Evaluating Vietnam's Pre-service English Teacher Education Program for Technology Integration in Education

Thi Kim Anh Vo (vtkanh@ufl.udn.vn)
University of Foreign Languages, The University of Danang, Vietnam

Vincent Pang (pvincent@ums.edu.my)
Universiti Malaysia Sabah, Malaysia

Lee Kean Wah (KeanWah.Lee@nottingham.edu.my)
School of Education, University of Nottingham, Malaysia

Abstract

With the rapid development of technology in the world today, the application of technology in education, thus, becomes a matter of great importance. In the English Teacher Competency Framework (ETCF) provided by the Vietnam Ministry of Education and Training, the ability to use technology in education is an essential aspect an English teacher program must include. As revealed from previous studies, English teachers' ability to integrate technology in education is weak as they have not been provided adequate opportunities to learn and integrate technology in education in their pre-service teacher education programs. This paper reports on part of findings of a case study conducted in Vietnam. The research adopted a qualitative approach with the in-depth interview as the instrument. Research participants consisted of experienced lecturers involved in designing the program and student teachers. Findings revealed that the program was not effective in educating student teachers in the methods of using technology in teaching. The reasons for such inadequacy were lack of knowledge of technology integration in language teaching, poor facilities, and low ICT capacity. Integrating technology in the curriculum is suggested for developing student teachers' ability to apply technology in education.

Keywords: Teacher education, Technology in education, Language teaching methodology, Teaching practicum

Introduction

Education is becoming increasingly reliant on technology and the internet with a great demand for technology use in teaching (Butzin, 2001; Cobb, 2006). Recognizing the importance of technology in education in general and language learning in particular, the Ministry of Education and Training (MOET) in Vietnam has pushed forward the use of technology in education by choosing the school year 2008- 2009 as the year of information and communication technology (ICT) use (Peeraer & Petergem, 2011), and by organizing ICT training courses for teachers of English throughout the country (Pham et al., 2019; Vo, 2017a). Technology in education is a compulsory subject in the framework of all English language teacher education programs supported by MOET.

In 2008, the National Foreign Language 2020 (NFL 2020) project was implemented to upgrade the quality of foreign language teachers in Vietnam. ICT for language learning and teaching is a component among five components of the training program for teachers of English

organized by the National Foreign Language 2020 project (Vo, 2017b). However, teachers of English still have many challenges in the application of technology in their teaching. According to Pham et al. (2019), the level of technology integration in teaching English in Vietnam is low and at the beginning stage of the Substitution, Augmentation, Modification, and Redefining model (SAMR model) proposed by Puentedura (2012). The reasons for this low level of technology adoption in language teaching are teachers' low confidence, teachers' poor knowledge of technology in education, under-developed facilities, and irrelevant school policies (Le & Vo, 2014; Pham et al., 2019: Peeraer & Petergem, 2011; Winley & Lau, 2012).

A major objective in the MOET framework for pre-service English teacher education programs is the development of the ability to use technology in language teaching. Nevertheless, students graduating from the program still find it hard to apply technology in language teaching (Vo, 2019). Although students are equipped with modern teaching techniques including technology use in language teaching, they tend to use traditional teaching methods when they leave university to become teachers of English (Nguyen, 2017; Vo, 2018; Vo, 2019). According to Nguyen (2017), during teaching practicum, instead of applying modern teaching methodology, students imitate the teaching methods used by school teachers.

Several solutions have been suggested to address the issue. Nguyen (2017) proposed a model of peer mentoring in which students cooperate to mentor their friends' use of teaching methods. Vo (2018) suggested stronger cooperation between university lecturers and school teachers in guiding student teachers on how to teach. However, these recent studies explored the process of learning how to teach in pre-service teacher education especially teaching practicum, and did not examine the ability of English teacher education programs to develop pre-service teachers' capacity for technology integration in language teaching. Our research was conducted to discover the reasons why teachers of English still find it hard to use technology in language learning even after graduating from a four-year English teacher education program. It is hoped the findings presented in this article could contribute to the development of pre-service English teachers' ability to integrate technology in their future teaching.

