	**0.252**
	Disagree	**22**	**12.29**	**9**	**5.96**		
	Neutral	**42**	**23.46**	**45**	**29.8**		
	Agree	**92**	**51.4**	**77**	**50.99**		
	Strongly Agree	**16**	**8.94**	**16**	**10.6**		

*** *p*<0.05 ** *p*<0.01**

Scenario Three: Implementation of E-learning Practices During Field Experience

Part four of the questionnaire regarding implementation of e-learning practices during field experience, had 21 questions in total, with 20 multiple choice questions and one multiple selection. In Tables 31, 20 multiple choice questions are listed. Generally speaking, Question A6 (regarding whether participants had had field practice experience in any subject before they enrolled at university) did not show a significant

relationship to Questions K1, L1, L2, M1, M2, M3, R1, S1, S2, S3, U1, and U2 ($p > 0.05$), meaning that whether or not participants had field practice experience in any subject before they enrolled at university had consistently no significant difference in relation to the responses to participants' PCK about implementing the e-learning practice of *Searching and Selecting* (Questions K1), participants' PCK and TPK about implementation of the e-learning practice of *Exploring* (Questions L1 and L2), participants' PCK, TPK and TCK about implementing the e-learning practice of *Testing* (Questions M1, M2, and M3), participants' PCK about implementing the e-learning practice of *Collaborating and Discussing* (Question R1), participants' PCK and TCK about implementing the e-learning practice of *Understanding and Applying* (Questions S1, S2, and S3), and participants' PCK and TPK about implementing the e-learning practice of *Creating and Promoting* (Questions U1 and U2) ($p > 0.05$).

However, Question A6 did show significance in relation to Questions K2, L3, N1, N2, N3, R2, R3, and U3 ($p < 0.05$), meaning that whether or not participants had field practice experience in any subject before they enrolled at university did have a consistent and significant influence on the responses regarding participants' TPK about the e-learning practice of *Searching and Selecting* (Questions K2), participants' TCK about the e-learning practice of *Exploring* (Question L3), participants' PCK, TCK and TPK about implementing the e-learning practice of *Analyzing and Synthesizing* (Questions N1, N2, and N3), participants' TPK and TCK about implementing the e-learning practice of *Collaborating and Discussing* (Questions R2 and R3), and

participants' TCK about implementing the e-learning practice of *Creating and Promoting* (Question U3).

Table 31. Participants' Pre-university Experience with Field Practice in Any Subject and Their Responses in Part 4 of the Questionnaire by Chi-Square Test-- Scenario Three (N=330)

Type of e-learning practice	Question	Response	Yes, I did		No, I did not		X^2	*p*
			n	%	*n*	%		
4.1 Searching and Selecting	K1	Always	16	8.94	15	9.93	4.881	0.3
		Very often	73	40.78	50	33.11		
		Sometimes	52	29.05	60	39.74		
		Rarely	36	20.11	25	16.56		
		Never	2	1.12	1	0.66		
	K2	Strongly Disagree	7	3.91	2	1.32	10.503	0.033*
		Disagree	37	20.67	16	10.6		
		Neutral	44	24.58	47	31.13		
		Agree	84	46.93	83	54.97		
		Strongly Agree	7	3.91	3	1.99		
4.2 Exploring	L1	Strongly Disagree	4	2.23	1	0.66	2.842	0.585
		Disagree	23	12.85	14	9.27		
		Neutral	48	26.82	39	25.83		
		Agree	92	51.4	85	56.29		
		Strongly Agree	12	6.7	12	7.95		
	L2	Always	12	6.7	7	4.64	5.076	0.28
		Very often	61	34.08	55	36.42		
		Sometimes	59	32.96	62	41.06		
		Rarely	45	25.14	25	16.56		

		Never	2	1.12	2	1.32	
		Always	26	14.53	14	9.27	
		Very often	61	34.08	58	38.41	
	L3	Sometimes	48	26.82	60	39.74	12.705	0.013*
		Rarely	36	20.11	15	9.93	
		Never	8	4.47	4	2.65	
		Strongly Disagree	7	3.91	4	2.65	
		Disagree	21	11.73	19	12.58	
	M1	Neutral	53	29.61	48	31.79	4.76	0.313
		Agree	88	49.16	78	51.66	
		Strongly Agree	10	5.59	2	1.32	
		Always	18	10.06	17	11.26	
		Very often	52	29.05	59	39.07	
4.3 Testing	M2	Sometimes	67	37.43	52	34.44	7.166	0.127
		Rarely	39	21.79	23	15.23	
		Never	3	1.68	0	0	
		Strongly Disagree	4	2.2	3	1.99	
		Disagree	24	13.41	13	8.61	
	M3	Neutral	44	24.58	34	22.52	2.828	0.587
		Agree	92	51.4	84	55.63	
		Strongly Agree	15	8.38	17	11.26	
		Mahara	57	31.84	23	15.23	
		Weebly	34	18.99	13	8.61	
	N1	Blogger	57	31.84	71	47.02	25.713	0.000**
		WordPress	20	11.17	31	20.53	

		Other	11	6.15	13	8.61	
		Always	29	16.2	6	3.97	
		Very often	53	29.61	64	42.38	
	N2	Sometimes	62	34.64	54	35.76	16.061	0.003**
		Rarely	32	17.88	26	17.22	
4.4 Analyzing and Synthesizing		Never	3	1.68	1	0.66	
		Always	25	13.97	7	4.64	
		Very often	55	30.73	51	33.77	
	N3	Sometimes	55	30.73	53	35.1	9.946	0.041*
		Rarely	35	19.55	36	23.84	
		Never	9	5.03	4	2.65	
		Always	22	12.29	16	10.6	
		Very often	61	34.08	54	35.76	
	R1	Sometimes	58	32.4	62	41.06	5.577	0.233
		Rarely	33	18.44	17	11.26	
		Never	5	2.79	2	1.32	
		Strongly Disagree	5	2.79	1	0.66	
		Disagree	30	16.76	10	6.62	
4.5 Collaborating and Discussing	R2	Neutral	48	26.82	59	39.07	14.51	0.006**
		Agree	83	46.37	75	49.67	
		Strongly Agree	13	7.26	6	3.97	
		Always	12	6.7	2	1.32	
	R3	Very often	38	21.23	36	23.84	11.199	0.024*
		Sometimes	66	36.87	56	37.09	
		Rarely	58	32.4	44	29.14	

		Never	5	2.79	13	8.61	
	S1	Strongly Disagree	5	2.79	3	1.99	
		Disagree	19	10.61	14	9.27	
		Neutral	39	21.79	37	24.5	0.828	0.935
		Agree	96	53.63	78	51.66	
		Strongly Agree	20	11.17	19	12.58	
4.6 Understanding and Applying	S2	Strongly Disagree	6	3.35	1	0.66	
		Disagree	18	10.06	10	6.62	
		Neutral	51	28.49	33	21.85	7.519	0.111
		Agree	91	50.84	95	62.91	
		Strongly Agree	13	7.26	12	7.95	
	S3	Strongly Disagree	4	2.23	1	0.66	
		Disagree	25	13.97	10	6.62	
		Neutral	38	21.23	33	21.85	6.658	0.155
		Agree	90	50.28	89	58.94	
		Strongly Agree	22	12.29	18	11.92	
	U1	Strongly Disagree	10	5.59	5	3.31	
		Disagree	16	8.94	11	7.28	
		Neutral	54	30.17	47	31.13	2.223	0.695
4.7 Creating and Promoting		Agree	78	43.58	74	49.01	
		Strongly Agree	21	11.73	14	9.27	
	U2	Strongly Disagree	4	2.23	2	1.32	
		Disagree	36	20.11	13	8.61	9.327	0.053
		Neutral	36	20.11	37	24.5	

		Agree	**72**	**40.22**	**71**	**47.02**		
		Strongly Agree	**31**	**17.32**	**28**	**18.54**		
		Much Higher	**8**	**4.47**	**5**	**3.31**		
		Higher	**83**	**46.37**	**53**	**35.1**		
	U3	**About the same**	**21**	**11.73**	**27**	**17.88**	**12.573**	**0.014***
		Lower	**58**	**32.4**	**65**	**43.05**		
		Much lower	**9**	**5.03**	**1**	**0.66**		

*** $p<0.05$ ** $p<0.01$**

Question A6 shows a level of significance of 0.05 in relation to participants' TPK about the e-learning practice of *Searching and Selecting* (Questions K2), "I can select educational technologies to use in my classroom that enhance what I teach and how I teach English and what the students learn" ($\chi^2 = 13.00$, $p = 0.01 < 0.05$). Among all participants' responses in part two of the questionnaire, the percentage that had field practice experience before enrolling at university and who opted for *Disagree* in response to K2 was 20.67%, which is higher than 10.60%, the percentage that had no field practice experience (see Table 34); for participants' TCK about implementing the e-learning practice of *Creating and Promoting* (Question U3), regarding whether "there are differences in *understanding* the functions of e-learning practices compared with *experiencing* activities for teaching English" ($\chi^2 = 12.57$, $p = 0.01 < 0.05$; see Table 35), the percentage that had pre-university field practice experience and who chose *Higher* (differences in *understanding* rather than in *experiencing*) in response to U3 was 46.37%, clearly higher than the percentage that had no pre-university field practice experience in any subject and chose *Higher* for this question (35.10%). In contrast, the percentage that had no field practice experience and who opted for *Lower* in response to U3 was 43.05%, higher than the percentage that did have pre-university field practice experience and chose *Lower* (32.40%). For participants' TCK about the e-learning practice of *Exploring* (Question L3), regarding how often "e-learning practices allow me to interact with students in real time" ($\chi^2 = 12.71$, $p = 0.01 < 0.05$), the percentage that had no pre-university field practice experience and who chose *Sometimes* in response to L3 was 39.74%, higher than the percentage that had had prior field practice

experience (26.82%). Interestingly, the percentage of participants who had pre-university field practice experience and who chose *Rarely* in response to L3 was 20.11%, clearly higher than the percentage that had no prior field practice experience (9.93%).

Question A6 showed a level of significance of 0.01 in relation to participants' TPK about implementing the e-learning practice of *Collaborating and Discussing* (Question R2) regarding whether the participant "can provide leadership in helping others to coordinate the use of content, technologies, and teaching approach during field practice" ($\chi^2 = 14.51$, $p = 0.01 < 0.01$; see Table 34). Among all participants' responses in part four of the questionnaire, the percentage that had no pre-university field practice experience and who opted for *Disagree* in response to R2 was 6.62%, which is lower than the percentage that did have pre-university field practice experience and who opted for R2 (16.76%); the percentage that had no field practice experience and who chose *Neutral* was 39.07%, clearly higher than the percentage with prior field practice experience (26.82%).

For participants' PCK about implementing the e-learning practice of *Analyzing and Synthesizing* (Question N1) regarding "which type of e-Portfolio do [I] use in teaching to keep [my] teaching schedules during field experience" ($\chi^2 = 25.71$, $p = 0.00 < 0.01$; see Table 35), the percentage that had pre-university field practice experience and selected *Mahara* was 31.84%, much higher than the percentage that did not have field practice experience and selected *Mahara* (15.23%); the percentage that had prior field

practice experience and who chose *Weebly* was 18.99%, again much higher than the percentage that did not have previous field practice experience (8.61%); the percentage of participants who had no field practice experience and chose *Blogger* was 47.02%, clearly higher than the percentage that did have field practice experience (31.84%). For participants' TPK about implementing the e-learning practice of *Analyzing and Synthesizing* (Question N2) regarding whether "during field experience, e-learning practices accommodated the preferences of students and teachers" ($\chi^2 = 16.06$, $p = 0.00 < 0.01$; see Table 34), the percentage that had pre-university field practice experience and opted for *Always* in reference to N2 was 16.20%, higher than the percentage that did not have field practice experience and opted for *Always* in reference to N2 (3.97%); the percentage that did not have prior field practice experience and who chose *Very often* for N2 was 42.38%, higher than the percentage that did have field practice experience and chose *Very often* (29.61%).

6.5 Summary

Scenario One: Implementation of E-Learning Practices During University Training

Gender did appear to be significant for Questions B1, B3, E2, F3, and H3 ($p < 0.05$), meaning that the responses of one gender to participants' PK and TK about implementing the e-learning practice of *Searching and Selecting* (Questions B1 and B3), For instance, in Hong Kong, preservice English teachers rarely select some proper e-learning practices from wide range of e-learning practices for English language

teaching and learning. They just based on their habits to use the e-learning tools they often used, such as *Google Apps* and university *Library System*. Meanwhile, in mainland China, some teachers provide some video records of successful cases about teaching English by the implementations of e-learning practices to formulate English pedagogies. When preservice English teachers completed the e-learning practices during their training in the university, participants both in Hong Kong and mainland China know how to solve technical problems. They selected the available solutions firstly, if the problems still existed, they will ask assistant from Department of Information Technology in the schools. Participants' CK about implementing the e-learning practice of *Analyzing and Synthesizing* (Question E2), for example, preservice English teachers think that the English learning skills development with e-learning practices can be of the same effectiveness as the face-to-face lessons. Participants' TK of implementing the e-learning practice of *Collaborating and Discussing* (Question F3) for example, *Kahoot* or *Edpuzzle*. In mainland China, preservice English teachers rarely use only evaluation platform, unless they were invited to participate the online survey via one online survey platform named Wenjuan Xing. Both in Hong Kong and mainland China, preservice English teachers have less chance to discuss the English subject matter like an expert who specialized in technology enhanced English language learning. And participants' TK of implementing the e-learning practice of *Creating and Promoting* (Question H3) were significantly different from those of the other gender. In Hong Kong, preservice English teachers sometimes devote a lot of effort to the e-learning practices in English teaching and learning. Their learning goals are knowledge

they gained during the university which as related to the e-learning practices could improve their learning outcomes. However, in mainland China, preservice English teachers often devote a lot of effort to the e-learning practices in English teaching and learning. Ans their learning goals mainly focus on well-structured and organize information which as related to the e-learning practices is available for them. However, Question A4 (regarding whether participants had joined any workshops or compulsory lessons about e-learning practices before they enrolled at university) had a significant effect on their responses to Questions B1, B2, B3, C1, D2, D3, F1, F2, G1, G3, and H2 ($p < 0.05$), meaning that whether or not participants had attended workshops or compulsory lessons on e-learning practices for teaching English before enrolling at university showed significantly different effects on responses to participants' PK, CK and TK about implementing the e-learning practice of *Searching and Selecting* (Questions B1, B2, and B3), participants' PK about implementing the e-learning practice of *Exploring* (Question C1), for instance, in Hong Kong, preservice English teachers know how to organize and maintain classroom managements when they integrated the e-learning practices for English learning. Similarly, preservice English teachers know how to organize and maintain classroom managements when they integrated the e-learning practices for English learning in mainland China, but they sometimes felt a little bit difficult to handle since based on limited training they received, they felt confused if the solutions are suitable for their students. Participants' CK and TK about implementing the e-learning practice of *Testing* (Questions D2 and D3), For instance, preservice English teachers agree that training courses they attended most

centered-around English subject matter. They rarely use Website Editors to test and modify the web pages about English teaching and learning. Since when preservice English teachers taught English lesson during the field practice, it is not necessary for them to use it. Participants' CK and PK about implementing the e-learning practice of *Collaborating and Discussing* (Questions F1 and F2), participants' TK and PK about implementing the e-learning practice of *Understanding and Applying* (Questions G1 and G3), for example, preservice English teachers sometimes understand English learning with e-learning practices based upon what teachers currently teach both in Hong Kong and mainland China. Based on gained technical skills from the training, preservice English teachers' possibly need to use technology for gaining more experience for teaching English Language for further development of their teaching proficiency. and participants' CK about implementing the e-learning practice of Creating and Promoting (Question H2), (see Figure 36).

On the other hand, participants' response to Question A5 (whether participants had previous experience teaching English in schools or tutorial centers before they enrolled at university) had a significant influence on their responses to Questions B1 and B3 ($p < 0.05$), meaning that whether or not they had pre-university experience teaching English had consistent and significantly different effects on responses to participants' PK and TK about implementing the e-learning practice of *Searching and Selecting* (Questions B1 and B3). However, Question A6 (regarding whether participants had field practice experience in any subject before they enrolled at university) did show

significance in relation to Questions B3, C1, D3, F2, and F3 ($p < 0.05$), meaning that whether or not participants had experience with field practice in any subject before they enrolled at university had a significant influence on responses to participants' TK about implementing the e-learning practice of *Searching and Selecting* (Questions B3), participants' PK about implementing the e-learning practice of *Exploring* (Question C1), participants' TK about implementing the e-learning practice of *Testing* (Question D3), and participants' CK and TK about implementing the e-learning practice of *Collaborating and Discussing* (Questions F2 and F3), (see Figure 36).

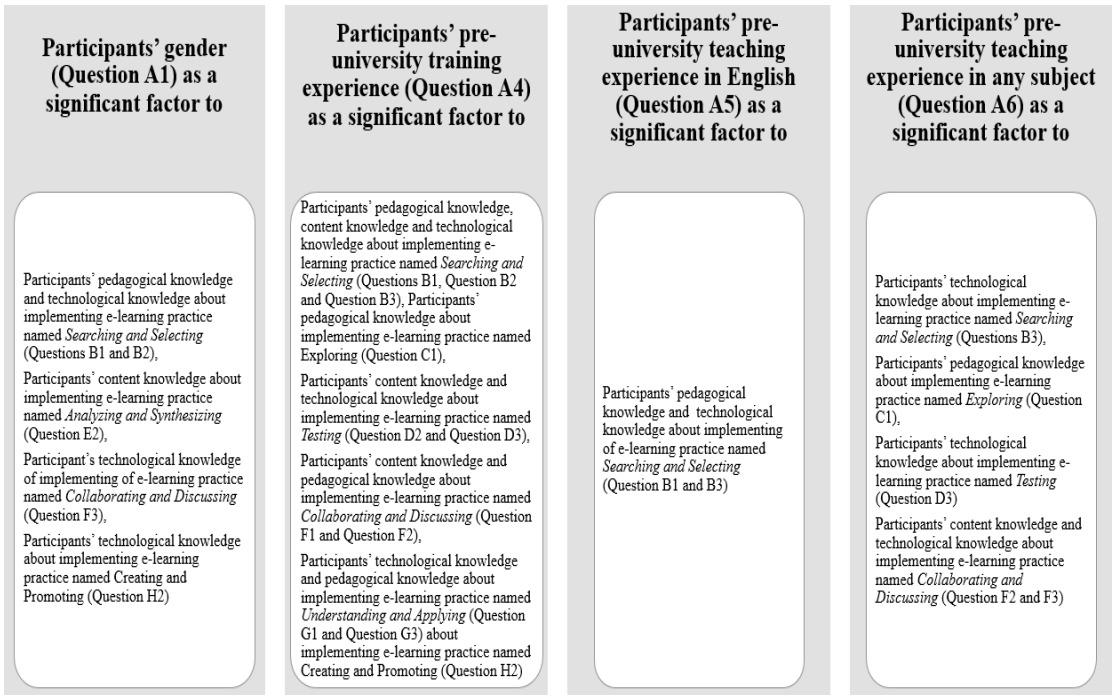

Figure 36. Participants' options for implementation of e-learning practices during their training at university by Chi-Square Test

Scenario Two: Self-Modeling E-Learning Practices in Daily Life

However, the responses regarding implementation of e-learning practice making participants more excited and satisfied with their lectures (Question J2) and implementation of e-learning practices in English language teacher education making the design of teaching content easier (Question J4) differed significantly by gender. However, Question A4 (regarding whether participants had joined any workshops or compulsory lessons about e-learning practices before they enrolled at university) did have a significant relationship with the responses to Question J1 ($p < 0.05$), meaning that whether or not participants had joined workshops or compulsory lessons about e-learning practices for teaching English had a significant effect on the responses regarding whether participants recap their planned e-learning practices to make themselves more familiar with these practices (Question J1). However, Question A5 (whether participants had previous experience teaching English in schools or tutorial centers before they enrolled at university) did show a significant relationship to responses to Question J4 ($p < 0.05$), meaning that whether or not participants had pre-university experience with teaching English had a consistent and significantly differing influence on responses regarding whether the implementation of e-learning practices in English language teacher education makes designing teaching content easier (Question J4), (see Figure 37).