Literature Review

Technology in English language teaching

Computers were first introduced into education in the 1970s (Pollard & Pollard, 2004). Currently, the application of technology in education is a major element of the global education reform agenda (Peeraer & Petergem, 2011). Technology integration is defined as how teachers use technology to perform class activities more effectively and the way this usage could re-shape classroom activities (Gilakjani, 2017; Hennessy et al., 2005). Dockstader (1999) sees technology integration as the use of technology to improve the educational environment.

Billions of dollars have been invested in technology worldwide in the belief of educational technology as "a potential means for making the students' learning experiences richer and the teachers' jobs easier" (James, 1996, p.20). Technological devices, software, and infrastructure are thought to enhance the process of teaching (Donnelly et al., 2011; Peeraer & Petergem, 2011; Roach, 2010). Technology use in education makes language learning more dynamic while allowing teachers to have certain control over their students' independent development. Cooperation in language learning could be achieved through the use of such technological platforms such as Blackboard, Facebook, or Microsoft Teams (Ahmadi, 2018). Students not only have opportunities to develop their language proficiency but also acquire experience in cooperation in online learning environments. In addition, teachers find it more convenient when applying technology in their teaching to control students' learning activities (Pham et al., 2019).

The rapid development of technology allows teachers to select appropriate technological devices for their teaching. Various software products have been created for different kinds of English skills (i.e. listening, speaking, writing, and reading). Teachers may choose to use specific types of technological devices based on pedagogical objectives, institutional decisions, cost-effectiveness, and user-friendliness (Stockwell, 2007).

Technology in language teaching in the Vietnamese context

Technology in education is thought to be the key factor to upgrade the quality of English language teaching in Vietnam. The focus of technology integration in education is expressed in Directive 55 of MOET (MOET, 2008). The slogan "Friendly school, Active students" in the Directive is aimed at encouraging teachers to apply technology in their lessons. Realizing the importance of technology in education, the Vietnamese government has invested heavily in the adoption of such technology; this has resulted in a jump of 15 spots on a worldwide list measuring ICT development and put Vietnam among the top 10 developing countries (Peeraer & Petergem, 2011).

A major objective of the NFL 2020 project is to equip teachers of English with the ability to apply technology in their teaching. Training courses on ICT have been organized for teachers of English from primary to tertiary levels. Besides training, facilities to support the use of technology in teaching have also been created or made available (Le & Vo, 2014). All schools throughout the country are equipped with computers and with the help of Viettel, one of the biggest communication and information technology companies in Vietnam, schools have access to free internet (Dang, 2011). In other words, the Vietnamese government has tried its best for the adoption of technology in English teaching.

Despite the Vietnamese government's efforts to push for the use of technology in education, the scenario of technology in language teaching and learning is, however, still at the beginning stage (Peeraer & Petergem, 2011). The application of technology in English teaching is quite limited due to some constraints (Dang, 2011; Le & Vo, 2014; Peeraer & Petergem, 2011; Pham et al., 2019; Winley & Lau, 2012). Firstly, there is a lack of on-going financial support for the use of technological devices. Although schools are equipped with computers, there is a limited budget to maintain the equipment. Secondly, teachers of English have low technology use capacity because they have not been trained sufficiently during their English education programs (Pham et al., 2019; Vo, 2017b). Thirdly, teachers of English are reluctant to change their current teaching methods and adopt new approaches and technology in their lessons. Therefore, technology integration in English language teaching in Vietnam is still at a low level (Pham et al., 2019).

Pre-service English teacher education programs in Vietnam

Pre-service English teacher education programs in Vietnam are created to educate teachers of English for all levels of schooling from primary to university. Since all programs are designed based on the framework given by MOET, these are, then, largely similar (Nguyen, 2014). There are two major components of the program: general knowledge and professional knowledge (Nguyen, 2017; Vo et al., 2018). The general knowledge component aims to provide students with general knowledge such as physical education, military knowledge, Vietnamese, and psychology. The professional knowledge component includes subjects to develop students' professional knowledge and skills related to English proficiency development and language teaching. Pre-service English teacher education programs may take up to four years with a total load of approximately 150 credits (Vo, 2019).

Technology in education in pre-service English teacher education programs

Developing the ability to apply technology in English teaching and learning is one of the aims in the MOET framework for pre-service English teacher education programs in Vietnam. A Technology in Education course is included in the pre-service English teacher education program curriculum in University of Foreign Language Studies (UFLS), the University of Danang (UFLS, 2015). In the pre-service English teacher education program curriculum in Ho Chi Minh City University of Education (HCMCUE), students develop their ability to apply technology in education through the E-Learning in English Teaching course and Discovering E-resources for English Teaching course (HCMCUE, 2016). Students in Hue University of Foreign Languages (HUFLS) are offered a Technology in Language Teaching course (HUFLS, 2012). Similarly, University of Languages and International Studies (ULIS) develops their students' ability to use technology in education through their Technology in Education course (ULIS, 2015). The total credits allocated to these courses are from two to three credits. All these courses use a combination of theory and practice which aimes at providing students with knowledge on technology integration in teaching English as a foreign language and the opportunity to practice such theory (HUFLS, 2012; ULIS, 2015; UFLS, 2015).

Previous studies

Previous studies in developed countries

In the past two decades, the rapid expansion of the application of technology in language teaching and learning has resulted in an increasing number of related studies in developed countries (Dang, 2011). According to Stockwell (2007), there were 206 empirical research articles on technology use in language teaching between 2001 and 2005 in four well-known journals - *CALLICO Journal, CALL, Language Learning & Technology, and RECALL*. Extensive research has been conducted to investigate the use of technology in different language skills such as listening, speaking, reading, vocabulary, grammar, and writing. Al-Sehayer (2001) studied the influence of annotating difficult vocabulary in a text with various modalities such as graphics, text, and visual. Allum (2002) conducted comparative research to examine the effects of using Hot Potatoes to design activities to develop students' grammatical accuracy. A framework for teachers' integration of ICT into their classroom practice was introduced to help teachers acquire the know-how on ICT adoption in their teaching (Donnelly et al., 2011).

According to Norris et al. (2003), technology in education should accompany pre-service teacher education. The integration of technology into the curriculum to develop pre-service language teachers' ability to use technology in their later teaching is a key factor for the spread of technology in language teaching (Swain, 2006).

Previous studies in South East Asia countries

Southeast Asian countries like Thailand, Malaysia, and Singapore have produced many studies related to the use of technology in English language teaching. These studies focused mainly on the tools that could be applied in English teaching and their methods of use. Mansor (2007) explored the use of emails to develop writing skills in English. Findings revealed that the use of emails helped enhance students' collaboration in learning how to write in English. Another research conducted in Universiti Sains Malaysia examined the use of Facebook in English learning and teaching (Mansor, 2007). The study showed that Facebook could be used effectively as an online learning environment for English teaching and learning.

Although there have not been many research articles on the application of technology in teaching English, some studies are available on technology integration in pre-service English teacher education programs. Han et al. (2019) compared ICT implementations between two institutes in Vietnam and Malaysia. The results showed that student teachers were reluctant to use technology in English teaching because the implementation of the pre-service English

teacher education programs failed to develop their ability to apply technology in teaching English.

Previous Studies in Vietnam

Similar to other countries, there has been considerable research interest in Vietnam on technology in language learning with studies conducted on the usage of social networks and other platforms to facilitate English teaching and learning. Vo (2015) investigated the use of e-learning in an institute to provide students with more interaction in English learning. Nguyen and Pham (2014) studied how courseware *Dyned* helped develop students' English ability in a university in the center of Vietnam. However, although findings from these studies highlighted the adoption of technology as effective in English teaching, lecturers were not interested in using technology in their lessons (Ho, 2014) which may have resulted in the low technology application level of pre-service English students.

Teachers of English have a very low level of technology use in English teaching (Pham et al., 2019). Various reasons have been proposed for this, and primary among these is the pre-service teacher education programs (Dang, 2011; Roach, 2010). Researchers in this study, therefore, hope that their findings might highlight the effectiveness level of the pre-service English teacher education in Vietnam in developing students' ability to integrate technology in their teaching, and the factors affecting the development of students' ability to apply technology in English teaching.