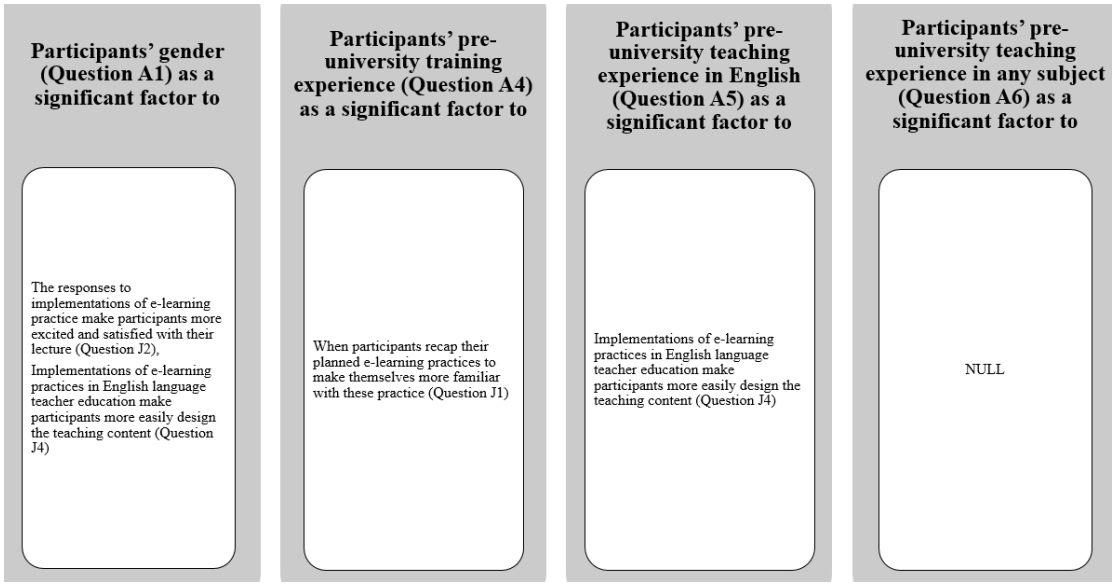

Figure 37. Participants' options for implementations of e-learning Practices during their self-modeling in daily life by Chi-Square Test

Scenarios three: Implementations of E-Learning Practices during the Field Experience

Participants' gender did have a significant impact on the participants' responses to Questions K2, L1, L3, M3, N1, N2, S2, S3, and U3 (p<0.05). Thus, the participants' responses to participants' technological pedagogical knowledge about implementing e-learning practice named *Searching and Selecting* (Questions K2); In detail, In Hong Kong, preservice English teacher rarely felt difficult to select effective teaching pedagogies to guide students thinking and learning in English. However, in mainland China, preservice English teacher often felt difficult to select effective teaching pedagogies to guide students thinking and learning in English. During the field practice in Hong Kong and mainland China, preservice English teacher disagree that they select educational technologies to use in their classroom that enhance what and how they teach

English and what student learn. Since the English proficiency of each students and facilities in schools are unequal, it is difficult to select educational technologies to use in their classroom that enhance what and how they teach English and what student learn. Participants' pedagogical content knowledge and technological content knowledge about implementation of e-learning practice named *Exploring* (Question L1 and Question L3). Both in Hong Kong and mainland China, preservice English teachers have neutral attitude towards that e-learning practices make possible different kind of learning styles to be catered in their field practices. Preservice English teachers often know how to use strategies that combine content, technologies and teaching approaches that they learnt about in their classroom. But in mainland China, preservice English teachers had limited knowledge about how to use strategies that combine content, technologies and teaching approaches that they learnt about in their classroom. Participants' technological content knowledge about implementation of e-learning practice named *Testing* (Question M3), for instance, comparing to the activities that preservice English teachers have experienced in training, there are differences in their field experience. In Hong Kong, during the field practice, if preservice English teachers do not use the e-learning practices, preservice English teachers sometimes show lot of pictures to lower-grade students regarding the content they teach. However, in mainland China, preservice English teachers very often show lot of pictures to lower-grade students regarding the content they teach, no matter they have experienced in training or their field experience. Participants' pedagogical content knowledge and technological pedagogical knowledge about e-learning practice named *Analyzing and*

Synthesizing (Question N1 and Question N2), Specifically, in Hong Kong, during the field practice, preservice English teachers currently use *Sway* or *Mahara* to keep your teaching schedules during your field experiences. In mainland China, preservice English teachers currently use *Blogger* or *Word Documents* to keep your teaching schedules during your field experiences. Both in Hong Kong and mainland China, during the field experiences, preservice English teachers agree that e-learning practices accommodate the preference of students and teachers. Participants' technological pedagogical knowledge and technological content knowledge about implementation of e-learning practice named *Understanding and Applying* (Question S2 and Question S3); For example, when completing the e-learning practice in Hong Kong, preservice English teachers agree that they know about technologies that they can use for understanding and teaching English with e-learning practices for their students. Meanwhile, preservice English teachers feel difficult to teach English that appropriately combine with my understandings for curriculum studies, technologies and teaching approaches both in Hong Kong and mainland China. And participants' technological content knowledge about e-learning practice named *Creating and Promoting* (Question U3) differed significantly by gender. For instance, During the field practices, preservice English teachers disagree that e-learning practices ease the process of their teaching in Hong Kong. Since based on the teaching content and holistic teaching environment, they need amount of time to prepare the lessons by different e-learning tools. (See Figure 38)

However, Question A4 did show a significant relation to Questions K1, L2, N3, R1, R2, and U2 (p<0.05), meaning that whether or not the participants had previously joined e-learning workshops or lessons showed consistent and significantly different relationships to their responses to participant' pedagogical content knowledge about implementing of e-learning practice named *Searching and Selecting* (Questions K1), participant' technological pedagogical knowledge about implementing of e-learning practice named *Exploring* (Question L2), participant' technological content knowledge about implementing of e-learning practice named *Analyzing and Synthesizing* (Question N3), participant' pedagogical content knowledge and technological pedagogical knowledge about implementing of e-learning practice named *Collaborating and Discussing* (Question R1 and Question R2), for example, In Hong Kong, preservice English teachers agree that online English teaching and learning discussions are generally intellectually stimulating and inspiring for their student. However, in mainland China, preservice English teachers have very limited opportunities to use online learning discussion forum. and participant' technological pedagogical knowledge about implementing of e-learning practice named *Creating and Promoting* (Question U2). (See Figure 38)

In contrast, Question A5 (whether participants had previous experience teaching English in schools or tutorial centers before they enrolled in the university) did have a significant effect on participants' responses to Questions L3, M2, N1, N2, R1, R2, and S3 (p<0.05), meaning that Question A5 consistently affected the responses to

participant' technological content knowledge about implementing of e-learning practice named *Exploring* (Questions L3), participant' technological pedagogical knowledge about implementing of e-learning practice named *Testing* (Question M2), participant' pedagogical content knowledge and technological pedagogical knowledge about implementing of e-learning practice named *Analyzing and Synthesizing* (Question N1 and Question N2), participant' pedagogical content knowledge and technological pedagogical knowledge about implementing of e-learning practice named *Collaborating and Discussing* (Question R1 and Question R2) and participant' technological content knowledge about implementing of e-learning practice named *Understanding and Applying* (Question S3). However, Question A6 did show significance in relation to Questions K2, L3, N1, N2, N3, R2, R3, and U3 (p<0.05), meaning that whether or not the participants had experience with field practice in any subject before they enrolled in the university did have a consistent and significant influence on their responses to participants' technological pedagogical knowledge about e-learning practice named *Searching and Selecting* (Questions K2), participants' technological content knowledge about e-learning practice named *Exploring* (Question L3), participant' pedagogical content knowledge, technological content knowledge and technological pedagogical knowledge about implementing of e-learning practice named *Analyzing and Synthesizing* (Question N1, Question N2 and Question N3), participants' technological pedagogical knowledge and technological content knowledge about implementing of e-learning practice named Collaborating and Discussing (Question R2 and Question R3) and participants' technological content knowledge about

implementing of e-learning practice named *Creating and Promoting* (Question U3).

(See Figure 38)

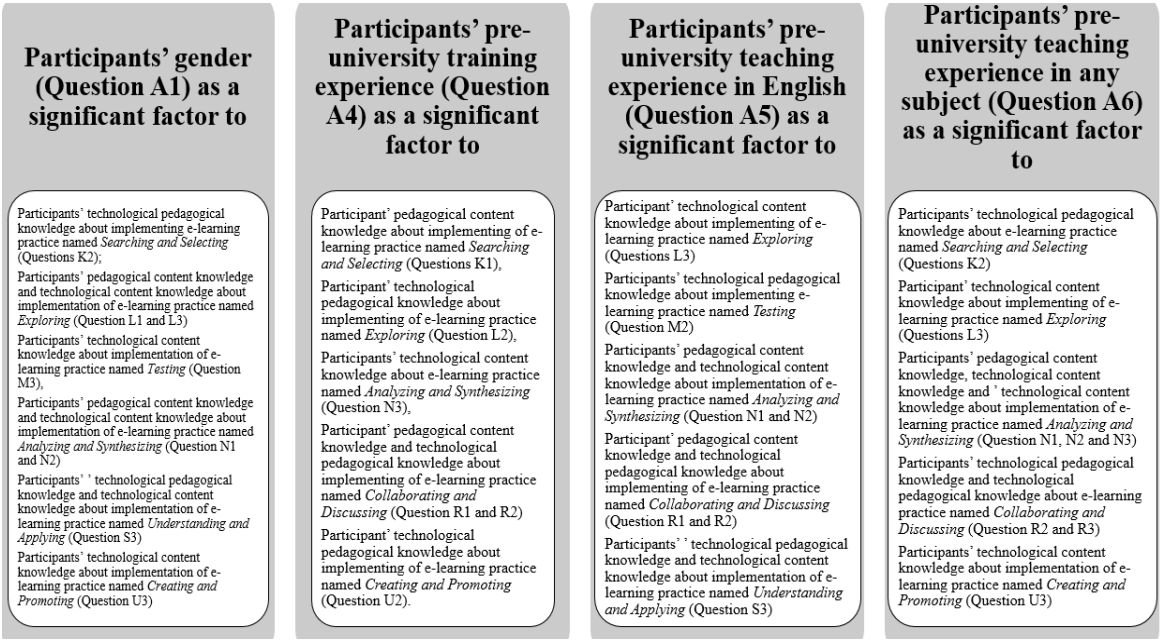

Figure 38. Participants' options for implementations of e-learning Practices during their field practice by Chi-Square Test

Chapter 7: Comparing in Terms of The Situations of Hong Kong And of Mainland China

To review, in Chapter 5 the findings of the first two stages of analysis were presented: stage one tested the reliability and validity of the data, and stage two presented results from the general situations covered by the four parts of the questionnaire. Chapter 6 looked at the relationships of the four different factors and the participants' answers throughout Chi-square Test. This chapter includes three stages of analysis, which are:

1) The Fourth Stage of Analysis

- The first substage

The fourth stage of analysis is comparing in terms of the situations of Hong Kong and mainland China by four substages. The first substage focuses on discussing the results of the Chi-Squared test to retest the data that were significant in previous tests in three different scenarios again with the goal now of differentiating the situation in Hong Kong from that in Mainland China.

- The second substage

The second substage is using the Chi-Squared test to test the data that were ***NOT*** significant in previous tests in three different scenarios again with the goal now of differentiating the situation in Hong Kong from that in Mainland China. The purpose of the second substage reversely tests if the current study location and nationality have

influence in three different scenarios again with the goal now of differentiating the situation in Hong Kong from that in Mainland China.

2) The Fifth Stage of Analysis

The fifth stage is analyzing the collected interview data from sixteen selected participants. In order to learn the reasons why participants implemented the specific e-learning practices they used during their field practice and why they gave the answers they did in the questionnaire.

3) The Sixth Stage of Analysis

The sixth stage is analyzing the collected weekly diaries from sixteen selected participants. In order to double-check if the situations of implemented the specific e-learning practices they used during their field practice were similar as they gave the answers they did in the questionnaire and interview.

To recap, in the first test, which was the Chi-Square Test data and was discussed in Chapter 6, the participants' gender (Question A1) showed a significant difference in relation to Questions B1, B3, E2, F3, H3, J2, J4, K2, L1, L3, M3, N1, N2, S2, S3, and U3. Participants' pre-university teaching experience (Question 4) showed a significant difference in relation to Questions B1, B2, B3, C1, D2, D3, F1, F2, G1, G3, H2, J1, K1, L2, N3, R1, R2 and U2. Participants' pre-university teaching English experience (Question 5) showed a significant difference in relation to Question B1, B3, J4, L3, M2,

N1, N2, R1, R2, and S3. The participants' pre-university field experience in any subject (Question A6) showed a significant difference in relation to Questions B3, C1, D3, F2, F3, K2, L3, N1, N2, N3, R2, R3 and U3. This chapter presents the fifth stage of analysis, in which all of the questions that had shown significance earlier in relation to the four aforementioned factors (A1, A4, A5, and A6) were retested for their relationship with Question A2 as the factors.

7.1 The Fourth Stage of Analysis -Chi-Squared Test

1) The first substage

In Section 7.1, above, how Question A2, "Where are you from and where are you currently studying?" was used as a factor in a variance analysis conducted to retest the questions that had shown significance in earlier tests (see Chapters 6) with regarding to Question A1, Question A4, Question A5, and/or Question A6, which are

- First Factor: Participant' Gender (Question A1)
- Second factor: participants' pre-university Training Experience (Question A4)
- Third factors: participants' previous teaching experiences in English (Question A5)
- Fourth factor: participants' previous field practice in any subjects (Question A6)

with the retesting aiming to differentiate the situations in Hong Kong and Mainland China. In this section, we will discuss the results of using the Chi-squared test to retest the data that were significant in previous tests in three different scenarios again with the goal now of differentiating the situation in Hong Kong from that in Mainland China.

Three scenarios are

1) during their training in the university (Questions in the Part 2 of questionnaire),
2) improvements in the daily life (Questions in the Part 3 of questionnaire) and
3) during their field practice (Questions in the Part 4 of questionnaire).

Scenario One: The In-Classroom Training Period

Based on the results of compare scenario one in Hong Kong and mainland China by Chi-Square test through the responses to question A2 (see Table 32), Question A2 did show significance in relation to Question B1, Question B2, Question C1, Question D2, Question E2, Question F2, Question G1, Question G3, Question H2 and Question H3 (p<0.05), meaning that Question A2 differentiated in relation to participants' pedagogical knowledge and content knowledge about implementing e-learning practice named *Searching and Selecting* (Question B1 and Question B2), participants' pedagogical knowledge about implementing e-learning practice named *Exploring* (Question C1), participants' content knowledge about implementing e-learning practice named *Testing* (Question D2), participants' content knowledge about implementing e-learning practice named *Analyzing and Synthesizing* (Question E2), participants' pedagogical knowledge and technological knowledge about implementing e-learning practice named *Understanding and Applying* (Question G1 and Question G3), and participants' content knowledge technological knowledge about implementing e-learning practice named *Creating and Promoting* (Question H2 and Question H3).

Table 32. Compare Scenario One in Hong Kong and Mainland China by Chi-Square Test through the Responses to Question A2 in Relation to Four Different Factors (*N*=330)

Question	Response	HK, HK(N=77)		MC, MC(N=163)		HK, MC(N=2)		MC, HK(N=88)		χ^2	*p*
		n	%	*n*	%	*n*	%	*n*	%		
B1	Always	10	12.99	9	5.52	0	0	7	7.95	42.345	0.000**
	Very often	23	29.87	55	33.74	1	50	18	20.45		
	Sometimes	22	28.57	77	47.24	1	50	28	31.82		
	Rarely	17	22.08	15	9.2	0	0	34	38.64		
	Never	5	6.49	7	4.29	0	0	1	1.14		
B2	Always	12	15.6	22	13.5	1	50	4	4.55	48.05	0.000**
	Very often	28	36.4	71	43.56	1	50	15	17.05		
	Sometimes	26	33.8	52	31.9	0	0	39	44.32		
	Rarely	9	11.7	13	7.98	0	0	29	32.95		
	Never	2	2.6	5	3.07	0	0	1	1.14		
B3	Always	5	6.49	19	11.66	0	0	5	5.68	20.856	0.053
	Very often	30	38.96	36	22.09	2	100	22	25		
	Sometimes	29	37.66	79	48.47	0	0	35	39.77		
	Rarely	12	15.58	24	14.72	0	0	22	25		
	Never	1	1.3	5	3.07	0	0	4	4.55		
C1	Always	5	6.49	19	11.66	0	0	1	1.14	22.9	0.029*
	Very often	23	29.87	55	33.74	1	50	18	20.45		
	Sometimes	27	35.06	56	34.36	1	50	43	48.86		
	Rarely	19	24.68	26	15.95	0	0	25	28.41		

	Never	3	3.9	7	4.29	0	0	1	1.14		
D2	Always	6	7.79	24	14.72	1	50	3	3.41	72.76	0.000**
	Very often	23	29.87	87	53.37	1	50	16	18.18		
	Sometimes	24	31.17	43	26.38	0	0	36	40.91		
	Rarely	22	28.57	8	4.91	0	0	32	36.36		
	Never	2	2.6	1	0.61	0	0	1	1.14		
D3	Always	8	10.39	13	7.98	1	50	5	5.68	9.849	0.629
	Very often	21	27.27	41	25.15	0	0	21	23.86		
	Sometimes	27	35.06	51	31.29	1	50	29	32.95		
	Rarely	16	20.78	44	26.99	0	0	28	31.82		
	Never	5	6.49	14	8.59	0	0	5	5.68		
E2	Strongly Disagree	6	7.79	3	1.84	0	0	2	2.27	24.09	0.020*
	Disagree	27	35.1	26	15.95	1	50	18	20.45		
	Neutral	18	23.4	65	39.88	1	50	37	42.05		
	Agree	25	32.5	63	38.65	0	0	30	34.09		
	Strongly Agree	1	1.3	6	3.68	0	0	1	1.14		
F1	Always	3	3.9	15	9.2	0	0	3	3.41	17.456	0.133
	Very often	29	37.66	59	36.2	1	50	24	27.27		
	Sometimes	28	36.36	67	41.1	1	50	39	44.32		
	Rarely	12	15.58	17	10.43	0	0	21	23.86		
	Never	5	6.49	5	3.07	0	0	1	1.14		
F2	Always	7	9.09	13	7.98	2	100	4	4.55	28.77	0.004**
	Very often	20	25.97	44	26.99	0	0	29	32.95		

	Sometimes	**30**	**38.96**	**69**	**42.33**	**0**	**0**	**34**	**38.64**		
	Rarely	**18**	**23.38**	**30**	**18.4**	**0**	**0**	**20**	**22.73**		
	Never	**2**	**2.6**	**7**	**4.29**	**0**	**0**	**1**	**1.14**		
	Always	**5**	**6.49**	**17**	**10.43**	**0**	**0**	**7**	**7.95**		
	Very often	**24**	**31.17**	**49**	**30.06**	**2**	**100**	**16**	**18.18**		
F3	**Sometimes**	**25**	**32.47**	**60**	**36.81**	**0**	**0**	**38**	**43.18**	**15.456**	**0.217**
	Rarely	**20**	**25.97**	**36**	**22.09**	**0**	**0**	**24**	**27.27**		
	Never	**3**	**3.9**	**1**	**0.61**	**0**	**0**	**3**	**3.41**		
	Always	**6**	**7.79**	**23**	**14.11**	**1**	**50**	**2**	**2.27**		
	Very often	**22**	**28.57**	**68**	**41.72**	**0**	**0**	**31**	**35.23**		
G1	**Sometimes**	**24**	**31.17**	**52**	**31.9**	**1**	**50**	**33**	**37.5**	**33.09**	**0.001****
	Rarely	**19**	**24.68**	**17**	**10.43**	**0**	**0**	**21**	**23.86**		
	Never	**6**	**7.79**	**3**	**1.84**	**0**	**0**	**1**	**1.14**		
	Definitely	**2**	**2.6**	**17**	**10.43**	**1**	**50**	**2**	**2.27**		
	Very Probably	**22**	**28.6**	**66**	**40.49**	**1**	**50**	**17**	**19.32**		
G3	**Possibly**	**36**	**46.8**	**72**	**44.17**	**0**	**0**	**59**	**67.05**	**46.92**	**0.000****
	Probably Not	**14**	**18.2**	**7**	**4.29**	**0**	**0**	**10**	**11.36**		
	Definitely Not	**3**	**3.9**	**1**	**0.61**	**0**	**0**	**0**	**0**		
	Always	**7**	**9.09**	**24**	**14.72**	**1**	**50**	**2**	**2.27**		
	Very often	**26**	**33.77**	**81**	**49.69**	**1**	**50**	**17**	**19.32**		
H2	**Sometimes**	**32**	**41.56**	**47**	**28.83**	**0**	**0**	**43**	**48.86**	**57.72**	**0.000****
	Rarely	**8**	**10.39**	**10**	**6.13**	**0**	**0**	**23**	**26.14**		
	Never	**4**	**5.19**	**1**	**0.61**	**0**	**0**	**3**	**3.41**		
H3	**Providing me opportunities**	**8**	**10.39**	**40**	**24.54**	**0**	**0**	**7**	**7.95**	**27.388**	**0.007****

to integrate effective pedagogies								
Assuring my schedule flexibility	**20**	**25.97**	**27**	**16.56**	**0**	**0**	**20**	**22.73**
Improving my learning outcomes	**29**	**37.66**	**57**	**34.97**	**1**	**50**	**25**	**28.41**
Well-structured and organized information is available for me	**12**	**15.58**	**19**	**11.66**	**1**	**50**	**14**	**15.91**
E-learning practices are aligned with courses and field practices	**8**	**10.39**	**20**	**12.27**	**0**	**0**	**22**	**25**

*** $p<0.05$ ** $p<0.01$**

Obviously, from Table 32, Question A2 presented a significance level of 0.01 in relation to Question B1 (χ^2=42.35, P=0.00<0.01). According to the difference in percentage comparison, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Very often* was 50.00%, which is significantly higher than the average percentage of 29.39%. The percentage of participants coming from Mainland China and studying in Hong Kong who chose *Rarely* was 20.00%. Question A2 had a significance level of 0.01 in relation to Question B2 (χ^2=48.05, p=0.00<0.01). According to the difference in percentage comparison, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Always* was 50.00%, which is significantly higher than the average percentage of 11.82%. Question A2 presented a significance level of 0.05 in relation to Question C1 (χ^2=22.90, p=0.03<0.05). According to the difference in percentage comparison, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Very often* was 50.00%, which is significantly higher than the average percentage of 29.39%. Question A2 presented a significance level of 0.05 in relation to Question D2 (χ^2=72.76, p=0.00<0.01). According to the difference in percentage comparison, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Always* was 50.00%, which is significantly higher than the average percentage of 10.30%. Question A2 presented a significance level of 0.05 in relation to Question G1 (χ^2=33.09, p=0.00<0.01). According to the difference in percentage comparison, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Always* was 50.00%, which is significantly higher than the average

percentage of 33.33%. Question A2 presented a significance level of 0.05 in relation to Question G3 (χ^2=46.92, p=0.00<0.01). According to the difference in percentage comparison, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Very Probably* was 50.00%, which is significantly higher than the average percentage of 32.12%. Question A2 presented a significance level of 0.05 in relation to Question H2 (χ^2=57.72, p=0.00<0.01). According to the difference in percentage comparison, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Always* was 50.00%, which is significantly higher than the average percentage of 10.30%. Question A2 showed a significance level of 0.05 in relation to participants' content knowledge about implementing e-learning practice named *Analyzing and Synthesizing* (Question E2, χ^2=24.09, p=0.02<0.05). Question A2 presented a significance level of 0.01 in relation to Question H3 (χ^2=27.39, P=0.00<0.01). According to the difference in percentage comparison, the percentage of participants coming from Hong Kong and studying in Mainland China who chose Improving my learning outcomes was 50.00%, which is significantly higher than the average percentage of 33.94%. The percentage of participants coming from Hong Kong and studying in Mainland China who chose Well-structured and organized information is available for me was 50.00%, which is significantly higher than the average percentage of 13.94%.

Scenario Two: Self-Modeling E-Learning Practices in Daily Life

Based on the results of compare scenario two in Hong Kong and mainland China by

chi-square test through the responses to question A2, Question A2 did show significance in relation to Question J1, Question J2 and Question J4, meaning that Question A2 differentiated the responses to participants' technological pedagogical and content knowledge when participants recap their planned e-learning practices to make themselves more familiar with these practice (Question J1), when participants implement e-learning practice make participants more excited and satisfied with their lecture (Question J2), and when participants implement of e-learning practices in English language teacher education make participants more easily design the teaching content (Question J4). (See in Table 33)

Table 33. Compare Scenario Two in Hong Kong and Mainland China by Chi-Square Test through the Responses to Question A2 in Relation to Four Different Factors (*N*=330)

Question	Response	HK, HK		MC, MC		HK, MC		MC, HK		χ^2	*p*
		n	%	*n*	%	*n*	%	*n*	%		
J1	Always	7	9.09	23	14.11	1	50	5	5.68	48.65	0.000**
	Very often	26	33.77	80	49.08	0	0	20	22.73		
	Sometimes	33	42.86	52	31.9	1	50	39	44.32		
	Rarely	10	12.99	5	3.07	0	0	23	26.14		
	Never	1	1.3	3	1.84	0	0	1	1.14		
J2	Strongly Disagree	6	7.79	2	1.23	0	0	2	2.27	35.118	0.000**
	Disagree	11	14.29	8	4.91	0	0	7	7.95		
	Neutral	27	35.06	45	27.61	1	50	28	31.82		
	Agree	27	35.06	76	46.63	0	0	48	54.55		
	Strongly Agree	6	7.79	32	19.63	1	50	3	3.41		
J4	Strongly Disagree	10	12.99	1	0.61	0	0	0	0	75.71	00.000**
	Disagree	18	23.38	6	3.68	0	0	7	7.95		
	Neutral	20	25.97	36	22.09	0	0	31	35.23		
	Agree	26	33.77	95	58.28	1	50	47	53.41		
	Strongly Agree	3	3.9	25	15.34	1	50	3	3.41		

*** *p*<0.05 ** *p*<0.01**

According to the difference in percentage comparison, At the same time, Question A2 presented a significance level of 0.05 in relation to Question J1 (X^2=57.72, p=0.00<0.01). According to the difference in percentage comparison, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Always* was 50.00%, which is significantly higher than the average percentage of 49.08%. The percentage of participants coming from Hong Kong and studying in Mainland China who chose *Disagree* was 50.00%, which is significantly higher than the average percentage of 21.82%. Question A2 presented a significance level of 0.01 in relation to Question J2 (X^2=35.12, p=0.00<0.01). Even so, according to the difference in percentage comparison, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Strongly Agree* was 50.00%, which is significantly higher than the average percentage of 30.61%. (See in Table 33)

Scenario Three: The Period of Field Practice

Based on the results of compare scenario two in Hong Kong and mainland China by chi-square test through the responses to question A2, Question A2 did show significance in relation to Question N1, Question R2, Question L2, and Question K1, Question S2, Question U2, Question U3, Question S3, Question L1, Question N3, Question L3, Question R1, Question M3, Question N2, Question R3, Question K2 and Question M2 (p<0.05), meaning that that Question A2 differentiated in relation to the responses to participants' technological content knowledge and technological pedagogical knowledge about implementations of e-learning practice named *Creating and*

Promoting (Question U2 Question U3), participants' technological pedagogical knowledge and technological content knowledge about implementations of e-learning practice named *Collaborating and Discussing* (Question R2 and Question R3), participants' pedagogical content knowledge, technological pedagogical knowledge and technological content knowledge about implementations of e-learning practice named *Exploring* (Question L1, Question L2, and Question L3), participants' pedagogical content knowledge and technological pedagogical knowledge about implementations of e-learning practice named Searching and Selecting (Question K1 and Question K2), participants' technological pedagogical knowledge and technological content knowledge about implementations of e-learning practice named *Testing* (Question M2 and Question M3), participants' pedagogical content knowledge, technological pedagogical knowledge and technological content knowledge named *Analyzing and Synthesizing* (Question N1, Question N2 and Question N3), participant' technological pedagogical knowledge and technological content knowledge about implementations of e-learning practice named *Understanding and Applying* (Question S2 and Question S3). (See in Table 34)

Table 34. Compare Scenario Three in Hong Kong and Mainland China by Chi-square Test through the Responses to Question A2 in Relation to four different factors (*N*=330)

Question	Response	HK, HK(N=77)		MC, MC(N=163)		HK, MC(N=2)		MC, HK(N=88)		X^2	*p*
		n	%	*n*	%	*n*	%	*n*	%		
K1	Always	5	6.49	21	12.88	1	50	4	4.55	31.07	0.002**
	Very often	31	40.26	65	39.88	1	50	26	29.55		
	Sometimes	23	29.87	61	37.42	0	0	28	31.82		
	Rarely	17	22.08	15	9.2	0	0	29	32.95		
	Never	1	1.3	1	0.61	0	0	1	1.14		
K2	Strongly Disagree	7	9.09	2	1.23	0	0	0	0	62.8	0.000**
	Disagree	22	28.57	11	6.75	0	0	20	22.73		
	Neutral	23	29.87	48	29.45	0	0	20	22.73		
	Agree	23	29.87	95	58.28	1	50	48	54.55		
	Strongly Agree	2	2.6	7	4.29	1	50	0	0		
L1	Strongly Disagree	4	5.19	0	0	0	0	1	1.14	55.67	0.000**
	Disagree	23	29.87	7	4.29	0	0	7	7.95		
	Neutral	15	19.48	39	23.93	1	50	32	36.36		
	Agree	30	38.96	101	61.96	1	50	45	51.14		
	Strongly Agree	5	6.49	16	9.82	0	0	3	3.41		
L2	Always	6	7.79	12	7.36	0	0	1	1.14	44.03	0.000**
	Very often	28	36.36	69	42.33	2	100	17	19.32		
	Sometimes	20	25.97	65	39.88	0	0	36	40.91		
	Rarely	21	27.27	17	10.43	0	0	32	36.36		

	Never	**2**	**2.6**	**0**	**0**	**0**	**0**	**2**	**2.27**		
L3	**Always**	**6**	**7.79**	**29**	**17.79**	**2**	**100**	**3**	**3.41**	**69.5**	**0.000****
	Very often	**29**	**37.66**	**69**	**42.33**	**0**	**0**	**21**	**23.86**		
	Sometimes	**18**	**23.38**	**56**	**34.36**	**0**	**0**	**34**	**38.64**		
	Rarely	**17**	**22.08**	**9**	**5.52**	**0**	**0**	**25**	**28.41**		
	Never	**7**	**9.09**	**0**	**0**	**0**	**0**	**5**	**5.68**		
M2	**Always**	**7**	**9.09**	**21**	**12.88**	**1**	**50**	**6**	**6.28**	**21.031**	**0.050***
	Very often	**22**	**28.57**	**60**	**36.81**	**1**	**50**	**28**	**31.28**		
	Sometimes	**26**	**33.77**	**63**	**38.65**	**0**	**0**	**30**	**34.09**		
	Rarely	**20**	**25.97**	**19**	**11.66**	**0**	**0**	**23**	**26.14**		
	Never	**2**	**2.6**	**0**	**0**	**0**	**0**	**1**	**1.14**		
M3	**Strongly Disagree**	**5**	**6.49**	**1**	**0.61**	**0**	**0**	**1**	**1.14**	**56.78**	**0.000****
	Disagree	**19**	**24.68**	**7**	**4.29**	**0**	**0**	**11**	**12.5**		
	Neutral	**24**	**31.17**	**35**	**21.47**	**0**	**0**	**19**	**21.59**		
	Agree	**26**	**33.77**	**94**	**57.67**	**1**	**50**	**55**	**62.5**		
	Strongly Agree	**3**	**3.9**	**26**	**15.95**	**1**	**50**	**2**	**2.27**		
N1	**Mahara**	**23**	**29.87**	**14**	**8.59**	**0**	**0**	**43**	**48.86**	**75.601**	**0.000****
	Weebly	**14**	**18.18**	**26**	**15.95**	**1**	**50**	**6**	**6.82**		
	Blogger	**19**	**24.68**	**89**	**54.6**	**1**	**50**	**19**	**21.59**		
	WordPress	**18**	**23.38**	**23**	**14.11**	**0**	**0**	**10**	**11.36**		
	Other	**3**	**3.9**	**11**	**6.75**	**0**	**0**	**10**	**11.36**		
N2	**Always**	**11**	**14.29**	**11**	**6.75**	**0**	**0**	**13**	**14.77**	**49.85**	**0.000****
	Very often	**16**	**20.78**	**82**	**50.31**	**2**	**100**	**17**	**19.32**		
	Sometimes	**27**	**35.06**	**55**	**33.74**	**0**	**0**	**34**	**38.64**		
	Rarely	**20**	**25.97**	**15**	**9.2**	**0**	**0**	**23**	**26.14**		

	Never	**3**	**3.9**	**0**	**0**	**0**	**0**	**1**	**1.14**		
N3	**Always**	**2**	**2.6**	**21**	**12.88**	**2**	**100**	**7**	**7.95**	**44.088**	**0.000****
	Very often	**28**	**36.36**	**55**	**33.74**	**0**	**0**	**23**	**26.14**		
	Sometimes	**19**	**24.68**	**57**	**34.97**	**0**	**0**	**32**	**36.36**		
	Rarely	**20**	**25.97**	**26**	**15.95**	**0**	**0**	**25**	**28.41**		
	Never	**8**	**10.39**	**4**	**2.45**	**0**	**0**	**1**	**1.14**		
R1	**Always**	**5**	**6.49**	**27**	**16.56**	**0**	**0**	**6**	**6.82**	**49.832**	**0.000****
	Very often	**19**	**24.68**	**67**	**41.1**	**2**	**100**	**27**	**30.68**		
	Sometimes	**31**	**40.26**	**58**	**35.58**	**0**	**0**	**31**	**35.23**		
	Rarely	**16**	**20.78**	**10**	**6.13**	**0**	**0**	**24**	**27.27**		
	Never	**6**	**7.79**	**1**	**0.61**	**0**	**0**	**0**	**0**		
R2	**Strongly Disagree**	**4**	**5.19**	**0**	**0**	**0**	**0**	**2**	**2.27**	**35.37**	**0.000****
	Disagree	**18**	**23.38**	**11**	**6.75**	**0**	**0**	**11**	**12.5**		
	Neutral	**23**	**29.87**	**47**	**28.83**	**0**	**0**	**37**	**42.05**		
	Agree	**26**	**33.77**	**94**	**57.67**	**2**	**100**	**36**	**40.91**		
	Strongly Agree	**6**	**7.79**	**11**	**6.75**	**0**	**0**	**2**	**2.27**		
R3	**Always**	**2**	**2.6**	**10**	**6.13**	**1**	**50**	**1**	**1.14**	**31.27**	**0.002****
	Very often	**17**	**22.08**	**41**	**25.15**	**0**	**0**	**16**	**18.18**		
	Sometimes	**29**	**37.66**	**68**	**41.72**	**1**	**50**	**24**	**27.27**		
	Rarely	**26**	**33.77**	**36**	**22.09**	**0**	**0**	**40**	**45.45**		
	Never	**3**	**3.9**	**8**	**4.91**	**0**	**0**	**7**	**7.95**		
S2	**Strongly Disagree**	**5**	**6.49**	**1**	**0.61**	**0**	**0**	**1**	**1.14**	**40.79**	**0.000****
	Disagree	**12**	**15.58**	**6**	**3.68**	**0**	**0**	**10**	**11.36**		
	Neutral	**24**	**31.17**	**34**	**20.86**	**1**	**50**	**25**	**28.41**		
	Agree	**30**	**38.96**	**105**	**64.42**	**0**	**0**	**51**	**57.95**		

	Strongly Agree	**6**	**7.79**	**17**	**10.43**	**1**	**50**	**1**	**1.14**		
	Strongly Disagree	**2**	**2.6**	**1**	**0.61**	**0**	**0**	**2**	**2.27**		
	Disagree	**18**	**23.38**	**4**	**2.45**	**0**	**0**	**13**	**14.77**		
S3	**Neutral**	**19**	**24.68**	**26**	**15.95**	**1**	**50**	**25**	**28.41**	**47.09**	**0.000****
	Agree	**29**	**37.66**	**107**	**65.64**	**0**	**0**	**43**	**48.86**		
	Strongly Agree	**9**	**11.69**	**25**	**15.34**	**1**	**50**	**5**	**5.68**		
	Strongly Disagree	**3**	**3.9**	**2**	**1.23**	**0**	**0**	**1**	**1.14**		
	Disagree	**22**	**28.57**	**17**	**10.43**	**0**	**0**	**10**	**11.36**		
U2	**Neutral**	**11**	**14.29**	**32**	**19.63**	**0**	**0**	**30**	**34.09**	**44.19**	**0.000****
	Agree	**33**	**42.86**	**67**	**41.1**	**1**	**50**	**42**	**47.73**		
	Strongly Agree	**8**	**10.39**	**45**	**27.61**	**1**	**50**	**5**	**5.68**		
	Much Higher	**4**	**5.19**	**7**	**4.29**	**0**	**0**	**2**	**2.27**		
	Higher	**27**	**35.06**	**67**	**41.1**	**2**	**100**	**40**	**45.45**		
U3	**About the same**	**16**	**20.78**	**25**	**15.34**	**0**	**0**	**7**	**7.95**	**10.727**	**0.552**
	Lower	**27**	**35.06**	**59**	**36.2**	**0**	**0**	**37**	**42.05**		
	Much lower	**3**	**3.9**	**5**	**3.07**	**0**	**0**	**2**	**2.27**		

*** p<0.05 ** p<0.01**

In detail, Question A2 showed a significance level of 0.01 in relation to participant's' technological pedagogical knowledge about implementing e-learning practice named *Searching and Selecting* (Question K2, χ^2=62.80, p=0.00<0.01), "I can select educational technologies to use in my classroom that enhance what and how I teach English and what the students learn." According to the percentage difference, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Disagree* was 28.57%, which is significantly higher than the average of 16.06%. Table 46 reveals that Question A2 showed a significance level of 0.01 in relation to participants' technological content knowledge about implementing e-learning practice named *Exploring* (Question L3, χ^2=69.50, p=0.00<0.01), "E-learning practices allow me to interact with students in real time." According to the percentage difference, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Always* was 100.00%, which is significantly higher than the average of 12.12%. (See Table 34)

Similarly, the percentage of participants coming from and studying in Hong Kong who chose *Rarely* was 28.41%, which is significantly higher than the average level if 15.45%. Question A2 showed a significance level of 0.01 in relation to Question M3 (χ^2=56.78, p=0.00<0.01). According to the percentage difference, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Disagree* was 24.68%, which is significantly higher than the average of 11.21%. From Table 34, Question A2 showed a significance level of 0.01 in relation to Question N2 (χ^2=49.85, p=0.00<0.01), "During the field experiences, e-learning practices accommodate the preferences of students and teachers." According to the percentage difference, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Very often* in response to N2 was 100.00%, which is significantly higher than the average of 35.45%. The percentage of participants coming from and studying in Mainland

China who chose *Very often* was 50.31%, which is significantly higher than the average of 35.45%. Question A2 showed a significance level of 0.01 in relation to Question S2 (χ^2=40.79, p=0.00<0.01) (Table 68). According to the percentage difference, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Neutral* was 50.00%, which is significantly higher than the average of 25.45%. Identically, Question A2 showed a significance level of 0.01 in relation to Question S3 (χ^2=47.08, p=0.00<0.01) (Table 34).

According to the percentage difference, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Disagree* was 23.38%, which is significantly higher than the average of 10.61%. The percentage of participants coming from Hong Kong and studying in Mainland China who chose *Strongly Agree* was 50.00%, which is significantly higher than the average of 12.12%. Question A2 presented a significance level of 0.05 in relation to Question U2 (χ^2=44.19, p=0.00<0.01). According to the difference in percentage comparison, the percentage of participants coming from and studying in Hong Kong who chose *Disagree* was 28.57%, which is significantly higher than the average percentage of 14.85% (Table 68). Question A2 presented a significance level of 0.05 in relation to Question R2 (χ^2=35.37, p=0.00<0.01). According to the difference in percentage comparison, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Agree* was 100.00%, which is significantly higher than the average percentage of 47.88%. Question A2 presented a significance level of 0.05 in relation to Question L2 (χ^2=44.03, p=0.00<0.01). According to the difference in percentage comparison, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Very often* was 100.00%, which is significantly higher than the average percentage of 35.15%. Question A2 presented a significance level of 0.01 in relation to Question R2 (χ^2=35.37, p=0.00<0.01).

Equivalently, according to the difference in percentage comparison, the percentage of participants coming from and studying in Hong Kong who chose *Disagree* was 23.38%, which is significantly higher than the average percentage of 12.12%. Question A2 presented a significance level of 0.01 in relation to Question S3 (χ^2=47.08, p=0.00<0.01). According to the difference in percentage comparison, the percentage of participants coming from and studying in Hong Kong who chose *Disagree* was 23.38%, which is significantly higher than the average percentage of 10.61%. Question A2 presented a significance level of 0.01 in relation to Question M2 (χ^2=21.03, p=0.05<0.05). According to the difference in percentage comparison, the percentage of participants coming from Hong Kong and studying in Mainland China who chose *Always* was 50.00%, which was significantly higher than the average percentage of 10.61%.

2) The Second Substage

The second substage is using the Chi-Squared test to test the data that were ***NOT*** significant in previous tests in three different scenarios again with the goal now of differentiating the situation in Hong Kong from that in Mainland China. The purpose of the second substage reversely tests if the current study location and nationality have influence in three different scenarios again with the goal now of differentiating the situation in Hong Kong from that in Mainland China. To recap the previous Chi-Square test, Question C2, Question G2, Question J3, Question M1, Question S1 and Question U1 were ***NOT*** significant in previous tests in three different scenarios again with the goal now of differentiating the situation in Hong Kong from that in Mainland China.

Based on the results of compare scenario two in Hong Kong and mainland China by chi-square test through the responses to question A2 (See Table 35), Question A2 did show significance

in relation to Question G2, Question J3, Question M1, Question S1 and Question U1 (p<0.05), meaning that that Question A2 differentiated in relation to the responses to preservice English teachers' content knowledge about implementations of e-learning practices named *Understanding and Applying* (Question G2), participants' belief that implementation of e-learning practices improves their sense of accomplishment (Question J3), preservice English teachers' pedagogical content knowledge about implementations of e-learning practices named *Testing* (Question M1), preservice English teachers' pedagogical content knowledge about implementations of e-learning practices named *Understanding and Applying* (Question S1) and preservice English teachers' pedagogical content knowledge about implementations of e-learning practices named Creating and Promoting (Question U1).

Table 35. Chi-Squared test to test the data that were NOT significant in previous tests in three different scenarios in Hong Kong from that in Mainland China

Question	Response	HK, HK(N=77)		MC, MC(N=163)		HK, MC(N=2)		MC, HK(N=88)		χ^2	*p*
		n	%	*n*	%	*n*	%	*n*	%		
C 2.	Strongly Disagree	4	5.19	2	1.23	0	0	0	0	19.219	0.083
	Disagree	17	22.08	12	7.36	0	0	14	15.91		
	Neutral	19	24.68	47	28.83	1	50	24	27.27		
	Agree	34	44.16	93	57.06	1	50	46	52.27		
	Strongly Agree	3	3.9	9	5.52	0	0	4	4.55		
G 2.	Strongly Disagree	7	9.09	1	0.61	0	0	2	2.27	33.1	0.001**
	Disagree	20	25.97	14	8.59	0	0	8	9.09		
	Neutral	25	32.47	66	40.49	1	50	31	35.23		
	Agree	22	28.57	76	46.63	1	50	44	50		
	Strongly Agree	3	3.9	6	3.68	0	0	3	3.41		
J 3.	Strongly Disagree	2	2.6	1	0.61	0	0	0	0	33.88	0.001**
	Disagree	20	25.97	8	4.91	0	0	10	11.36		
	Neutral	21	27.27	44	26.99	0	0	17	19.32		
	Agree	30	38.96	92	56.44	2	100	55	62.5		
	Strongly Agree	4	5.19	18	11.04	0	0	6	6.82		

M 1.	Strongly Disagree	8	10.39	1	0.61	0	0	2	2.27	61.955	0.000**
	Disagree	19	24.68	8	4.91	0	0	13	14.77		
	Neutral	21	27.27	54	33.13	0	0	26	29.55		
	Agree	23	29.87	95	58.28	1	50	47	53.41		
	Strongly Agree	6	7.79	5	3.07	1	50	0	0		
S 1.	Strongly Disagree	3	3.9	0	0	1	50	4	4.55	49.755	0.000**
	Disagree	14	18.18	9	5.52	0	0	10	11.36		
	Neutral	21	27.27	32	19.63	0	0	23	26.14		
	Agree	35	45.45	94	57.67	0	0	45	51.14		
	Strongly Agree	4	5.19	28	17.18	1	50	6	6.82		
U 1.	Strongly Disagree	10	12.99	2	1.23	0	0	3	3.41	53.419	0.000**
	Disagree	15	19.48	2	1.23	0	0	10	11.36		
	Neutral	20	25.97	54	33.13	0	0	27	30.68		
	Agree	27	35.06	79	48.47	2	100	44	50		
	Strongly Agree	5	6.49	26	15.95	0	0	4	4.55		

From Table 35, Similarly, Question A2 showed a significance level of 0.01 in relation to Question G2 (χ^2=33.10, p=0.00<0.01). According to the percentage difference, the percentage of participants coming from Hong Kong and studying in Hong Kong who chose *Disagree* was 25.97%, which is significantly higher than the average of 12.73%; for participants coming from Hong Kong and studying in mainland China who chose Neutral was 50.00%, which is significantly higher than the average of 37.27%. Question A2 showed a significance level of 0.01 in relation to Question J3 (χ^2=33.88, p=0.00<0.01). According to the percentage difference, the percentage of participants coming from Hong Kong and studying in Hong Kong who chose *Disagree* was 25.97%, which is significantly higher than the average of 11.52%, for participants coming from Hong Kong and studying in mainland China who chose Agree was 100.00%, which is significantly higher than the average of 54.24%.

Meanwhile, Question A2 showed a significance level of 0.01 in relation to Question M1 (χ^2=61.95, p=0.00<0.01). According to the percentage difference, the percentage of

participants coming from Hong Kong and studying in Hong Kong who chose *Disagree* was 24.68%, which is significantly higher than the average of 12.12%. Question A2 showed a significance level of 0.01 in relation to Question S1 (χ^2=49.76, p=0.00<0.01). According to the percentage difference, the percentage of for participants coming from Hong Kong and studying in mainland China who chose Strongly Agree was 50.00%, which is significantly higher than the average of 11.82%. Question A2 showed a significance level of 0.01 in relation to Question U1 (χ^2=53.42, p=0.00<0.01). According to the percentage difference, the percentage of for participants coming from Hong Kong and studying in mainland China who chose Agree was 100.00%, which is significantly higher than the average of 46.06%.

7.2 Summary for The Fourth Stage of Analysis

From the third stage of analysis, we can meet the data from two sets of retests in which all of the questions that had shown significance earlier in relation to the factors A1, A4, A5, and A6 were retested for their relationship with Question A2 as the fifth factor. The aim of those retests was to examine quite specifically how the participants' responses throughout the questionnaire compared in terms of the situations of Hong Kong and of Mainland China. (See in Table 26 to Table 28). In the next stage of analysis, the factors which influence participants' option are displaying by analyzing the collected interview data and their teaching diaries.