Methodology

The research is a case study which adopted a qualitative approach using in-depth interviews as the instrument. The study was conducted in a typical pre-service English teacher education program that educates teachers of English second and high schools in Vietnam. To maintain confidentiality for the research site, the pseudonym Public University of Foreign Languages (PUFL) was used. The research questions are:

1. What is the perception of the students and teachers on the effectiveness of the English teacher education program in developing pre-service teachers' ability to use technology in education?
2. What factors affect the effectiveness of developing pre-service English teachers' ability to use technology in education?

The setting of the research

The research was conducted in a typical university that educates teachers of foreign languages in Vietnam. The pre-service English teacher education program is one of three foreign language teacher education programs implemented by the university. Every year, around 80 students are recruited into the program. The university has established an e-learning system conducted on MOODLE with the expectation that technology integration in language teaching and learning in the university can be enhanced. In addition, training has been provided to lecturers to enable them to conduct their online classes in tandem with face-to-face class. However, a number of lecturers have created their online classes with limited use (Ho, 2014).

Participants

Purposive sampling was adopted for the selection of research participants. For lecturer participants, the criteria were they had to be designers of the program and also lecturers in the program. Students were selected based on two criteria: they were about to complete the

program and had taken part in managing the classes either as secretaries or monitors since these would have given them a good understanding of the program when they were responsible for handling class activities and working as connectors between students and university. Seven students and four lecturers were selected for the interview. Three of the pre-service teachers were males and four other females. One lecturer was male while three lecturers were females.

Data Collection and Analysis

Data was collected through semi-structured interviews. Prior to the main study, a pilot of the instrument was conducted with two interviewees after which the interview questions were then modified to better serve the research purpose. All recordings were transcribed into Word documents.

Data was processed according to codes and themes. In the study, member checking was used to validate the data collected. According to Merriam (2009), member checking is an effective method of ensuring research validity and reliability since it is "a process in which the researcher asks one or more participants in the study to check the accuracy of the account" (Creswell, 2003, p.259). In our research, transcripts of the interview were sent to interviewees to check whether what they presented in the interview had been accurately transcribed. We also sent participants the codes and themes of the qualitative data together with what they had said in their interviews for them to confirm that the interpretations were correct.

Results

Research question 1

What is the perception of the students and teachers on the effectiveness of the English teacher education program in developing pre-service teachers' ability to use technology in education?

The program had the Technology for Language Learning course aimed at developing students' ability to integrate technology in education. The course was allocated two credits and had five modules: Overview of Educational Technology and Technology Integration, Searching for Resources on the Web, Using Word Processing for Programs for Language Learning, Creating Interactive Exercises with Hot Potatoes, and Creating Multimedia Presentations with Microsoft PowerPoint and Windows Movie Maker. Students were given opportunities to practice after each module.

From the lecturers' perspectives, students were provided with the knowledge to apply technology in their future teaching. They were introduced to basic theories of technology adoption in language learning in the course, and they also had opportunities to learn some tools for technology integration in education.

> *"I think students have good background for using technology in English teaching and learning. You know, they have one course for that. During the course, they learn theories and have chances to practice what they learn."*
>
> (Interview with Lecturer 3)
>
> *"Oh, students must know how to apply technology in their teaching. What they learn from methodological courses can help them to do that. The program also has one course for that issue, so students are provided with enough knowledge for adopting technology in education"*
>
> (Interview with Lecturer 1)

Students, however, had different opinions: three students thought that they did not learn much from the course because it was theoretical when what they needed were the tools that they could use in their teaching. They also felt that since PowerPoint and Microsoft Word were very common, these should not have been included in the course.