Table 36. Summarizing the situations in Hong Kong and mainland China through the Responses to Question A2 in Relation to four different factors by comparing Scenario One

Scenario One--during the training in the university			
Different Aspects	**Types of e-learning Practices**	**Hong Kong**	**Mainland China**
Content Knowledge (CK)	Searching and Selecting	Rarely	Very often
	Testing	***Often***	***Very often***
	*Collaborating and Discussing	*Rarely*	*Rarely*
	Analysing and Synthesizing	Disagree	Neutral
	Creating and Promoting	Sometimes	Very often
	Understanding and Applying	Disagree	Neutral
Pedagogical Knowledge (PK)	*Exploring	*Sometimes*	*Sometimes*
	Searching and Selecting	Rarely	Very often
	*Understanding and Applying	*Sometimes*	*Sometimes*
Technological Knowledge (TK)	Understanding and Applying	Possible	Very probably
	Creating and Promoting	Improving participants' learning outcomes	Well-structured and organized information is available for participants

Table 37. Summarizing the situations in Hong Kong and mainland China through the Responses to Question A2 in Relation to four different factors by comparing Scenario Two

Scenario Two—Self-modelling in daily life			
Different Aspects	**Types of e-learning Practices for self-modelling**	**Hong Kong**	**Mainland China**
TPACK	Participants recap their planned e-learning practices to make themselves more familiar with these practices in their daily life	Very often	Sometimes
	*Participants believe that implementations of e-learning practices make themselves more excited and satisfied with their lecture	*Neutral*	*Neutral*
	Participants believe that implantations of e-learning practice improve their senses of accomplishment	Disagree	Neutral
	The implementations of e-learning practices in English language teacher education make participant more easily design the teaching content	Disagree	Agree

Table 38. Summarizing the situations in Hong Kong and mainland China through the Responses to Question A2 in Relation to four different factors by comparing Scenario Three

Scenario Three --during their field practice			
Different Aspects	**Types of e-learning Practices**	**Hong Kong**	**mainland China**
Pedagogical Content Knowledge (PCK)	Searching and Selecting	Rarely	Very often
	*Exploring	***Neutral***	***Neutral***
	Testing	Disagree	Neutral
	Analysing and Synthesizing	Mahara	Blogger
	Collaborating and Discussing	Very often	Rarely
	Understanding and Applying	**Agree**	**Strongly Agree**
	Creating and Promoting	Neutral	Agree
Technological Pedagogical Knowledge (TPK)	Searching and Selecting	Disagree	Neutral
	Exploring	Rarely	Very often
	Testing	Sometimes	Very often
	*Analysing and Synthesizing	***Very often***	***Very often***
	Collaborating and Discussing	Disagree	Agree
	Understanding and Applying	Neutral	Agree
	Creating and Promoting	Disagree	Strongly Agree
Technological Content Knowledge (TCK)	Exploring	Rarely	Always
	Testing	Disagree	Neutral
	Analysing and Synthesizing	Very often	Rarely
	*Collaborating and Discussing	***Rarely***	***Rarely***
	Understanding and Applying	Disagree	Neutral

7.3 The Fifth Stage of Analysis--Analyzing Collected Interview Data

After collecting interview data from 16 selected participants, I used the guidelines in Radnor's (1994) book about collecting and analyzing interview data to classify the data into three main categories (see Figure 39). All of these sub aspects are summarized and referred to in the literature review I have included in previous chapters.

- *the relationships among factors*
- *the participants' perspectives on the factors*
- *the actual environment for implementing e-learning practices*

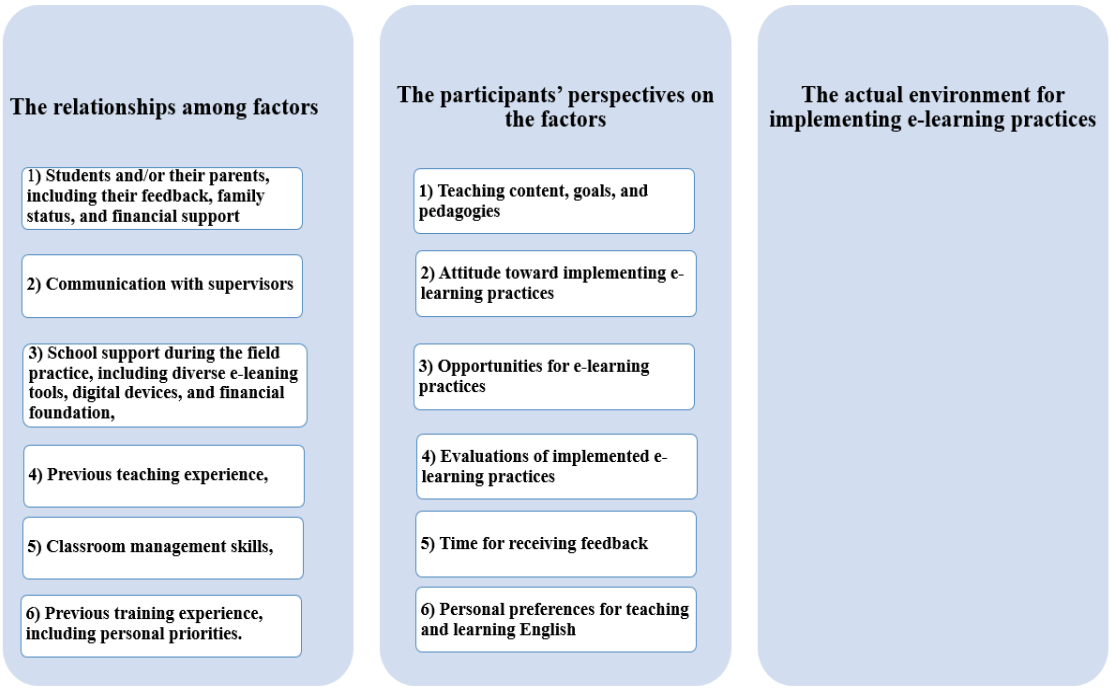

Figure 39.Radnor's Three main category and they contained sub aspects

In order to learn the reasons why participants implemented specific e-learning practices during their field practice and why they gave the answers that they did in Part 4 of the questionnaire, I compared and analyzed all of the collected interview data from 16 selected participants in Hong Kong and mainland China. Their reasons are highlighted, and from those data we can see that participants implemented at least four primary e-learning practices. In Tables 41 and 42, it is clear that there are three common factors that affect participants' implementation of the e-learning practices they selected in Hong Kong and mainland China:

1) Participants' Previous Teaching Experiences

Ten participants showed their reasons about how their previous teaching experience influence the implementation of the e-learning practices they selected. For instance, participant 1 said *"Besides deciding what teaching content to include, I need to spend time looking for it. Sometimes online resources are not entirely suitable."* Participant 8 states *Regarding teaching*

technologies, if I need to use some new platform or software, I first need to learn and understand them... I may need to spend time learning or playing around with some app or other." Participant 9 agrees with the opinions from Participant 8. Meanwhile, Participants 3 pointed out "*Sometimes software suddenly crashes, or a student's computer starts playing up. If there are issues with Internet access, it's a big problem..."* Participant 12, Participant 14 and Participant 15 shared the similar statements. Participant 5 said *It is best to have a school tech assistant to help me and the students when the class is in progress. The time needed to solve technical issues must be taken into consideration... in fact, a lot of problems occur when I use e-learning technology."* Finally, Participant 6 and Participant 10 showed their opinions "…*in reality, I don't think that this strategy can be implemented and run effectively without teaching strategists, who have ample time to operate, to integrate technology and content. On the contrary, e-learning requires a lot of resources to implement and support."*

In summary, based on their previous teaching experience, participants are sometimes faced with technical problems and they need to enhance their TK to improve their problem-solving skills.

2) Participants' Previous Training Experiences, Including Their Personal Priorities

Meanwhile, six participants stated their opinions about their previous training experiences which influence the implementation of the e-learning practices they selected. For instance, Participant 11 said *"I didn't have much chance to use it during my internship. In fact, there is still a good chance to compare."* And Participant 2 and Participant 13 illustrated their opinions by similar way. Participant 7 declared that "*because our school is a requirement, including when we are in class, my master must be there, so that is the day he actually did, and then we will have a class, just together, he will tell me one. What is the problem? It is that every time*

he will watch, he will be next to it." Meanwhile, Participant 4 voiced "*generally, teachers are really quite restricted in schools... in fact there are some strategies that I want to use that can't be implemented. Before I started with him, he was a little unconfident about his student. When I was actually working, most of my classmates could still do it. So, we have a teacher who teaches the class and scores altogether."* And Participant 16 expressed "*There are four quarters, a total of five lessons... because the internship school is relatively traditional, and the teaching progress of my internship is very fast, the rhythm of my class is very fast, and every one of the students must be taught. Basically, it is because he is a guest and these classes and classes are very related, for example, today's class can be used tomorrow."*

Briefly, participants voiced their opinions about their previous training experience, including their personal priorities. It is obvious that the influence of their supervisors hugely affected their choices.

3) The Curriculum's Teaching Content, Goals and Pedagogies

Participants expressed their opinions about how the curriculum's teaching content, goals, and pedagogies influence the implementation of the e-learning practices they selected. For instance, Participant 4 said: *"It depends on which technology you choose... for example, if you are using PPT, it is just a tool and it is possible to change the content yourself. But sometimes I might want to find a game with specific content for my students and when I try to source it, it's actually difficult to find. Such resources are available on the market — some are electronic video platforms, or game-based platforms like Kahoot — but they do not necessarily fit my specific requirements and it is not possible to customize them to my needs."*

7.4 The Sixth Stage of Analysis--Analyzing Collected Participants' Weekly Diaries

In Chapter two, the advantages and functions of collecting participants' diaries were addressed. After I interviewed participants about their choices in the questionnaire, I collected and analyzed their weekly teaching diaries. Based on the introduction of conducting diary studies (Ohly, Sonnentag, Niessen & Zapf, 2010), I utilized participants' diaries to investigate (1) participants' experiences and behaviors with regards to implementation of e-learning practice by preservice English teachers who attended their eight-week field practice; (2) if the schools where preservice English teachers attended their field practice, or their mentors, influence their options. The diaries were collected from 16 participants who already completed interviews. Eight of them attended their field practice in Hong Kong and the others attended their field practice in mainland China. There are three steps for completing the analysis of diary data. Firstly, before collecting participants' teaching diaries, I briefly introduced the aims of collecting eight-week teaching diaries to participants. Then, based on these aims, I mentioned the period (eight weeks) that I planned to investigate. Meanwhile, in order to help participants, understand the level of detail needed from them, I utilized the snippet technique (Swim, Hyers, Cohen & Ferguson, 2001) and just collected the diaries within periods of field practice. Finally, the data collected from the diaries were analyzed and the behaviors targeted in this study were evaluated. The form for collecting participants' weekly teaching diaries about their implementation of e-learning practices during their field practice is in Table 39.

Table 39. The form for collecting participants ‘weekly teaching diaries about implementation for e-learning practice during the field practice

Form for collecting participants'weekly teaching diaries about implementation for e-learning practice during the Field Practice						
Record Periods	☐Week 1	☐Week 2	☐Week 3	☐Week 4		
	☐Week 5	☐Week 6	☐Week 7	☐Week 8		
The location completed the field practice	☐ Hong Kong		☐ mainland China			
Detailed plans for Implementations of e-learning practice	☐Combining content, technologies and teaching approaches that I learnt about in my classroom	☐Organize and maintain online learning management system or discussion Forum	☐Showing lot of pictures to students regarding the content I teach	☐Providing some video records of learning English to students	☐Assisting to solve my own technical problems	☐Designing activities to let students create digital narratives
Specific Descriptions for Each Choice	1)Helping others to coordinate the use of content, technologies and teaching approach 2)Teaching English that appropriately combine with my understandings for curriculum studies, technologies and teaching approaches	1)Evaluate learners’ performance 2) Interact with students	Using different kind of learning styles		Easing the process of my teaching	
Please remark the repeated weeks if they appreared similar plans:						

Before participants provided their weekly teaching diaries to us, participants need to fill in the form of collecting their teaching diaries about implementations for e-learning practices during the field practice. The form is listed in Table 39. Firstly, participants should select which week of diaries they will provided to us. Secondly, participants should opt where they completed their field practice. Thirdly, we categorised all potential plans for implementations of e-learning practice aforementioned in our questionnaire to participants, participants opt one or more plans which they already used during the field practice. Finally, since their periods of field practice is different with each other and the longest repeated circle is eight weeks, therefore, there are only eight weeks as choices for participants in the form. If the plans repeated after week 8, participants only need to mark the number of weeks which two or more than two weeks are same or similar in the last row of the form.

As can be seen in Figure 40, based on answers from 16 participants, all of them knew how to combine content, technologies, and teaching approaches that they learnt about during their field practice in both Hong Kong and mainland China. Only three participants showed many pictures to their students regarding the content they teach.

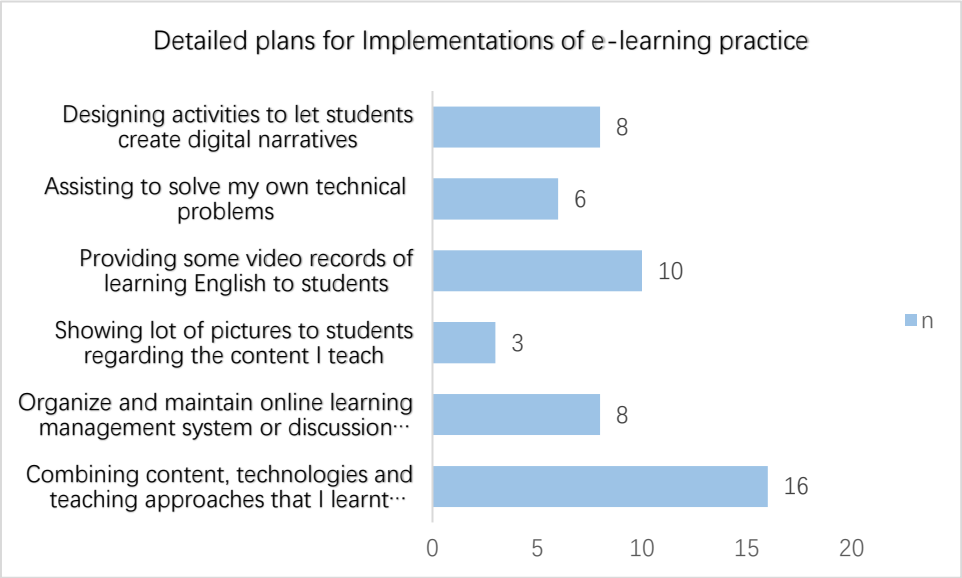

Figure 40. Detailed plans for Implementations of e-learning practice (N=16)

We then compared situations between Hong Kong and mainland China separately. In Table 40, participants who completed their field practice in Hong Kong sometimes repeated their teaching plans when they implemented e-learning practice when teaching in the classroom. However, participants who completed their field practice in schools in mainland China repeated their teaching plan every week when they implemented e-learning practice when teaching in the classroom. In addition, when they implemented e-learning practice when teaching in the classroom in mainland China, participants had no chance to organize and maintain online learning management systems or discuss forums for their students. The situation in Hong Kong is totally different. Participants had many chances to organize and maintain online learning management systems or discussion forums for their students in Hong Kong. Participants who completed their field practice in the schools in mainland China rarely designed activities to let

students create digital narratives. However, in Hong Kong, participants often designed activities to let students create digital narratives to learn English.

Table 40. Comparing participants' teaching diaries between Hong Kong and mainland China

Detailed plans for Implementations of e-learning practice	**The location completed the field practice**	
	Hong Kong (n=8)	***mainland China (n=8)***
Combining content, technologies and teaching approaches that I learnt about in my classroom	8	8
Organize and maintain online learning management system or discussion Forum	8	0
Showing lot of pictures to students regarding the content I teach	1	2
Providing some video records of learning English to students	6	4
Assisting to solve my own technical problems	4	2
Designing activities to let students create digital narratives	7	1
Repeated weeks if they appreared similar plans	Sometimes repeated	Every week

Meanwhile, participants who attended their field practice in mainland China mainly wrote their weekly teaching diaries with self-reflection on paper-based notebooks. The content they wrote contained less pictures and included their mentors' comments. After completing their field practice, participants have to hand over their teaching diaries on returning to their universities (see Appendix E). Participants who attended their field practice in Hong Kong normally used e-portfolios to record their weekly teaching dairies, for instance *Sway* or *Mahara.* Their mentors provided their comments directly in the e-portfolio. Participants could get feedback immediately and revise teaching plans in time.

Based on the collected interview data and participants' weekly diaries with self-reflection, when participants have different teaching goals and content, they will choose particular e-learning tools for their students. The specific situations in Hong Kong and mainland China are

discussed in the following two subsections.

7.5 Combine qualitative and quantitative data in this study

In Chapter four, the mixed-method approach is introduced, and is adopted in this study. Based on the stages of analysis from Chapters five to eight, we first gather quantitative data (from questionnaires) and then use this to inform the collection of qualitative data (from interviews and weekly teaching diaries) in three scenarios in this study. In this subsection, in order to combine different options during the conduct of the evaluation with the aim of providing more insightful understanding, we use qualitative work to identify issues or obtain information on variables not obtained by quantitative surveys. Meanwhile, we use qualitative data to understand unanticipated results from quantitative data. Therefore, in order to answer the sub question of Research Question 2 (*Why do they choose these e-learning practices during field experiences in schools in Hong Kong and mainland China?)*, this subsection only discusses reasons about implementation of e-learning practices during field practice (*Scenario Three*) that affected their choice.

Recapping the stage of analysis from Chapter six through to the first five parts of Chapter eight, there is sufficient evidence that shows significant difference between participants in Hong Kong and mainland China in the following aspects:

- participants' PCK and TPK about implementation of the e-learning practice of *Searching and Selecting* (Questions K1 and K2)
- participants' PCK and TCK about implementation of the e-learning practice of *Exploring* (Questions L1 and L3)
- participants' PCK, TPK and TCK about implementation of the e-learning practice of *Testing* (Questions M1, M2 and M3)

- participants' PCK, TPK, and TCK about implementation of the e-learning practice of *Analyzing and Synthesizing* (Questions N1, N2, and N3)
- participants' PCK, TPK, and TCK about implementation of the e-learning practice of *Collaborating and Discussing* (Questions R1, R2, and R3)
- participants' PCK, TPK and TCK about implementation of the e-learning practice of *Understanding and Applying* (Questions S1, S2 and S3)
- participants' PCK and TPK about implementation of the e-learning practice of *Creating and Promoting* (Questions U1 and U2)

Following the interview, instructions in Chapter four, participants gave their own reasons about why they chose the above e-learning practices during their field practice in Hong Kong and mainland China.

1) Factors which influence implementing of e-learning practice during the field practice are given by the participants in Hong Kong

- **Relationships among students and/or their parents**

Participants' most frequently implemented types of e-learning practices during their field practice were *Searching and Selecting, Exploring*, *Analyzing and Synthesizing, Collaborating and Discussing,* and *Creating and Promoting.* The most common reasons for these choices that participants in Hong Kong reported in the questionnaire were because the relationships among students and/or their parents, including their feedback, family status, and financial support, influenced the options they selected. The following answers from the participants provide examples.

One example comes from Participant 8: *"I think maybe because of the families. I mean the*

students are from grassroots families and some family members cannot speak English, so it's not possible for them to finish their homework. Sometimes they will ask for help from private tutorial centers. But I remember I designed some homework for students to ask their peers as their friends to complete that task or something. So, in this sense, I believe they can communicate with others." Another example comes from Participant 6: *"I don't have access to their parents. This school does not advocate this kind of learning, so he will not expand from the classroom and let them do it in the family. Without e-learning, let me first talk about it. My answer is that your topic is that I have designed some activities, and students. First of all, I did not design this e-learning activity that has something to do with parents. Without this, my teaching content does not involve this piece."*

- **School's Support during the Field Practice**

Participants in Hong Kong often implemented the e-learning practices of *Exploring, Testing, Analyzing and Synthesizing, Collaborating and Discussing, Understanding and Applying,* and *Creating and Promoting*. The schools' support during field practice, wanting to include diverse e-leaning tools and digital devices, and their financial situation, all influenced their choices. Here are example answers from participants:

Participant 10 said *"When I learnt e-learning practices, I could understand the concepts and their usage. But when we really go to field practice in schools, I do not use them in most situation since the schools have limited tools and materials."* Similarly, Participant 9 said *"Because in fact, the main way we teach English at school is the task-based approach, but when I go to class, for example, because of my internship and now I am teaching students, there is a big gap."* Meanwhile, Participant 13 said *"No, then it is related to the whole school's larger environment. They don't have this kind of precedent. They say that the teacher has*

arranged an assignment, and they have to let the parents participate in the network with the students. There is no such mentality. Still more need parents to help them with their homework, but e-learning should not have much to do with [that]."

- **Participants' Attitudes toward Implementing e-Learning Practices**

Participants' attitudes toward implementing e-learning practices influenced their options for utilizing the e-learning practices of *Exploring, Analyzing and Synthesizing, Collaborating and Discussing,* and *Creating and Promoting* during their field practice. Here are answers from participants as examples:

Participant 2 said *"I still say that it is developing, and then we have a positive attitude towards it. In future, it will definitely take more time and energy."* At the same time, Participant 5 said *"I think e-learning is a very good thing. It is very clear how it can improve the teacher's efficiency. What makes students learn in an individual way is to complete their own tasks. Then it can take care of learning differentiation, but the application is a very long road, and there is not enough support and no good environment, this thing cannot be carried out, it is too difficult, so I think the difference is quite big."*

- **The Actual Environment for Implementing E-Learning Practices**

Finally, the actual environment for implementing e-learning practices sometimes influenced participants in Hong Kong to implement the e-learning practices of *Searching and Selecting, Exploring*, *Testing*, *Understanding and Applying* and *Creating and Promoting.* The relationships among the students and/or their parents, including their feedback, family status, and financial support, all influenced the participants' options. Answers from participants provide examples:

As Participant 11 said, *"...at the time of the internship I mainly used slides or videos, which means that I wouldn't use those iPads that are more dependent on you, or some apps. So, when we learn, we say that it should be more interactive, but in fact we can't do it during the internship, because the resources in the school are limited and there is no time to train students to do this, so actual teaching does not use it at a deep level."* In addition, Participant 9 said: *"...actual teaching practice and understanding something is totally different... I know that Kahoot will arouse students' interest and will increase student interaction. I understand this, but it is another thing to use in teaching. What you need to solve this problem in teaching is some procedural things, such as how to borrow iPads… this is some protection work is completely and understand how to use this is two different things."*

Table 41. Factors which influence implementing of e-learning practice during the field practice given by Participants in Hong Kong

Types of Factors Given by Participants in Hong Kong		Seven Categories of E-learning Practices						
		Searching and Selecting	Exploring	Testing	Analyzing and Synthesizing	Collaborating and Discussing	Understanding and Applying	Creating and Promoting
Relationships	◆ Students and/or their parents, including their feedback, family status, and financial support	●	●		●	●		●
	◆ Communication with supervisors		●	●				
	◆ School support during the field practice, including diverse e-leaning tools and digital devices, and financial foundation		●	●	●	●	●	●
	◆ Previous teaching experience	●	●		●	●		
	◆ Previous training experience, including personal priorities	●	●		●	●		
Perspectives	◆ Teaching content, goals, and pedagogies	●	●	●			●	●
	◆ Attitude toward implementing e-learning practices		●		●	●		●
	◆ Opportunities to practice e-learning	●		●	●			
	◆ Evaluations of implemented e-learning practices						●	
	◆ Personal preference for teaching and learning English		●					●
Actual environment for implementing e-learning practices		●	●	●			●	●

Note: ● means this type of e-learning practice is influenced by the selected factor in Hong Kong when participants completed their field practice. For example, when participants in Hong Kong implemented e-learning practice named Searching and Selecting, the influential factors they showed include 1) Students and/or their parents, including their feedback, family status, and financial support, 2) Previous teaching experience, 3) Previous training experience, including personal priorities, 4) Teaching content, goals, and pedagogies, 5) Opportunities to practice e-learning and 6) Actual environment for implementing e-learning practices.

2) Factors Which Influence Implementing E-learning Practice During Field Practice Are Given by Participants in Mainland China

Participants in mainland China reported that their most frequent choices of e-learning practices during their field practice were *Searching and Selecting, Exploring*, *Collaborating and Discussing, Understanding and Applying,* and *Creating and Promoting,* because their personal preferences for teaching and learning English influenced the options they chose. Here are answers from participants as examples:

Participant 12 said: *"Because I am, like I said, I may not have much time to learn new software, so I may use PPT more, so I basically have to learn some functions in PPT, such as how to use triggers. Or how to pause, it may be that learning this content is still limited to some functions in the PPT."* Participant 15 said: *"Convergence with one thing, after adapting to this, I am not willing to accept more new things to change, because after all, I am already investing in real life work, that is, I have no energy and limited availability of software to learn those things, or to have time to expand my own skills."* Meanwhile, Participant 14 said: *"I don't seem to think about anything else, because other work, some may the motivation is not so strong, I will not want to participate."*

Table 42. Factors which influence implementing of e-learning practice during the field practice given by Participants in mainland China

Types of Factors Given by Participants in mainland China		Seven Categories of E-learning Practices						
		Searching and Selecting	Exploring	Testing	Analyzing and Synthesizing	Collaborating and Discussing	Understanding and Applying	Creating and Promoting
Relationships	◆ Students and/or their parents, including their feedback, family status, and financial support	●				●	●	
	◆ Communication with supervisors							
	◆ School support during the field practice, including diverse e-leaning tools and digital devices, financial foundation	●			●			●
	◆ Previous teaching experience	●	●		●	●		●
	◆ Classroom management skills			●				
	◆ Previous training experience, including Personal priorities	●	●		●	●	●	●
Perspectives	◆ Teaching content, goals, and pedagogies		●	●	●			●
	◆ Attitudes toward implementing e-learning practices			●		●		●
	◆ Opportunities to practice e-learning				●	●		●
	◆ Evaluations of implemented e-learning practices							
	◆ Time for receiving feedback		●	●	●			
	◆ Personal preference for teaching and learning English	●	●			●	●	●
Actual environment for implementing e-learning practice					●	●		●

Note: ● means this type of e-learning practice is influenced by the selected factor in mainland China when participants completed their field practice. For example, when participants in mainland China implemented e-learning practice named Searching and Selecting, the influential factors they showed include 1) Students and/or their parents, including their feedback, family status, and financial support, 2) School support during the field practice, including diverse e-leaning tools and digital devices, financial foundation, 3) Previous teaching experience 4) Previous training experience, including Personal priorities, and 5) Personal preference for teaching and learning English.

7.6 Summary for The Fifth and Sixth Stage of Analysis

In this study, participants' weekly teaching diaries with reflection were used for double-checking the actual situations of implementing e-learning practices in English language learning during their field experience in schools in Hong Kong and mainland China. Combining the analyses of interview data with participants' weekly teaching diaries with reflection, we summarized the answers for the second sub-question of the research question. Before the summary, we recapped research question two in this study, ***RQ2:*** *What e-learning practices do preservice teachers implement in English language learning during their field experience in schools in Hong Kong and mainland China? Why do they choose those e-learning practices?* The first sub-question of RQ2 was already answered in Chapter five. Here, the second sub-question is answered.

- ***Why do they choose these e-learning practices during their field experiences in schools in Hong Kong and mainland China?***

1) participants' PCK and TPK about implementation of the e-learning practice of Searching and Selecting (Questions K1 and K2)

a. From the Perspective of Participants Who Were Studying in Hong Kong

The participants who were studying in Hong Kong indicated their reasons for why they chose specific e-learning practices during their field practice. They reported very often implementing the e-learning practice of *Searching and Selecting* because during their field practice, student teachers had more chance to observe the classes and less opportunity to complete their teaching practice in a holistic classroom. Thus, participants gain a deep understanding of and familiarity with teaching English with e-

learning practices. The student teachers usually did not involve parents in their teaching. Some participants stated that educational technology is partial and auxiliary. They listed one example when they taught by using *bring your own device (BYOD)* methods. Students needed to use e-learning tools to freely record their daily learning, and at the same time, participants were required to do that too. The e-learning tools they used included *Google Form*, *StoryBird*, and *Plickers*. Meanwhile, participants posted to an e-book through *Padlet* and made online quiz tools via *Kahoot* and *Edpuzzle.* Therefore, participants had many opportunities to complete their e-learning practices before they went on to their field experience. One problem that the student teachers were faced with was that some of them did not know how to teach students who were not very family with English. Thus, they did not know whether their teaching methods were effective for those students. The students had diverse academic backgrounds, so it was difficult to teach all of them by designing the same teaching activities. In addition, the students' families' financial status was diverse, and the student teachers did not think that every family could afford to buy digital devices. The student teachers agreed that their students needed more financial support.

b. From the Perspective of Participants Who Were Studying in Mainland China

The participants who were studying in mainland China indicated their reasons for choosing specific e-learning practices during their field practice. They very often implemented the e-learning practice of *Searching and Selecting* because when they did their field practice in local mainland China, they always focused on teaching students about English reading, listening, and writing, and the speaking courses were seldom provided to students. Thus, participants were not familiar with the relevant pedagogies of teaching English speaking skills. In mainland China, local schools do not have

Moodle and students do not have the opportunity to use it and learn with it. Furthermore, there is no financial foundation in the public-school system. Thus, less training is offered to participants to facilitate their teaching and learning. The crux of the challenges that participants faced was that they did not know the solutions to the problems they came up against. Thus, the relationships between teaching English, student performance, and classroom teaching were waiting to be solved.

2) participants' PCK, TPK and TCK about implementation of the e-learning practice of Exploring (Questions L1, L2 and L3)

a. From the Perspective of Participants Who Were Studying in Hong Kong

The participants in Hong Kong very often implemented the e-learning practice of *Exploring* because in their field experience, online interaction only emerged from online quizzes, through which the student teachers interacted with teachers and students. However, participants found that students were sometimes lazy or had low cognitive ability for completing the online quizzes. The frequency of students' use of e-learning practices to learn English was one factor that influenced their learning proficiency. To collate the required teaching content, student teachers needed to spend time looking for suitable online resources. They admitted that integrating e-learning into teaching and learning in a holistic teaching environment required a large amount of resources and support.

b. From the Perspective of Participants Who Were Studying in Mainland China

The participants in mainland China very often implemented the e-learning practice of *Exploring* because, as they pointed out, some experienced professors refused to learn

to use e-learning tools in their classroom teaching and preferred instead to trust their previous experiences. When participants tried to introduce new teaching methods with e-learning practices, their supervisors emphatically rejected those methods. Therefore, the participants agreed that their internships differed for the most part from the real teaching environment. Furthermore, depending on the teaching content, participants opted for different e-learning tools. However, participants did not explore whether the strategies and teaching content could be matched and united.

3) participants' PCK, TPK and TCK about implementation of the e-learning practice of Testing (Questions M1, M2 and M3)

a. From the Perspective of Participants Who Were Studying in Hong Kong

Participants who were studying in Hong Kong very often implemented the e-learning practice of *Testing* because they always used *PowerPoint* and *e-books* in their teaching. For example, at the beginning of a lesson, participants used video clips to give students some background knowledge. At the end of the lesson, students completed an online quiz via an e-learning platform. Participants used *Google drive* to create several teaching materials for their students, and then they created a website using *Sway* and uploaded links to the *Google drive* materials. When those activities were done, their supervisors could check their work. Although e-learning practices can unite learning theories with practices, it is important for student teachers to consider what kinds of learning activities they want to design.

b. From the Perspective of Participants Who Were Studying in Mainland China

The participants who were studying in mainland China very often implemented the e-

learning practice of *Testing* because they agreed that it was useful to teach elementary-level students with pictures so that students could easily get a vivid sense of what the teachers' words represented. However, participants did not prefer to use pictures to teach students in the higher grades.

4) participants' PCK, TPK, and TCK about implementation of the e-learning practice of Analyzing and Synthesizing (Question N1, N2 and N3)

a. From the Perspective of Participants Who Were Studying in Hong Kong

Participants who were studying in Hong Kong sometimes implemented the e-learning practice of *Analyzing and Synthesizing.* They mentioned that *Mahara* was not user friendly, because when they uploaded pictures, they had to wait for several minutes. In addition, participants could not drag documents onto the website in *Mahara*. Based on participants' observations about their field practice, I discovered that on the one hand, e-learning practices were more interesting and attractive to students than traditional paper textbooks because students always preferred playing to learning. In addition, participants agreed that teaching English with e-learning practices could satisfy students' learning needs. On the other hand, however, a minority of students liked to read textbooks by themselves. During their field practice, those students told participants that they did not like what the participants showed them. Subsequently, the students began to pretend to be learning. Thus, it was difficult to balance the preferences of participants with those of their students. There were no workshops, and seniors had to rely on teaching English with e-learning practices in the local school. However, the local schools did provide some workshops for participants about how to use *Sway* or *Google drive* to establish their own e-portfolios for their field experience. Meanwhile,

participants who were studying in Hong Kong mentioned that during their field experience they used *Moodle* and *Sway* in their teaching to keep track of their teaching schedules.

b. From the Perspective of Participants Who Were Studying in Mainland China

Participants who were studying in mainland China sometimes implemented the e-learning practice of *Analyzing and Synthesizing* because in mainland China, schools in coastal cities and certain other cities are underdeveloped. Limited economic conditions are the main reason for this, another reason being the teachers themselves. In order to be a government-enrolled teacher, many choose to stay in rural areas because the qualification test there is easier than that in urban areas. Furthermore, qualifying to be a registered teacher depends on one's test scores, not on one's abilities. If participants can get high marks, then they have an opportunity for promotion. Later, when they get older, they often go back to an urban area. Therefore, aging is presently the biggest problem among teachers in local schools, and the conflicts between aging teachers and implementation of e-learning tools are obvious. In addition, there are no special courses in mainland China to help preservice teachers learn how to design and create plans for micro-teaching. Meanwhile, participants who were studying in mainland China mentioned that during their field experience they used *Word* and *paper-based notebooks* to keep their teaching schedules.

5) participants' PCK, TPK, and TCK about implementation of the e-learning practice of Collaborating and Discussing (Questions R1, R2, and R3)

a. From the Perspective of Participants Who Were Studying in Hong Kong

Participants who were studying in Hong Kong sometimes implemented the e-learning practice of *Collaborating and Discussing* because they agreed that teaching English with e-learning practices increased their students' interest in and motivation for learning English. However, the effectiveness of teaching English with e-learning still needed to be discussed. During their learning experiences, some students seldom taught English with e-learning practices because they didn't believe that e-learning led to any large improvement. In addition, leadership was not obviously helpful to everyone during field practice. In fact, student teachers did not design learning activities that linked parents with students because each family had a different background and it was difficult to invite parents to help their children with their studies. For example, parents' working hours, their academic backgrounds, and incomes were all factors. Therefore, some students had far fewer chances to complete their e-learning practices to learn English because there were no digital devices in their home. They used paper-based worksheets more frequently. Furthermore, because not every family had a computer, students might not understand a computer's usage and functions. After they had returned home for the night, they had no chance to review or learn new knowledge. Finally, some students did not always stay with their parents.

b. From the Perspective of Participants Who Were Studying in Mainland China

Participants who were studying in mainland China sometimes implemented the e-learning practice of *Collaborating and Discussing* because they were unsure about whether e-learning practices really encourage students. Participants had negative attitudes toward students studying collaboratively with their parents.

6) participants' PCK, TPK and TCK about implementation of the e-learning practice of Understanding and Applying (Questions S1, S2 and S3)

a. From the Perspective of Participants Who Were Studying in Hong Kong

Participants who were studying in Hong Kong very often implemented the e-learning practice of *Understanding and Applying* because they agreed that teaching content and objectives influenced them with regard to what e-learning practices they should implement and how they should implement them. Other concerns they expressed were whether teaching approaches were correctly connected with the curriculum and how the teaching content would influence student teachers' lesson design.

b. From the Perspective of Participants Who Were Studying in Mainland China

Participants who were studying in mainland China rarely implemented the e-learning practice of *Understanding and Applying* because they lacked the proper training and it was not easy for them to gain the relevant knowledge about e-learning from the Internet.

7) participants' PCK and TPK about implementation of the e-learning practice of Creating and Promoting (Questions U1 and U2*)*

a. From the Perspective of Participants Who Were Studying in Hong Kong

Finally, participants who were studying in Hong Kong very often implemented the e-learning practice of *Creating and Promoting* because e-learning practices did not make designing their lessons easy at all. Interestingly, assigning online quizzes to students saved student teachers significant time compared with giving paper-based exams. Still, teachers needed relatively more time and energy for preparing teaching content that

used e-learning practices. Finally, participants who were studying in Hong Kong opted for the selection "Greater differences" in regard to understanding the functions of e-learning practices, compared with those associated with experiencing activities for teaching English. They agreed that e-learning improved the efficiency of their teaching and that in an e-learning environment, considering individual differences was a core feature of proper design. However, it was difficult to apply e-learning in the holistic teaching environment. Understanding e-learning practices and implementing them in the teaching process were two separate issues.

b. From the Perspective of Participants Who Were Studying in Mainland China

Finally, participants who were studying in mainland China selected "Greater differences" in relation to understanding the functions of e-learning practices, compared with those associated with experiencing activities for teaching English, because they agreed that the connotations of e-learning practices are relatively deeper and broader than those in actual classroom teaching, where the form and method of teaching English activities are very simple. However, the situation in private tutorial centers was different. For example, Owen Children's English tutorial centers pay great attention to applying e-learning practices during their classes. Owen Children's English tutorial centers have already produced digital applications for teaching, including teaching textbooks and follow-up practices, and after students have finished their lessons, they complete relevant exercises on those e-learning tools. The participants agreed that after doing their field practice, teaching English with e-learning practices gave them a different kind of inspiration.

A summary of perspectives regarding implementation of seven types of e-learning

practice during field practice in Hong Kong and mainland China (See Table 43). The conclusion and relevant discussion for this study will be presented in the next chapter.

Table 43. Summarizing examples for Implementations of e-learning practice during their field practices between Hong Kong and mainland China

Implementations of e-learning practice during their field practices between Hong Kong and mainland China				
Types of e-learning practices	***Hong Kong(n=8)***	***Detailed Examples***	***mainland China (n=8)***	***Detailed Examples***
Searching and Selecting	Have more chances to implement e-learning practice in holistic classroom	*Bring your own device (BYOD)* Projects Using e-learning tools to record learning plans by *Google Form, Storybird* and *Plickers* Using e-books to improve the English reading comprehension, such as *Padlet* Online quiz tools by *Kahoot* and *Edpuzzle*	Limited implementations in the English reading, listening and writing course	Have no chance to use online learning management system such as *Moodle* Using *Blog* to record or share inspiring ideas Not familiar with technology-enhanced learning language and teaching
Exploring	Very often to utilize looking for suitable online source	Techer encourage participants to use *e-portfolios* and upload the audio feedback to participants in the online discuss forum	In order to check if practice and teaching content are matched	In most case, teacher mentor refused to use e-learning tools and rarely share their teaching experience
Testing	Very often to utilize to complete the test or survey	Using *Survey Monkey* or *Google Form* for completing survey Creating the e-books for presenting what they learnt by *Sway* and sharing with peers and students by *Google Drive*	Very often to utilize to complete the online questionnaires or voting	Mostly use *Wenjuan Xing* or *Online Testing platform* logged in through *Wechat* account
Analyzing and Synthesizing	To satisfy their learning needs and provide vivid learning environment	*Google Docs, Advanced searching via* Google or university *library System* Using *Moodle* and Sway to keep track of their teaching schedules	Sometimes implement to design and create plans for micro-teaching	Using *Words* and *paper-based notebooks* to keep their teaching schedules

Collaborating and Synthesizing	Sometimes implement to increase students' interests	Utilizing the video resources as the script to assign students to make storybooks by mobile apps, such as *Book Creator*	Rarely implementing	Have negative attitude towards collaborative activities, teaching pedagogies still mainly focuses on exam-oriented pedagogies
Understanding and Applying	Very often implementing to lesson designs	Using *Google Classroom* as collaborative tools to prepare lesson materials and design lessons	Rarely implementing	Lacking the proper training and not easy to gain the relevant knowledge about technology enhanced language learning
Creating and Promoting	Very often implementing to prepare teaching content	Using *Prize or Powerpoint* to describe and list in-class teaching activities Using e-learning tools as one of the time-saving methods in actual teaching environment	Sometimes implement to design teaching plans	Limited facilities in schools and some experienced teachers have less values of implementing e-learning practice If completed the field practice in some private tutorial center, participants may have more chance to utilize different e-learning tools

Chapter 8: Conclusions and Discussion

8.1 Overview of the Study

In Chapters one through seven, I presented the study's research background and analyzed the collected data for e-learning practices in preservice English language teacher education in Hong Kong and mainland China. In summary, during their preservice English teacher training, the study's preservice English teachers in Hong Kong and mainland China were often trained to use their pedagogical knowledge (PK), content knowledge (CK), and technological knowledge (TK) for teaching English using the e-learning practices of *Searching and Selecting*. For instance, in Hong Kong, preservice English language teachers rarely select appropriate e-learning practices from a wide range of e-learning practices for English language teaching and learning. They just use e-learning tools they habitually used, such as *Google Apps* and the university *library system*. Meanwhile, in mainland China, some teachers occasionally provide video recordings of successful cases of teaching English though the implementation of e-learning practices. When preservice English language teachers complete e-learning practices during their training at university, participants in both in Hong Kong and mainland China know how to solve technical problems. Initially, they make use of the available solutions and if the problems persist, they ask for assistance from the Department of Information Technology in their respective schools.

Teachers were sometimes trained to use their PK for teaching English using the e-learning practice of *Exploring*. For instance, in Hong Kong, preservice English language teachers know how to organize and maintain classroom management when they integrate e-learning practices for English learning. Similarly, preservice English

language teachers in mainland China know how to organize and maintain classroom management when they integrate e-learning practices for English learning, but, due to the limited training they received, they sometimes felt it was somewhat difficult to handle and felt confused whether or not the solutions they implemented were suitable for their students. At the same time, they were frequently trained to use their CK for teaching English with the e-learning practice of *Testing*. For instance, preservice English language teachers agree that training courses they attended mostly centered around English subject matter. They rarely use Website Editors to test and modify web pages about English teaching and learning since when they delivered English lessons during their field practice, it was not necessarily available for them to use.

Preservice English language teachers have a neutral attitude towards practicing their capabilities in the e-learning practice of *Analyzing and Synthesizing* by adapting the training about their CK of teaching English since they think that English learning skills development with e-learning practices can be of the same effectiveness as face-to-face lessons. Meanwhile, their capabilities in terms of the e-learning practice of *Collaborating and Discussing* were developed through their CK of teaching English. In Hong Kong, participants use different online evaluation platforms or online quizzes to evaluate their performance in English learning, for example, *Kahoot* or *Edpuzzle*. In mainland China, preservice English language teachers rarely use evaluation platforms exclusively, unless they were invited to participate in a specific online survey platform called *Wenjuan Xing*. In both Hong Kong and mainland China, preservice English language teachers have less chance to discuss English subject matter like experts who specialized in technology-enhanced English language learning.

Preservice English language teachers' PK and TK is used for teaching English using the e-learning practice of *Understanding and Applying.* Preservice English language teachers sometimes understand English learning with e-learning practices based upon what teachers currently teach in both Hong Kong and mainland China. Based on technical skills gained from their training, preservice English language teachers possibly need to use technology to gain more experience in teaching the English Language and for further development of their teaching proficiency. Meanwhile, in order to develop preservice English language teachers' CK and TK for teaching English using the e-learning practice of *Creating and Promoting*, preservice English language teachers in Hong Kong sometimes devote a lot of effort to e-learning practices in English teaching and learning. Their learning goals are implementing knowledge they gained at university, which, since being related to e-learning practices, could improve their learning outcomes. However, in mainland China, preservice English language teachers often devote a lot of effort to e-learning practices in English teaching and learning and their learning goals mainly focus on well-structured and organized information, which, since related to e-learning practices, is available to them.

However, when preservice English language teachers in Hong Kong and mainland China engaged in field practice, they often used their pedagogical content knowledge (PCK) and technological pedagogical knowledge (TPK) of teaching English to conduct the e-learning practices of *Searching and Selecting* for their students. In Hong Kong, preservice English language teachers rarely found difficulty in selecting effective teaching pedagogies to guide students' English language thinking and learning. However, in mainland China, preservice English language teachers often found difficulty in selecting effective teaching pedagogies to guide students' English language

thinking and learning. Preservice English language teachers disagree on whether during field practice in Hong Kong and mainland China they select educational technologies to use in their classroom that enhance what they teach and how they teach English and what students learn. Since both English language proficiency of each student and facilities in schools are unequal, it is difficult to select educational technologies to use in their classroom that enhance what they teach and how they teach English and what students learn.

In order to complete their e-learning practice about *Exploring*, preservice English teachers often designed their lessons based on their PCK, TPK, and technological content knowledge (TCK) of teaching English. In both Hong Kong and mainland China, preservice English language teachers have a neutral attitude towards whether e-learning practices make possible different kinds of learning styles to be catered for in their field practice. Preservice English language teachers often know how to use strategies that combine content, technologies, and teaching approaches that they learnt about in their classrooms. However, in mainland China, preservice English language teachers had limited knowledge about how to use strategies that combine content, technologies, and teaching approaches that they learnt about in their classroom. In Hong Kong, preservice English language teachers often interact with students in real time during their field practice no matter what kind of e-learning practices they used. In mainland China, preservice English language teachers agree that if they frequently use different e-learning tools during field practice, it really can enhance interaction with students in real time. However, preservice English language teachers have limited experience and knowledge of implementing e-learning practice in English language learning and teaching.

Meanwhile, preservice English teachers reviewed their TPK and TCK of teaching English language to practice their capabilities for *Testing*. There are differences between the activities that preservice English language teachers experienced during training and during their field experience. In Hong Kong, during the field practice, if preservice English language teachers do not use e-learning practices, they sometimes show many pictures to lower-grade students regarding the content they teach. However, in mainland China, preservice English language teachers very often show lots of pictures to lower-grade students regarding the content they teach, no matter whether they have experienced e-learning practices in training or during their field experience. In both Hong Kong and mainland China, preservice English language teachers understand e-learning practices beneficially bridge pedagogical theories and teaching practices, but they disagree that this combination can improve their teaching skills.

In addition, preservice English teachers in Hong Kong and mainland China were often trained to use their PCK, TPK, and TCK for teaching English language by practicing *Analyzing and Synthesizing*. Specifically, during field practice in Hong Kong, preservice English language teachers currently use *Sway* or *Mahara* to manage their teaching schedules during their field experience. In mainland China, preservice English language teachers currently use *Blogger* or *Word documents* to manage their teaching schedules during their field experience. Preservice English language teachers agree that during field experience in both Hong Kong and mainland China, e-learning practices accommodate the preference of students and teachers. However, in mainland China, preservice English language teachers disagree that schools provide them with technological support for teaching and learning English before the start of their field

experience in order to reduce their anxiety. The situation in Hong Kong is different. Preservice English language teachers can always receive support from schools before they start field practice. Meanwhile, preservice English teachers preferred to teach their students by using *Collaborating and Discussing* via their PCK, TPK, and TCK of teaching English. In Hong Kong, preservice English language teachers agree that online English teaching and learning discussions are generally intellectually stimulating and inspiring for their students.

However, in mainland China, preservice English language teachers have very limited opportunities to use online learning discussion forums. In Hong Kong, preservice English language teachers disagree that they can provide leadership in helping others to coordinate the use of content, technologies, and teaching approaches during field practice. Since they are new teachers and they have limited experience in being good leaders, they pointed out that they need more time to practice. In mainland China, preservice English language teachers agree that they can provide leadership in helping others to coordinate the use of content, technologies, and teaching approaches during field practice. Since normally teacher mentors were very busy and had limited time to guide preservice English language teachers to complete their field practice, they therefore need to take the lead if they are faced with problems when implementing e-learning practice, by coordinating the use of content, technologies and teaching approaches.

Meanwhile, in both Hong Kong and mainland China, preservice English language teachers rarely design activities that enable students to create digital narratives by using e-learning practices in collaboration with their parents because students come from

families with different status, and parents aren't normally involved when preservice English language teachers design teaching activities. Preservice English teachers in Hong Kong and mainland China were often trained to use their TPK and TCK for teaching English by practicing *Understanding and Applying*. For example, when completing e-learning practice in Hong Kong, preservice English language teachers agree that they know about technologies that they can use for understanding and teaching English with e-learning practices. Meanwhile, preservice English language teachers find it difficult to teach English that appropriately combines with their understanding of curriculum studies, technologies, and teaching approaches in both Hong Kong and mainland China. However, preservice English language teachers in mainland China showed a neutral attitude towards this issue because of their insufficient experience in implementing e-learning practices in teaching English. Finally, preservice English teachers cultivated the practice of *Creating and Promoting* with their students, based on their TPK of teaching English. For instance, preservice English language teachers disagree that e-learning practices ease the process of their teaching during field practice in Hong Kong. A significant amount of time is required to gather and design teaching content for lessons to be delivered using different e-learning tools in a holistic teaching environment. However, preservice English language teachers strongly agree that during field practice in mainland China, e-learning practices ease the process of their teaching. Since normally their in-classroom teaching is presented in a simple way, if preservice English language teachers implemented different e-learning practices during their teaching, their students became more motivated and paid more attention to their teaching content.

8.2 Summary of Key Findings

The results of this research provide empirical evidence regarding e-learning practices in preservice English language teacher education in Hong Kong and mainland China under three scenarios. This proof is summarized in connection with this study's three research issues.

Research Question 1: What e-learning practices are implemented in English language learning in preservice teacher education courses in Hong Kong and mainland China?

During their in-class training, all participants in Hong Kong and mainland China sometimes implemented the e-learning practices of *Searching and Selecting* and *Collaborating and Discussing*. All participants in Hong Kong and the mainland very often implemented the e-learning practices of *Exploring, Testing,* and *Understanding and Applying.* This is in line with what Chai, Koh and Tsai (2010) and Smith and Greene (2013) found in their research. Meanwhile, all participants in Hong Kong and mainland China had a neutral attitude toward the e-learning practice of *Analyzing and Synthesizing*. In reference to the e-learning practice of *Creating and Promoting,* all participants in Hong Kong and mainland China agreed that there were two difficult parts to creating a unit of study that relied on e-learning practices: (1) considering the impact that could occur if e-learning technologies could not be handled properly during instruction, and (2) deciding how to customize e-learning-infused instructional materials with collected resources.

The learning goals of all participants in Hong Kong and the mainland were related to

the e-learning practice of *improving their learning outcomes.* All participants in Hong Kong and mainland China always used two types of technological tools for English learning: *Videos* and *Google and its related functions.* Although students in Mainland China need VPN to access the *Google and its related functions*, they still prefer using *Google and its related functions* since they agree that they can easily find more resource from *Google and its related functions*. The two methods that teachers combined with e-learning practice most often were the *grammar-translation method* and the *communicative method.* All participants in Hong Kong and mainland China adapted their learning styles to different learners by using *online student responses to the teacher* and *online English learning resources.* During their training, teachers always used *Podcasting* and *Videos of another teacher's teaching.*

Research Question 2: What e-learning practices do preservice teachers implement in English language learning during their field experiences in schools in Hong Kong and mainland China? Why do they choose these e-learning practices?

- ***What e-learning practices do preservice teachers implement in English language learning during their field experiences in schools in Hong Kong and mainland China?***

During preservice English teachers' field practice, all participants in Hong Kong and mainland China sometimes implemented the e-learning practices of *Analyzing and Synthesizing* and *Collaborating and Discussing* and very often implemented *Searching and Selecting, Exploring, Testing, Understanding and Applying,* and *Creating and Promoting.* Finally, all participants in Hong Kong and mainland China always used the online e-Portfolio systems *Blogger* and *Mahara*. When discussing the differences in understanding the functions of e-learning practices compared with those in

experiencing activities for teaching English, all participants in Hong Kong and mainland China opted for the response "*Greater differences"* with regard to understanding the functions of e-learning practices, compared with experiencing activities for teaching English.

- ***Why do they choose these e-learning practices?***

The detailed information of this answer is already presented in Chapter seven. In summary, factors which influenced participants' options for implementing e-learning practice during their field practice both in Hong Kong and mainland China were listed in Table 44. Clearly, 1) Relationships among students and/or their parents, 2) School's Support during the Field Practice, 3) Participants' Attitudes toward Implementing e-Learning Practices and 4) The Actual Environment for Implementing E-Learning Practice are factors which influence implementing of e-learning practice during the field practice are given by the participants in Hong Kong. In detail, Participants' most frequently implemented types of e-learning practices during their field practice were Searching and Selecting, Exploring, Analyzing and Synthesizing, Collaborating and Discussing, and Creating and Promoting. The most common reasons for these choices that participants in Hong Kong reported in the questionnaire were because the relationships among students and/or their parents, including their feedback, family status, and financial support, influenced the options they selected. Participants in Hong Kong often implemented the e-learning practices of Exploring, Testing, Analyzing and Synthesizing, Collaborating and Discussing, Understanding and Applying, and Creating and Promoting. The schools' support during field practice, wanting to include diverse e-leaning tools and digital devices, and their financial situation, all influenced their choices. Participants' attitudes toward implementing e-learning practices

influenced their options for utilizing the e-learning practices of Exploring, Analyzing and Synthesizing, Collaborating and Discussing, and Creating and Promoting during their field practice. Finally, the actual environment for implementing e-learning practices sometimes influenced participants in Hong Kong to implement the e-learning practices of Searching and Selecting, Exploring, Testing, Understanding and Applying and Creating and Promoting. The relationships among the students and/or their parents, including their feedback, family status, and financial support, all influenced the participants' options. However, Participants in mainland China reported that their most frequent choices of e-learning practices during their field practice were Searching and Selecting, Exploring, Collaborating and Discussing, Understanding and Applying, and Creating and Promoting, because their personal preferences for teaching and learning English influenced the options they chose.

Table 44.Summarizing factors which influenced participants' options for implementing e-learning practice during their field practice both in Hong Kong and mainland China

Seven Categories of E-learning Practices	Types of Factors Given by Participants		
	Same factors given by participants both in Hong Kong and mainland China	**Hong Kong**	**mainland China**
Searching and Selecting	The relation between Students and/or their parents Previous teaching experience Previous training experience	The perspectives of Teaching content,goals, and pedagogies The perspectives of opportunities to practice e-learning Actual environment for implmenting e-learning practices	Personal preference for teaching and learning English School support during the field practice
Exploring	Previous teaching experience Previous training experience The perspectives of Teaching content,goals, and pedagogies Personal preference for teaching and learning English	Attitude toward implementing e-learning practices Actual environment for implmenting e-learning practices The relation between Students and/or their parents Communication with supervisors School support during the field practice	Time for receiving feeback
Testing	The perspectives of Teaching content,goals, and pedagogies	Actual environment for implmenting e-learning practices Communication with supervisors School support during the field practice The perspectives of opportunities to practice e-learning	Attitude toward implementing e-learning practices Time for receiving feeback Classroom management skills
Analyzing and Synthesizing	School support during the field practice Previous teaching experience Previous training experience The perspectives of opportunities to practice e-learning	The relation between Students and/or their parents Attitude toward implementing e-learning practices	The perspectives of Teaching content,goals, and pedagogies Actual environment for implmenting e-learning practices Time for receiving feeback
Collaborating and Discussing	The relation between Students and/or their parents The perspectives of opportunities to practice e-learning Attitude toward implementing e-learning practices	School support during the field practice The perspectives of Teaching content,goals, and pedagogies	Actual environment for implmenting e-learning practices Personal preference for teaching and learning English Previous teaching experience Previous training experience
Understanding and Applying		School support during the field practice The perspectives of Teaching content,goals, and pedagogies The perspectives of evaluations of implemented e-learning practices Actual environment for implmenting e-learning practices	The relation between Students and/or their parents Previous training experience Personal preference for teaching and learning English
Creating and Promoting	Attitude toward implementing e-learning practices Actual environment for implmenting e-learning practices Personal preference for teaching and learning English The perspectives of teaching content,goals, and pedagogies School support during the field practice	The relation between Students and/or their parents	The perspectives of opportunities to practice e-learning Previous teaching experience Previous training experience

Research Question 3: What are the similarities and differences between Hong Kong and Mainland China in regard to e-learning practices in English language preservice teacher education?

1) The similarities in implementation of e-learning practices in English language preservice teacher education between Hong Kong and Mainland China

The first section discusses the similarities in e-learning practices in English language preservice teacher education between Hong Kong and Mainland China. In summary, based on the TPACK framework, the similarities in e-learning practices in English language preservice teacher education between Hong Kong and Mainland China are found within the e-learning practices of *Exploring, Testing, Analyzing and Synthesizing, Collaborating and Discussing* and *Understanding and Applying.* Details of those similarities are listed.

During their training, preservice English teachers in Hong Kong and Mainland China similarly implemented e-learning practices in:

- **Exploring**

Preservice English teachers' Pedagogical Knowledge (PK)

During the training, preservice English teachers know how to organize and maintain classroom management in Hong Kong. Similarly, preservice English teachers know, but they sometimes felt a little bit difficult to handle. Since based on limited training they received, they felt confused if the solutions are suitable for their students in mainland

China.

- **Understanding and Applying**

Preservice English teachers' Pedagogical Knowledge (PK)

During their training, preservice English teachers both in Hong Kong and in Mainland China very often could understand their English learning by using e-learning practices that were based upon what their teachers currently teach.

- **Testing**

Preservice English teachers' Content Knowledge (CK)

During their training, preservice English teachers both in Hong Kong and Mainland China very often participated in training courses centered primarily around English matter, and they often practiced their capabilities for teaching English by the e-learning practice of *Testing*. Training courses preservice English teacher attended most are centered-around English subject matter both in Hong Kong and mainland China.

- **Collaborating and Discussing**

Preservice English teachers' Content Knowledge (CK)

Meanwhile, preservice English teachers both in Hong Kong and in Mainland China were rarely able to discuss the English subject matter like an expert who specialized in English preservice teacher education in e-learning practices.

However, during their field practice, preservice English teachers in Hong Kong and Mainland China similarly implemented e-learning practices in:

- **Exploring**

Preservice English teachers' pedagogical content knowledge (PCK)

Meanwhile, when preservice English teachers engaged in their field practice, they sometimes knew how to select effective teaching pedagogies to guide their students' thinking and learning in English. Both in Hong Kong and mainland China, preservice English teachers have neutral attitude towards that e-learning make possible different kind of learning style to be catered in their field practice.

- **Collaborating and Discussing**

Preservice English teachers' Technological Content Knowledge (TCK)

Both in Hong Kong and mainland China, preservice English teachers rarely design the activities to let students create digital narratives by using e-learning practices on the topic of learning English in collaboration with their parents.

- **Analyzing and Synthesizing,**

Preservice English teachers' technological pedagogical knowledge (TPK)

Finally, when preservice English teachers engaged in their field practice, they agree that e-learning practices accommodate the preference of students and teachers.

2) The differences in implementation of e-learning practices in English language preservice teacher education between Hong Kong and Mainland China

The second section discusses the differences in e-learning practices in English language preservice teacher education between Hong Kong and Mainland China. During their training, preservice English teachers in Mainland China implemented e-learning practices differently from their counterparts in Hong Kong, using four different e-learning practices.

- **Searching and Selecting**

a. Preservice English teachers' Pedagogical Knowledge (PK)

First, preservice English teachers in Mainland China pointed out that their teachers sometimes did select proper e-learning practices for English teaching and learning. In order to make lesson content more interesting, professors sometimes provided practices with e-learning tools, including PowerPoint presentations and videos. However, preservice English teachers in Hong Kong felt that their teachers rarely selected proper e-learning practices for English teaching and learning. Participants agreed that everything was decided by the course as well as the available time. because they needed time to select proper practices for their teaching content. For example, they often used online quiz tools for revising their courses. In a normal course, preservice English teachers disagreed about whether they had much time to use e-learning tools. Some participants shared similar experiences, stating that they usually used teaching websites more than video clips. For example, they learned English grammar by watching content

on webpages rather than videos. Some participants preferred face-to-face learning, because they agreed that the aim of learning English was to communicate. Teaching English with e-learning practices influenced their in-class communication. For example, when students watched videos on Moodle, they had questions to answer, and they needed to mark the questions first, but they could not directly ask questions of their professors.

b. Preservice English teachers' Content Knowledge (CK)

Preservice English teachers in Mainland China agreed that during their training, their teachers rarely provided video records of successful cases about teaching English by implementing e-learning practices to formulate English pedagogies. Since their professors were inexperienced about teaching English with e-learning practices, they could not share many experiences using e-learning tools. On the other hand, the teacher training program in Hong Kong was very practical and most of the teachers were very experienced. Some professors retired from the first line after they had been teaching in schools for more than 10 or 20 years. During the teacher training, whether professors taught English with e-learning practices was influenced by their personal preference. Some participants pointed out that their professors were very traditional, and those professors mostly relied on paperwork and the traditional teaching methodology. Teaching English with e-learning practices was not very popular at that time. Thus, those professors did not like to provide videos about e-learning in the classroom, although they often did provide videos about using traditional teaching methods for

English lessons. In addition, whether professors taught English with e-learning practices was influenced by the times. Some of the professors had been teaching English 10 or even 20 years before, and at that time, English with e-learning practices was not even exist and there were no requirements about it. Thus, those professors kept their teaching style and did not use e-learning practices to teach English. In contrast, other professors provided students in training with many e-learning practices for learning English. For instance, those professors shared videos about students' field practices by Google drive. Unfortunately, they did not clearly introduce the likely problems and solutions when they were teaching English using different e-learning tools in holistic situations, and as a result, the students were often confused about how to use those e-learning tools effectively. Students did not clearly know which e-learning tools were attractive to students and were used to using micro teaching practices during their training. Before the students engaged in their field practice, they needed to complete the different teaching practices with e-learning tools.

- **Analyzing and Synthesizing**

Preservice English teachers' Content Knowledge (CK)

Preservice English teachers in Hong Kong agreed that developing English learning skills with e-learning practices could be just as effective as face-to-face lessons. Participants felt that learning English with e-learning practices helped them cooperate with students and others. In contrast, in face-to-face activities, preservice English teachers could use group work to develop their collaboration skills, but they might not

be able to develop IT skills. The objectives of face-to-face teaching were different from those of teaching through e-learning methods. Thus, participants were unable to choose which one was better. Participants could only identify the respective advantages and disadvantages, and then utilize them to learn English. Most local schools in Hong Kong used text-based teaching methods, and based on the textbooks, the teachers taught English with different objectives. For example, some local Hong Kong schools used textbooks named *English to Enjoy.* Student learning capabilities influenced the teaching methods. Students with low learning capabilities preferred the traditional teaching methods, and if teachers provided those students with e-learning tools, the students were disturbed. The two teaching practices take on different forms, and as a result, learning outcomes are varied.

Still, preservice English teachers in Mainland China showed a neutral attitude toward the relative effectiveness of the two methods. Participants believed that both traditional teaching methods and teaching in an e-learning environment had advantages and disadvantages. For traditional teaching, professors used blackboard and chalk to deliver their teaching content, and the students had no chance to be engaged except with blackboard and chalk. In addition, traditional teaching was more teacher-centered and students rarely shared their own opinions. However, professors' facial expressions and emotions were easily apparent to students. Therefore, the effectiveness of two teaching approaches was hard to assess simply by how many e-learning tools the professors implemented in their lessons.

- **Creating and Promoting**

a. Preservice English teachers' Content Knowledge (CK)

Preservice English teachers who were studying in Hong Kong sometimes devoted significant effort to e-learning practices in their English teaching and learning, because they had taken a course about integrating e-learning tools into the English classroom. In that course, they had learned a great deal about how to use the e-learning tools, such as what kinds of tools they could use and how to combine those tools with teaching English as a subject. Beyond the philosophy behind why we use this technology, however, they didn't have much knowledge about it. If a teacher wanted them to use e-learning tools, they could explore it by themselves, but they didn't have access to very much knowledgeable professional guidance. In contrast, preservice English teachers in Mainland China rarely devoted much effort to e-learning practices in English teaching and learning because their training did not teach them the basic skills of using e-learning tools for their teaching and learning. Therefore, the participants in Mainland China lacked the experience of teaching English with e-learning practices, and they did not know how to change that situation.

b. Preservice English teachers' Technological Knowledge (TK)

Preservice English teachers in Mainland China rarely knew how to organize and manage their classrooms by integrating e-learning practices for teaching English, because in terms of the teaching content, few professors opted to use diverse e-learning

tools to assist their teaching. Participants were rarely assigned to complete tasks via online discussion forums, and most student assignments, such as worksheets, were paper-typed. Other participants agreed that sometimes overusing the e-learning tools made the tools unattractive and that could influence the students' learning achievement. Moreover, preservice English teachers who studied in Hong Kong sometimes did know how to organize and manage their classrooms by integrating e-learning practices. Because preservice English teachers often became excited when they completed the online work, it was very hard to control the classroom and maintain discipline. For example, teachers provided online quiz platforms on which the students could compete, while other preservice English teachers just talked with other students and ignored the questions.

- **Understanding and Applying**

Preservice English teachers' Technological Knowledge (TK)

Some of them only focused on the answers and discussed with each other how to figure out the answers in order to get high marks. Therefore, classroom discipline was somewhat difficult to manage. Thus, the teachers used e-learning tools to record students' attendance and their learning progress, such as with *Google Class*, and *Edu Puzzle*, and that made it more convenient to organize and maintain discipline in the classroom. However, when teachers were doing preparations with their computers, they found it very difficult to achieve a balance between in-classroom discipline and lesson preparations. For example, some teachers were not familiar with how to complete some

exercises via applications on an iPad. If there were technical problems, teachers needed time to restart or update the applications, but in 40-minute lessons, it was very time-consuming to repair or change applications. Furthermore, the teachers pointed out that they rarely used e-learning tools to manage their classrooms. A problem occurred because after the students had withdrawn the e-learning applications it was difficult to manage, although preservice English teachers could lock and control the students' computers.

When the preservice English language teachers teaching engaged in their field practices, they found that the differences between the e-learning practices in Hong Kong and those in Mainland China could be divided into seven categories. The differences resided in the preservice English teachers'

- **Searching and Selecting**

Preservice English teachers' Technological Pedagogical Knowledge (TPK) and their Pedagogical Content Knowledge (PCK)

In detail, In Hong Kong, preservice English teacher rarely felt difficult to select effective teaching pedagogies to guide students thinking and learning in English. However, in mainland China, preservice English teacher often felt difficult to select effective teaching pedagogies to guide students thinking and learning in English. During the field practice in Hong Kong and mainland China, preservice English teacher disagree that they select educational technologies to use in their classroom that enhance

what and how they teach English and what student learn. Since the English proficiency of each students and facilities in schools are unequal, it is difficult to select educational technologies to use in their classroom that enhance what and how they teach English and what student learn.

- **Exploring**

Preservice English teachers' Technological Pedagogical Knowledge (TPK) and Technological Content Knowledge (TCK)

Both in Hong Kong and mainland China, preservice English teachers have neutral attitude towards that e-learning practices make possible different kind of learning styles to be catered in their field practices. Preservice English teachers often know how to use strategies that combine content, technologies and teaching approaches that they learnt about in their classroom. But in mainland China, preservice English teachers had limited knowledge about how to use strategies that combine content, technologies and teaching approaches that they learnt about in their classroom. In Hong Kong, preservice English teachers often interact with students in real time during their field practice no matter what kinds of e-learning practices they used. In mainland China, when preservice English teachers agree that if they frequently use different e-learning tools during the field practice, it really can enhance the interactions with students in real time. However, preservice English teachers have limited experiences and knowledge of implementing of e-learning practice in learning and teaching English.

- **Testing**

Preservice English teachers' Technological Pedagogical Knowledge (TPK) and their Technological Content Knowledge (TCK)

Comparing to the activities that preservice English teachers have experienced in training, there are differences in their field experience. In Hong Kong, during the field practice, if preservice English teachers do not use the e-learning practices, preservice English teachers sometimes show lot of pictures to lower-grade students regarding the content they teach. However, in mainland China, preservice English teachers very often show lot of pictures to lower-grade students regarding the content they teach, no matter they have experienced in training or their field experience. Both in Hong Kong and mainland China, preservice English teachers understand e-learning practices beneficially bridges pedagogical theories and teaching practices, but they disagree that this combination can improve their teaching skills.

- **Collaborating and Discussing**

Preservice English teachers' Technological Pedagogical Knowledge (TPK) and Pedagogical Content Knowledge (PCK)

In Hong Kong, preservice English teachers agree that online English teaching and learning discussions are generally intellectually stimulating and inspiring for their student. However, in mainland China, preservice English teachers have very limited opportunities to use online learning discussion forum. In Hong Kong, preservice English teachers disagree that they can provide leadership in helping others to

coordinate the use of content, technologies and teaching approach during the field practices. Since they are new teacher and they have limited experiences about being a good leader, they pointed about that they need more time to practice. In mainland China, preservice English teachers agree that they can provide leadership in helping others to coordinate the use of content, technologies and teaching approach during the field practices. Since normally teacher mentors were very busy and have limited time to guide preservice English teachers to completed field practice, therefore, they need to lead the discussion once they faced with problems about implementing e-learning practice by coordinating the use of content, technologies and teaching approach.

- **Understanding and Applying**

Preservice English teachers' Technological Pedagogical Knowledge (TPK) and their Technological Content Knowledge (TCK)

when completing the e-learning practice in Hong Kong, preservice English teachers agree that they know about technologies that they can use for understanding and teaching English with e-learning practices for their students. Meanwhile, preservice English teachers feel difficult to teach English that appropriately combine with my understandings for curriculum studies, technologies and teaching approaches both in Hong Kong and mainland China.

- **Creating and Promoting**

Preservice English teachers' Technological Pedagogical Knowledge (TPK)

During the field practices, preservice English teachers disagree that e-learning practices ease the process of their teaching in Hong Kong. Since based on the teaching content and holistic teaching environment, they need amount of time to prepare the lessons by different e-learning tools. However, in mainland China, during the field practices, preservice English teachers strongly agree that e-learning practices ease the process of their teaching. Since normally their in-classroom teaching are presented in simple way, if preservice English teachers implemented different e-learning practice during their teaching, preservice English teachers' students became more motivated and payed more attentions on their teaching content.

- **Analyzing and Synthesizing**

Preservice English teachers' their Pedagogical Content Knowledge (PCK)

in Hong Kong, during the field practice, preservice English teachers currently use *Sway* or *Mahara* to keep your teaching schedules during your field experiences. In mainland China, preservice English teachers currently use *Blogger* or *Word Documents* to keep your teaching schedules during your field experiences. Both in Hong Kong and mainland China, during the field experiences, preservice English teachers agree that e-learning practices accommodate the preference of students and teachers. However, in mainland China, preservice English teachers disagree that schools provide technology support for them about teaching and learning English before the start of the field

experience to reduce their anxiety. The situations in Hong Kong are different. preservice English teachers can always receive the support from schools before they go to attend field practice.

8.3 Contributions

Based on the TPACK framework, the similarities that Hong Kong and mainland China shared in terms of their e-learning practices for English language preservice teacher education were in regard to the practices of *Exploring, Testing, Collaborating and Discussing, Analyzing and Synthesizing* and *Understanding and Applying.* The primary aspects that differed between Hong Kong and mainland China had to do with the preservice English teachers' PK, CK, TPK and PCK (see Figure 41).

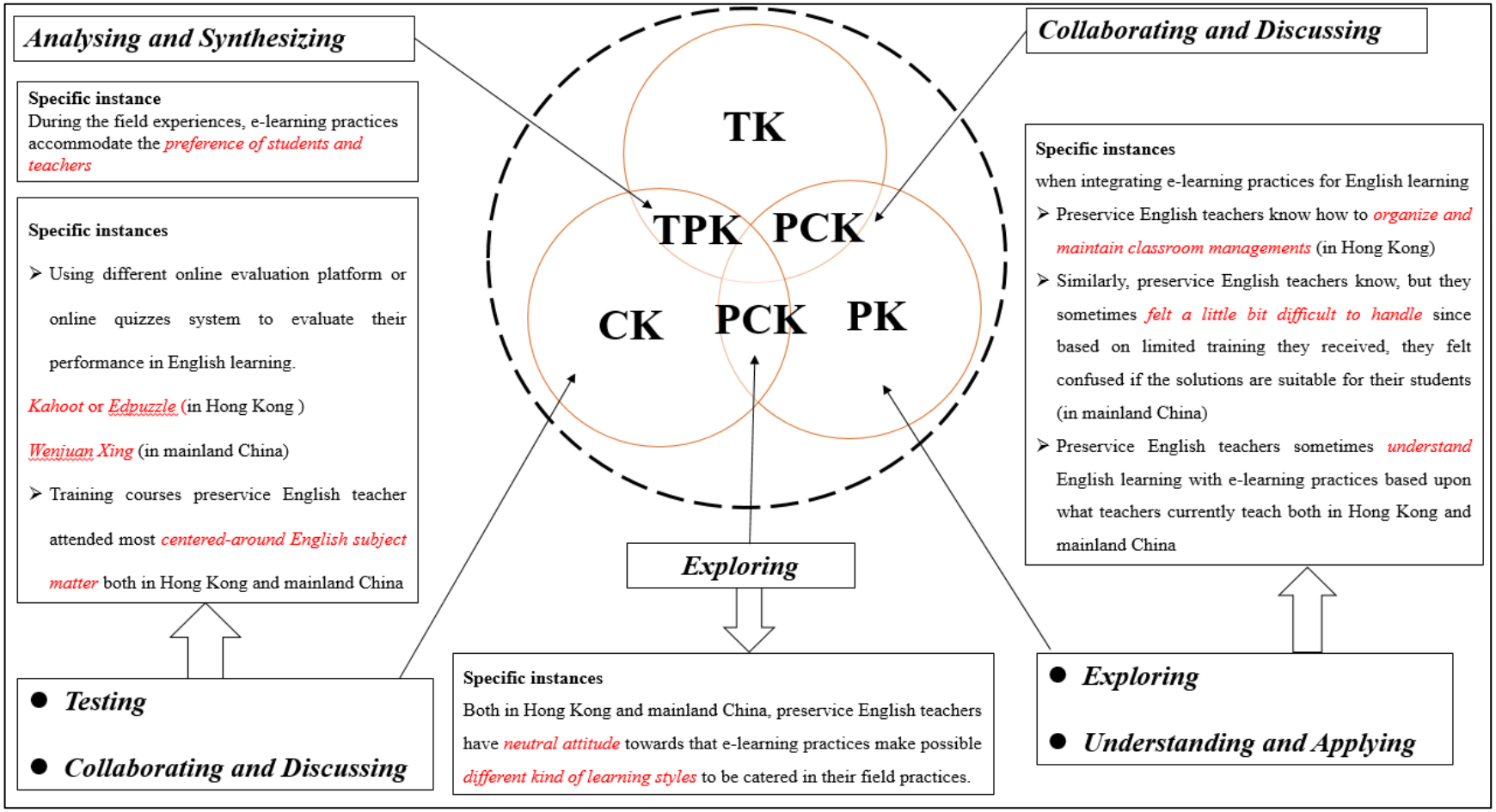

Figure 41.The similarities in implementation of e-learning practices in English language preservice teacher education between Hong Kong and Mainland China

When preservice English language teachers engaged in their field practice, they found that the differences between the e-learning practices in Hong Kong and those in mainland China could be divided into seven categories. The differences resided in the preservice English teachers' (1) TPK about *Searching and Selecting,* (2) their TPK and TCK about *Exploring*, (3) their TPK and TCK about *Testing*, (4) their PCK about *Analyzing and Synthesizing*, (5) their PCK, TCK and TPK about *Collaborating and Discussing,* (6) their TPK and TCK about *Understanding and Applying*, and (7) their TPK about *Creating and Promoting.* Meanwhile, the preservice English teachers who were studying in mainland China and in Hong Kong had varied opinions about the differences in understanding the functions of e-learning practices compared with those in experiencing activities for teaching English, although most believed there were more differences in understanding e-learning practices than there were in experiencing activities.

However, preservice English teachers who were studying in mainland China tended to agree that the differences were less important, because they all believed that both activities were helpful to their learning. The preservice English teachers even agreed that although the two activities of *understanding* and *experiencing* illustrate teaching content differently, they share the same essential aspects because both can help students learn. In Hong Kong, preservice English teachers had different opinions because e-learning was a lower priority than real-class activities. For example, in classroom activities, as a teacher, one could see clearly and first-hand exactly how the students

practiced and behaved. In addition, one could give feedback immediately. In contrast, with online activities, although the online tools could give users immediate feedback, the teacher was sitting behind the screen and evaluating the students' performance but not talking directly to them. (See Figure 42)

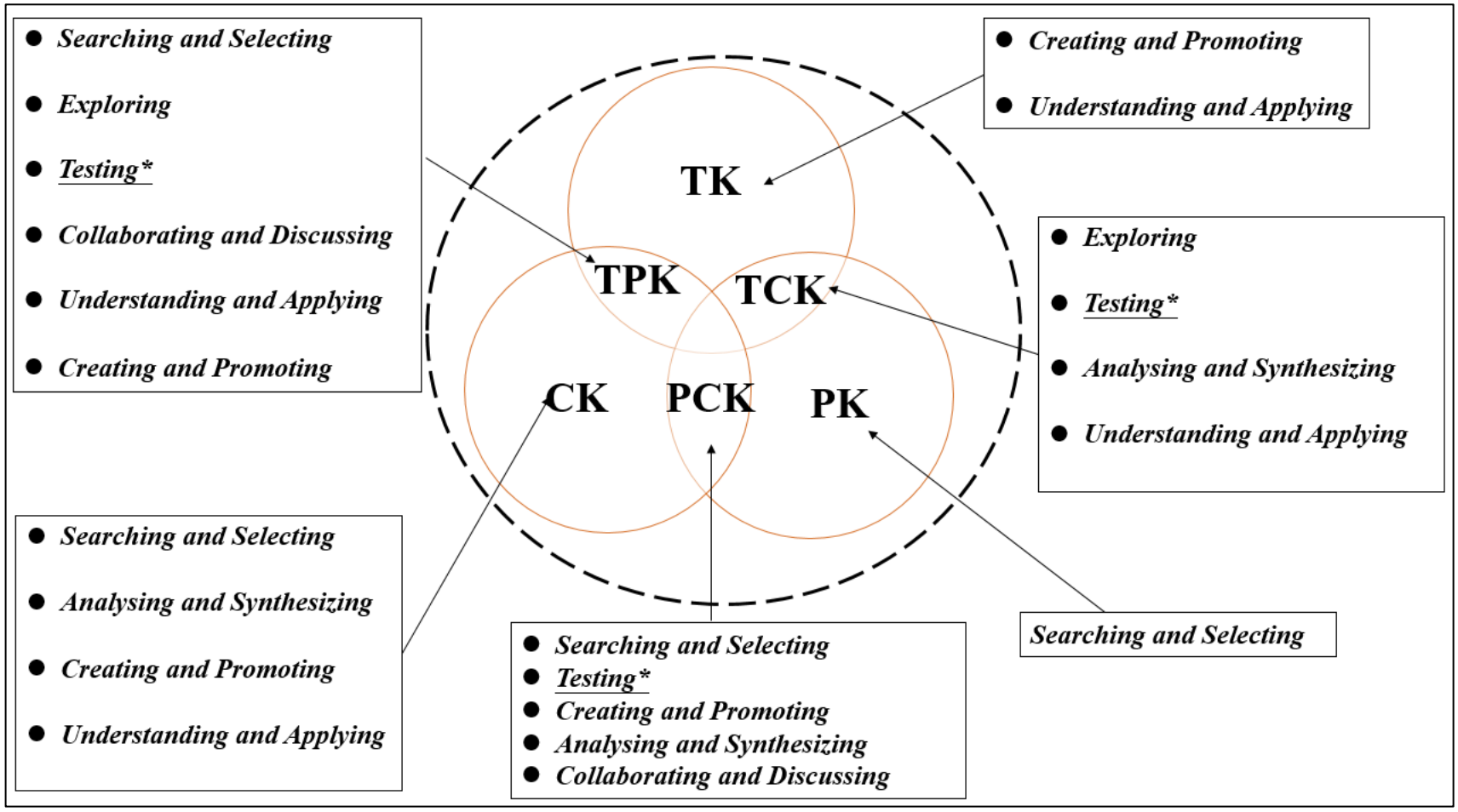

Figure 42. The differences in implementation of e-learning practices in English language preservice teacher education between Hong Kong and Mainland China

8.4 Implications of the Study

Implications of this study call for future participants to summarize their opinions, which are the situations in which e-learning practices were implemented both in their training experience and in their field practices. A dilemma exists in the current training programs — although teaching is the main task for preservice teachers, they have to learn to juggle multiple tasks, such as how to organize extracurricular activities. At present, preservice teachers have several abstract courses that only introduce theories. Therefore, preservice teachers advised that universities invite in-service teachers as guest speakers to share their experiences and skills with preservice teachers before the latter embark on their work on the front lines. For example, guest speakers could use online videos to give lectures to preservice teachers. Preservice teachers could easily learn and gain inspiration from in-service teachers. Finally, preservice teachers suggested that universities provide more opportunities for them to participate in field practice and to implement the content that they have learned.

In mainland China, student teachers cannot use certain e-learning teaching materials because their Internet access is limited. Thus, many English language teachers use Chinese to teach English. Professors at universities normally read from PowerPoint slides. In addition, there is very little communication between professors and students. After professors have finished a lesson, they do not provide students with a chance to consult. In regard to becoming good in-service teachers in future, participants submitted their suggestions for improvements to the present state of teacher education. In mainland China, student teachers agreed that professors should teach them more teaching skills, and better ones at that. Meanwhile, preservice teachers suggested that universities should offer more opportunities to actually teach rather than just having

them observe other teachers.

In Hong Kong, on the other hand, in addition to normal lessons, the universities provide tutoring and consultation. Professors not only teach by imparting their knowledge and skills, but they encourage discussion with students, and they accept students' opinions. After such discussion, professors in Hong Kong offer their feedback. Professors in Hong Kong pay more attention to training their students to think logically, and they train students to be able to speculate and not to simply become learning machines. In regard to becoming good in-service teachers in future, participants submitted their suggestions for improvements to the present state of teacher education. In Hong Kong, student teachers had more problems in managing the classroom than they did in teaching. In the real world, teachers have a heavy workload, not only of teaching but also of administrative duties. Student teachers suggested that in future, universities provide them with more opportunities for learning how to manage the classroom, and especially how to handle discipline issues. In addition, Hong Kong's local schools have special educational needs (SEN) students, and student teachers suggested that universities offer more workshops to help them learn how to handle the unique issues that come about when dealing with such students. In this study, the majority of participants in Hong Kong believed they had completed more effective e-learning practices during their field practice than during their university training, because during their university training, they mostly learned about and applied e-learning tools for completing assignments.

However, in their field work, student teachers spent significant time designing and creating different e-learning practices. Meanwhile, e-learning practices acted as

supplements for the content delivered in their in-class teaching. However, some professors provided very little formative assessments, and sometimes student teachers had few opportunities to communicate with their professors. During their training, some participants felt confused about their assignments because their professors did not provide detailed criteria for evaluation. In contrast, during their field practices, student teachers spent a great deal of time designing different e-learning practices for English learning. Finally, student teachers agreed that they had more chance to think critically during field practice. The more students did in their field practice, the more cognition they achieved. Online material and tools commonly used for learning proficiency in English are summarized in Table 45.

Table 45. The commonly used online material and e-learning tools Used to Learn Proficiency in English

English Learning Proficiency	**Commonly used online materials and e-learning tools for learning proficiency in English**	
	For Lower-Grade Students	**For Higher-Grade Students**
Listening Speaking	Diary of one pick kids from Netflix	Peppa Pig Cartoon Series
Reading Writing	Natural Spelling Method	Oxford Reading tree

8.5 Limitations of the Study

This study had certain limitations. First, the author only selected a small sample size of participants for the study, meaning that the research did not include all possible different research groups, and was aimed only at specific groups. Second, because this study investigated preservice English language teachers and the results are explained from those students' perspectives, and because of time limitations, experiences from in-service teachers are not included. This investigation was limited in the period of time

that was allowed, meaning that the research had to be concluded in a relatively short time frame.

8.6 Suggestions for Future Relevant Studies

As aforementioned limitations before, there are some suggestions for further research. Firstly, the bigger-sized participants could be involved. Those participants may come from different countries, different majors and so on. Comparing the diverse situations from those bigger-sized participants, researchers could understand and tell various situations among countries and majors. Secondly, in order to get fully reflections from teacher educators and student teachers, in the further, researchers could include the perspectives of both of them. Finally, because of time consuming, this study is completed within short-time duration. In the further, researchers could utilize more time to conduct the study, Meanwhile, in the further study, researchers could get more tiny and specific reflections by attending the classroom observation.

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Appendix A: Consent Form and Information Sheet

THE EDUCATION UNIVERSITY OF HONG KONG

Department of Mathematics and Information Technology

CONSENT TO PARTICIPATE IN RESEARCH

E-learning in English Language Learning in Pre-service Teacher Education: A Comparative Study between Hong Kong and Mainland China

I _____ hereby consent to participate in the captioned research supervised by **Dr. Lai Yiu Chi** and conducted by EdD Student **YANG RUIQIAN,** who are staff/ student of **Department of Mathematics and Information Technology** in The Education University of Hong Kong.

I understand that information obtained from this research may be used in future research and may be published. However, my right to privacy will be retained, i.e., my personal details will not be revealed.

The procedure as set out in the **attached** information sheet has been fully explained. I understand the benefits and risks involved. My participation in the project is voluntary.

I acknowledge that I have the right to question any part of the procedure and can withdraw at any time without negative consequences.

Name of participant _____

Signature of participant _____

Date _____

INFORMATION SHEET

E-learning Strategies in English Language Learning in Pre-service Teacher Education: A Comparative Study between Hong Kong and Mainland China

You are invited to participate in a project supervised by **Dr. Lai Yiu Chi** and conducted by **YANG RUIQIAN**, who are staff/ student of **Department of Mathematics and Information Technology** in The Education University of Hong Kong.

With the advancement of technology, the request for reforms in teacher education presses hard on its way both in Hong Kong and Mainland China. Teacher Professional development in using e-learning strategies lead massive debates in the field of education. The goal of this research is exploring e-learning strategies in English language learning in pre-service teacher education in Hong Kong and Mainland China. Meanwhile, how these strategies would be improved and transformed by student teachers during their own teaching practices. This study will adopt a mixed-method approach in the whole process. The questionnaires will be distributed to participants to collect quantitative data while the interview and in-class observation will be used to collect qualitative data. Meanwhile, the data from weekly teaching diaries would be examined to produce "thick" description on how they apply e-learning in their own classroom for qualitatively supporting the research. After reviewed the previous research, some potential limitations would be discussed. First, the sample size in this study is a little small. Second, this study is a single-handed study which means it is a little bit difficult to make each aspect perfect. Finally, costs and time. After the study is completed, the author will attend the international academic conference and publish the whole study to disseminated results of the study.

Your participation in the project is voluntary. You have every right to withdraw from the study at any time without negative consequences. All information related to you will remain confidential and will be identifiable by codes known only to the researcher.

If you would like to obtain more information about this study, please contact Bella at telephone number [redacted] or their supervisor Dr. Lai Yiu Chi at telephone number 2948 7648.

If you have any concerns about the conduct of this research study, please do not hesitate to contact the Human Research Ethics Committee by email at hrec@eduhk.hk or by mail to Research and Development Office, The Education University of Hong Kong.

Thank you for your interest in participating in this study.

_____

Principal Investigator

Appendix B: Questionnaire

E-learning practices in Pre-service English Language Teacher Education in Hong Kong and Mainland China

Dear Participants,

This questionnaire is designed for doing the research of e-learning practices in Pre-service English Language Teacher Education in Hong Kong and Mainland China. Your participation will assist us to understand the integration of these topic, in order to improve the application of the e-learning practices in Pre-service English Language Teacher Education. Your replies will be used for statistical data analysis, your personal name will not be presented into the research reports. The questionnaire should be completed within twenty minutes. If you agree to participate, please start to answer the following questions. Your kindly support is greatly appreciated by us.

Please read the following questions carefully, and click the option, which is most likely to represent your level. When you complete the questionnaire, please check whether there are omissions, and click submit. Thank you.

Part 1. Demographic Information

A1. Your gender is
- ○ **Male**
- ○ **Female**

A 2. Where are you from and currently studying in?
- ○ **Hong Kong, Hong Kong**
- ○ **Mainland China, Mainland China**
- ○ **Hong Kong, Mainland China**
- ○ **Mainland China, Hong Kong**

A 3. Which academic year are you in now?

- ○ **Year 1**
- ○ **Year 2**
- ○ **Year 3**
- ○ **Year 4**
- ○ **Year 5**

A 4. Have you joined any workshops or compulsory lessons about e-learning practices for teaching English before you enrolled the university?

- ○ **Joined**
- ○ **Not yet Joined**

A 5. Have you taught English in schools or tutorial center before you enrolled the university?

- ○ **Yes, I have**
- ○ **No, I have not**

A 6. Do you have any experience of field practices in any subjects before you enrolled the university?

- ○ **Yes, I have**
- ○ **No, I have not**

Part 2. In-Class Training in the University

2.1 Searching and Selecting

B 1. I select some proper e-learning practices from wide range of e-learning practices for English language teaching and learning.

- ○ **Always**
- ○ **Very often**
- ○ **Sometimes**
- ○ **Rarely**
- ○ **Never**

B 2. Teachers provide some video records of successful cases about teaching English by the implementations of e-learning practices to formulate English pedagogies.

- ○ **Always**
- ○ **Very often**
- ○ **Sometimes**
- ○ **Rarely**
- ○ **Never**

B 3. I know how to solve my own technical problems when I complete the e-learning practices in English.

- ○ **Always**
- ○ **Very often**
- ○ **Sometimes**
- ○ **Rarely**
- ○ **Never**

2.2 Exploring

C 1. I do not know how to organize and maintain classroom managements by integrating the e-learning practices for English learning.

- ○ **Always**
- ○ **Very often**
- ○ **Sometimes**
- ○ **Rarely**
- ○ **Never**

C 2. I learn more about English teaching by viewing my classmates' video clips.

- ○ **Strongly Disagree**
- ○ **Disagree**
- ○ **Neutral**
- ○ **Agree**
- ○ **Strongly Agree**

C 3. Which one of following technological tools do you always use for English language learning? (Please choose TWO out of five possible choices) *

- ☐ **Learning Management System**
- ☐ **Google**
- ☐ **Videos**
- ☐ **Social-Media**
- ☐ **E-Portfolio Platform**

2.3 Testing

D 1. I find that English teachers use listed methods to combine with e-learning practices in the training. (Please choose TWO out of five possible choices) *

- ☐ **Grammar-translation method**
- ☐ **Communicative method**
- ☐ **Cooperative method**
- ☐ **Modeling method**
- ☐ **Directing method**

D 2. I participate the training courses most centered-around English subject matter.

- ○ **Always**
- ○ **Very often**
- ○ **Sometimes**
- ○ **Rarely**
- ○ **Never**

D 3. I can use website Editors to test and modify the web pages about English teaching and learning.

- ○ **Always**
- ○ **Very often**
- ○ **Sometimes**
- ○ **Rarely**
- ○ **Never**

2.4 Analyzing and Synthesizing

E 1. I can adapt my learning style to different learners by following methods. (Please choose TWO out of five possible choices) *

- ☐ **Online English learning resources**
- ☐ **Online student responses to teacher**
- ☐ **Online collaborative activities**
- ☐ **Mobile-Apps**
- ☐ **MOOCs**

E 2. I think that the English learning skills development with e-learning practices can be of the same effectiveness as the face-to-face lessons.

- ○ **Strongly Disagree**
- ○ **Disagree**
- ○ **Neutral**
- ○ **Agree**
- ○ **Strongly Agree**

E 3. In general, what technical components with the implementations of e-learning practices are utilized when you are trained to be English teachers? (Please choose TWO out of five possible choices) *

- ☐ **Blogging**
- ☐ **Podcasting**
- ☐ **Video of another teachers' teaching**
- ☐ **Social Bookmarking**
- ☐ **Wiki**

2.5 Collaborating and Discussing

F 1. I know how to evaluate learners' performance by integrating the e-learning practices for English learning.

- ○ **Always**
- ○ **Very often**
- ○ **Sometimes**
- ○ **Rarely**
- ○ **Never**

F 2. I can discuss the English subject matter like an expert who specialized in English pre-service teacher education in e-learning practices.

- ○ **Always**
- ○ **Very often**
- ○ **Sometimes**
- ○ **Rarely**
- ○ **Never**

F 3. I have had sufficient opportunities to work with different technologies for e-learning practices in English learning and teaching.

- ○ **Always**
- ○ **Very often**
- ○ **Sometimes**
- ○ **Rarely**
- ○ **Never**

2.6 Understanding and Applying

G 1. I can understand my English learning with e-learning practices based upon what teachers currently teach.

- ○ **Always**
- ○ **Very often**
- ○ **Sometimes**
- ○ **Rarely**
- ○ **Never**

G 2. I have numerous methods to develop my understanding of e-learning practices in English pre-service teacher education.

- ○ **Strongly Disagree**
- ○ **Disagree**
- ○ **Neutral**
- ○ **Agree**
- ○ **Strongly Agree**

G 3. I have the technical skills and I need to use technology for gaining more experience for teaching English Language.

- ○ **Definitely**
- ○ **Very Probably**
- ○ **Possibly**
- ○ **Probably Not**
- ○ **Definitely No**

2.7 Creating and Promoting

H 1. What was the most TWO difficult parts of creating a unit of study that relied upon e-learning practices? (Please choose TWO out of five possible choices) *

- ☐ **What e-learning technologies can bring to teaching practices**
- ☐ **The impacts if e-learning technologies could not be handled properly in instruction**
- ☐ **How to customize e-learning-infused instructional materials with collected resources**
- ☐ **How to prepare in-class troubles with solutions not impeding e-learning-infused instructions**
- ☐ **How to use e-learning-infused instructions to enhance the teaching practices**

H 2. I devote a lot of effort to the e-learning practices in English teaching and learning.

- ○ **Always**
- ○ **Very often**
- ○ **Sometimes**
- ○ **Rarely**
- ○ **Never**

H 3. What learning goals do you have now as related to the e-learning practices?

- ○ **Providing me opportunities to integrate effective pedagogies**
- ○ **Assuring my schedule flexibility**
- ○ **Improving my learning outcomes**

- **Well-structured and organize information is available for me**
- **E-learning practices are aligned with courses and field practices**

Part 3. Self-modeling E-learning Practices in the Daily Life

J 1. I recap my planned e-learning practices to make myself more familiar with these practices in my daily life.

- Always
- Very often
- Sometimes
- Rarely
- Never

J 2. I believe that implementations of e-learning practices make myself more excited and satisfied with my lecture.

- **Strongly Disagree**
- **Disagree**
- **Neutral**
- **Agree**
- **Strongly Agree**

J 3. I believe that implementations of e-learning practices improve my senses of accomplishment.

- **Strongly Disagree**
- **Disagree**
- **Neutral**
- **Agree**
- **Strongly Agree**

J 4. The implementations of e-learning practices in English language teacher education make me more easily design the teaching content.

- **Strongly Disagree**
- **Disagree**
- **Neutral**
- **Agree**
- **Strongly Agree**

Part 4 Implementations of E-learning practices During the Field Experience

4.1 Searching and Selecting

K 1. I do not feel difficult to select effective teaching pedagogies to guide students thinking and learning in English.

- **Always**
- **Very often**
- **Sometimes**
- **Rarely**
- **Never**

K 2. I cannot select educational technologies to use in my classroom that enhance what and how I teach English and what student learn.

- ○ **Strongly Disagree**
- ○ **Disagree**
- ○ **Neutral**
- ○ **Agree**
- ○ **Strongly Agree**

K 3. What different e-learning practices you used to help your students to learn English. (Please choose THREE out of seven possible choices) *

- ☐ **Selecting and searching**
- ☐ **Exploring**
- ☐ **Testing**
- ☐ **Analysis and synthesize**
- ☐ **Collaborate and discuss**
- ☐ **Understand and apply**
- ☐ **Create and promote**

4.2 Exploring

L 1. E-learning practices make possible different kind of learning styles to be catered in my field practices.

- ○ **Strongly Disagree**
- ○ **Disagree**
- ○ **Neutral**
- ○ **Agree**
- ○ **Strongly Agree**

L 2. I cannot use strategies that combine content, technologies and teaching approaches that I learnt about in my classroom.

- ○ Always
- ○ Very often
- ○ Sometimes
- ○ Rarely
- ○ Never

L 3. E-learning practices allow me to interact with students in real time.

- ○ Always
- ○ Very often
- ○ Sometimes
- ○ Rarely
- ○ Never

4.3 Testing

M 1. My online work is generally applicable and/or relevant to the other work I was completing for this class.

- ○ **Strongly Disagree**
- ○ **Disagree**
- ○ **Neutral**
- ○ **Agree**
- ○ **Strongly Agree**

M 2. Comparing to the activities that you have experienced in training, there are

differences in your field experience if yourself do not use the e-learning practices, but to show lot of pictures to students regarding the content you teach.

- ○ Always
- ○ Very often
- ○ Sometimes
- ○ Rarely
- ○ Never

M 3. E-learning practices beneficially bridges pedagogical theories and teaching practices to improve my teaching skills.

- ○ **Strongly Disagree**
- ○ **Disagree**
- ○ **Neutral**
- ○ **Agree**
- ○ **Strongly Agree**

4.4 Analyzing and Synthesizing

N 1. Which type of e-Portfolio Platform do you currently use in your teaching to keep your teaching schedules during your field experiences?

- ○ **Mahara**
- ○ **Weebly**
- ○ **Blogger**
- ○ **WordPress**
- ○ **Other: (Please specify)**

N 2. During the field experiences, e-learning practices accommodate the preference of students and teachers.

- ○ **Always**
- ○ **Very often**
- ○ **Sometimes**
- ○ **Rarely**
- ○ **Never**

N 3. To reduce my anxiety, schools provide technology support for me about teaching and learning English before the start of the field experience.

- ○ **Always**
- ○ **Very often**
- ○ **Sometimes**
- ○ **Rarely**
- ○ **Never**

4.5 Collaborating and Discussing

R 1. Online English teaching and learning discussions are generally intellectually stimulating and inspiring for my student.

- ○ **Always**
- ○ **Very often**
- ○ **Sometimes**
- ○ **Rarely**
- ○ **Never**

R 2. I can provide leadership in helping others to coordinate the use of content, technologies and teaching approach during the field practices.

- ○ **Strongly Disagree**
- ○ **Disagree**
- ○ **Neutral**
- ○ **Agree**
- ○ **Strongly Agree**

R 3. I design the activities to let students create digital narratives by using e-learning practices on the topic of learning English in collaboration with their parents.

- ○ **Always**
- ○ **Very often**
- ○ **Sometimes**
- ○ **Rarely**
- ○ **Never**

4.6 Understanding and Applying

S 1. The time and effort I put into the e-learning practices of the course is generally worthwhile, given how much it assisted my professional development.

- ○ **Strongly Disagree**
- ○ **Disagree**
- ○ **Neutral**
- ○ **Agree**
- ○ **Strongly Agree**

S 2. I know about technologies that I can use for understanding and teaching English with e-learning practices for my students.

- ○ **Strongly Disagree**
- ○ **Disagree**
- ○ **Neutral**
- ○ **Agree**
- ○ **Strongly Agree**

S 3. I can teach English that appropriately combine with my understandings for curriculum studies, technologies and teaching approaches.

- ○ **Strongly Disagree**
- ○ **Disagree**
- ○ **Neutral**
- ○ **Agree**
- ○ **Strongly Agree**

4.7 Creating and Promoting

U 1. My professional development as an educator has benefited directly from online interactions through e-learning practices

- ○ **Strongly Disagree**
- ○ **Disagree**
- ○ **Neutral**
- ○ **Agree**
- ○ **Strongly Agree**

U 2. During the field practices, e-learning practices ease the process of my teaching.

- ○ **Strongly Disagree**
- ○ **Disagree**
- ○ **Neutral**
- ○ **Agree**
- ○ **Strongly Agree**

U 3. There are differences in *understanding* the functions of e-learning practices comparing with *experiencing* activities for teaching English.

- ○ **Much Higher**
- ○ **Higher**
- ○ **About the same**
- ○ **Lower**
- ○ **Much lower**

Appendix C: A Sample of Interview Transcription

Interview with one participant in Hong Kong

1--interviewer 2--Interviewee

1--How about Question K1? What is your reason?

2--I do not know how to teach students who are not very family with English. So, I do not know if my teaching methods are effective or not for those students. I usually complete the order from my boss in the tutor centre. Since the English level of my student is very different, I feel so difficult to teach my students sometimes. Besides, the financial status of students' family is also diverse, thus I do not think each family can afford the fees. They need more financial support.

1--How about Question M2? What is your reason?

2-- When I learnt e-learning practices, I can understand the concepts and usage of them. But when we really go to the field practice in the schools, I do not use them in most situations. Since limited tools and materials in the schools. If I bring my own IPAD into the classroom, it is unacceptable for ten students to use.

1--How about Question M1? What is your reason?

2-- I only can use it sometimes. I agree the function of it.

1--How about Question N2? What is your reason?

2-- Because my students told me that they do not like what I showed to them. If I say No, those students will start to pretend learning. Thus, it is difficult to balance the preferences between me and my students.

1--How about Question R3? What is your reason?

2--students also have very less chances to use e-learning methods to learn English. They use worksheets more. Since not every family has computer, so they may not understand the usage and functions of computer. Sometimes, their parents are not staying with them. After they came back to the house, they have no chance to review or learn new knowledge.

1--How about Question U3? What is your reason?

2--I use less e-learning practices during my teaching. So, it is difficult to say which one is more or less, so it is lower difference between them. It depends on the learning content. My students almost from grass-root families, so they are not rich.

1--How about Question G2? What is your reason?

2--I do not think I have many methods to understand the e-learning practices.

1--How about Question? What is your reason?

2--I know the skills but it does mean that I will use them each time and I am not sure if I can accumulate the using experiences. I normally change the orders to ask students to practice. Then students are not so tired.

1--How about Question N3? What is your reason?

2--less chances to use

1--Comparing, which is more? What is your reason?

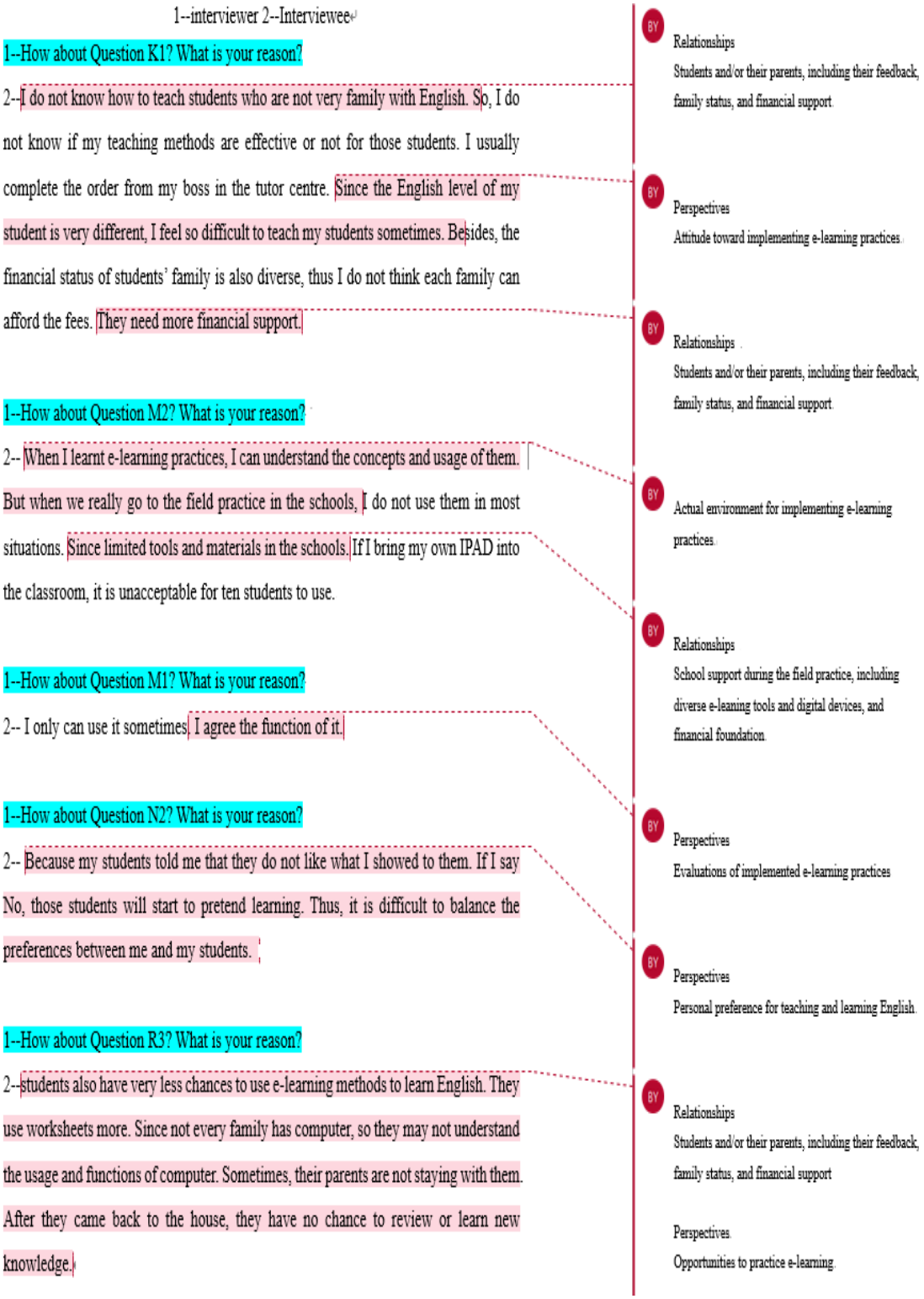
2--Present, some teachers mentioned. But how much I will use, it depends on where I intern.

1--What are your suggestions?

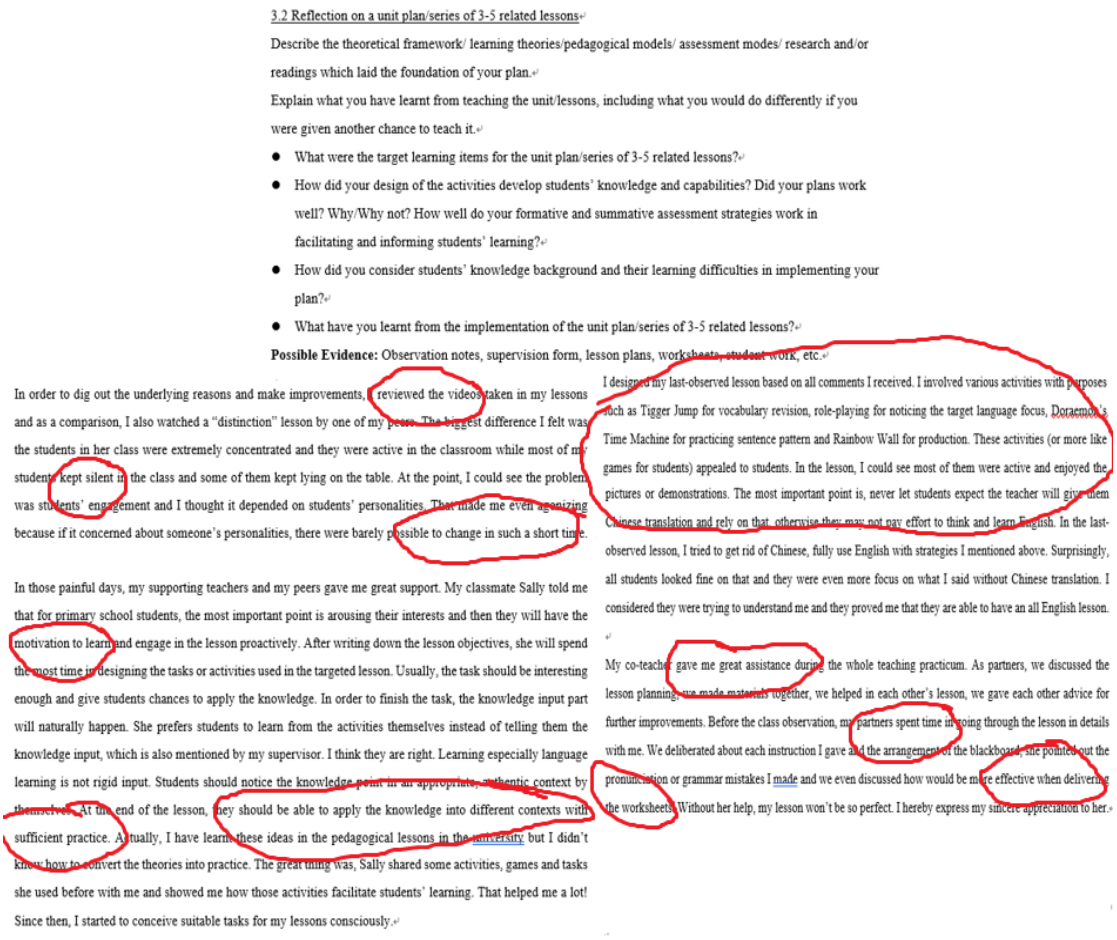
2--How do different pedagogies integrate into e-learning practices. Nowadays, teacher educators normally teach them individually. We learnt a lot of theories, I do not the consequences and achievements from student if I used them. I think there are too many assignments.

1--That is all. Thank you.

Appendix D: An Example of Code Notes on Interview Data



Appendix E: An Example of Code Notes on Weekly Diaries Data



3.2 Reflection on a unit plan/series of 3-5 related lessons

Describe the theoretical framework/ learning theories/pedagogical models/ assessment modes/ research and/or readings which laid the foundation of your plan.

Explain what you have learnt from teaching the unit/lessons, including what you would do differently if you were given another chance to teach it.

- What were the target learning items for the unit plan/series of 3-5 related lessons?
- How did your design of the activities develop students' knowledge and capabilities? Did your plans work well? Why/Why not? How well do your formative and summative assessment strategies work in facilitating and informing students' learning?
- How did you consider students' knowledge background and their learning difficulties in implementing your plan?
- What have you learnt from the implementation of the unit plan/series of 3-5 related lessons?

Possible Evidence: Observation notes, supervision form, lesson plans, worksheets, student work, etc.

In order to dig out the underlying reasons and make improvements, I reviewed the videos taken in my lessons and as a comparison, I also watched a "distinction" lesson by one of my peers. The biggest difference I felt was the students in her class were extremely concentrated and they were active in the classroom while most of my students kept silent in the class and some of them kept lying on the table. At the point, I could see the problem was students' engagement and I thought it depended on students' personalities. That made me even agonizing because if it concerned about someone's personalities, there were barely possible to change in such a short time.

In those painful days, my supporting teachers and my peers gave me great support. My classmate Sally told me that for primary school students, the most important point is arousing their interests and then they will have the motivation to learn and engage in the lesson proactively. After writing down the lesson objectives, she will spend the most time in designing the tasks or activities used in the targeted lesson. Usually, the task should be interesting enough and give students chances to apply the knowledge. In order to finish the task, the knowledge input part will naturally happen. She prefers students to learn from the activities themselves instead of telling them the knowledge input, which is also mentioned by my supervisor. I think they are right. Learning especially language learning is not rigid input. Students should notice the knowledge point in an appropriate, authentic context by themselves. At the end of the lesson, they should be able to apply the knowledge into different contexts with sufficient practice. Actually, I have learnt these ideas in the pedagogical lessons in the university but I didn't know how to convert the theories into practice. The great thing was, Sally shared some activities, games and tasks she used before with me and showed me how those activities facilitate students' learning. That helped me a lot! Since then, I started to conceive suitable tasks for my lessons consciously.

I designed my last-observed lesson based on all comments I received. I involved various activities with purposes such as Tigger Jump for vocabulary revision, role-playing for noticing the target language focus, Doraemon's Time Machine for practicing sentence pattern and Rainbow Wall for production. These activities (or more like games for students) appealed to students. In the lesson, I could see most of them were active and enjoyed the pictures or demonstrations. The most important point is, never let students expect the teacher will give them Chinese translation and rely on that, otherwise they may not pay effort to think and learn English. In the last-observed lesson, I tried to get rid of Chinese, fully use English with strategies I mentioned above. Surprisingly, all students looked fine on that and they were even more focus on what I said without Chinese translation. I considered they were trying to understand me and they proved me that they are able to have an all English lesson.

My co-teacher gave me great assistance during the whole teaching practicum. As partners, we discussed the lesson planning, we made materials together, we helped in each other's lesson, we gave each other advice for further improvements. Before the class observation, my partners spent time in going through the lesson in details with me. We deliberated about each instruction I gave and the arrangement of the blackboard, she pointed out the pronunciation or grammar mistakes I made and we even discussed how would be more effective when delivering the worksheets. Without her help, my lesson won't be so perfect. I hereby express my sincere appreciation to her.