> *"Q: How effective is the program in developing students' ability to integrate technology in language teaching and learning?*
> *A: To be honest, I have to say that I do not think we actually know how to use technology in our teaching. We have one course for that but it is theoretical and some modules are not necessary.*
> *Q: Which module?*
> *A: The ones on PowerPoint and Microsoft Word. I learnt PowerPoint and Word when I was at school, so I think these should be removed."*
> (Interview with Student 7)
> *"Q: How effective is the program in developing students' ability to integrate technology in language teaching and learning?*
> *A: ...not sure it is effective. I would love to have more specific tools to use and some demonstrations. It is better if we can have methodological courses in which some technology integration knowledge is included. "*
> (Interview with Student 5)

Overall, the pre-service English teacher education program seemed unable to provide students with sufficient knowledge and skills in using or integrating technology into their teaching. The course aimed at developing students' ability to integrate technology in education was theoretical-based and contained some modules deemed unnecessary.

The interview with seven students who had completed their program showed that they adopted technology in their teaching to some degree. However, all of them admitted that they only used PowerPoint during their teaching practicum.

> *"Q: How effective is the program in developing students' ability to integrate technology in language teaching and learning?*
> *A: Effective enough though I prefer to be provided with what I should do to adopt different techniques in English skills like listening, speaking or writing. I think with different skills, we need different ways to use technology in our lessons."*
> (Interview with Student 4)
> *"Q: How effective is the program in developing students' ability to integrate technology in language teaching and learning?*
> *A: I just had some periods of teaching at high school, so I cannot say how effective but theories cannot help in real practice. We learnt some theories in the program and then we are not sure whether we can apply theories in teaching."*
> (Interview with Student 1)

Overall, the pre-service English teacher education program seems not to provide students with sufficient knowledge and skills to use technology in their teaching. The course for developing students' ability to integrate technology in education is theoretical and contains some unnecessary modules.

The interview with seven students who have finished their program shows that they adopted technology in their teaching to some extent. Yet, all of them admitted that they just used PowerPoint in their teaching during the teaching practicum.

> *"Q: Did you integrate technology in your teaching in your teaching practicum?*
> *A: Yes to some extent.*
> *Q: What did you do to adopt technology in your lesson?*

A: Oh, I used PowerPoint to make my lesson more interesting."
(Interview with Student 1)
"Q: Did you integrate technology in your teaching in your teaching practicum?
A: Yes, of course.
Q: What did you do to adopt technology in your lesson?
A: PowerPoint. You know when we teach, slides are very useful. We can save time and also have more colorful lessons."
(Interview with Student 4)

Although students were provided with a certain amount of knowledge and tools to use in technology integration in language learning, their usage of these was limited to the use of PowerPoint. This indicated quite a low level of technology integration, at merely the beginning stage or the Substitution stage of SAMR model.

To sum up, the program was ineffective in developing students' ability to use technology in education. The Technology for Language Learning course failed to equip students with adequate knowledge and skills to integrate technology into their teaching. Students' level of technology integration in education was merely at the beginning level of SAMR model.

Research question 2

What factors affect the effectiveness of developing pre-service English teachers' ability to use technology in educations?

ICT capacity

ICT capacity is one factor that influences students' ability to use technology in education. Five of seven student participants felt unconfident with technology because of their ICT capacity. According to them, they wanted to explore some tools for their teaching, but they could not due to their limited computer ability.

"Q: What factors affect your use of technology in teaching?
A; .....I want to conduct some games using Hot Potatoes but I cannot. I learnt something from the course (Technology for Language Learning course) and then forgot. I come from the rural area, so I do not have good ability of computer use."
(Interview with Student 1)
Only two of them thought that they were good at computer.
"A: ....I think I am good at computer skill. I even obtain the certificate of software development, so using educational tools like Hot Potatoes is not a matter with me. I also know many websites where we can create exercises, quiz or games for language learning such as BBC six minutes, Quizlet.com, and so on"
(Interview with Student 5)

Lecturers shared the same view that students' capacity of ICT as one factor preventing them from developing their ability to use technology in future teaching. In their opinion, a 30-period course was not adequate to provide students with both theories of technology integration in language learning and ICT skills. In addition, those who were entrusted with teaching the Technology for Language Learning course were English lecturers. They were expected that they would help students acquire skills on how to integrate technology in education, not to teach ICT.

"Q: What factors affect the effectiveness of developing pre-service English teachers' ability to use technology in educations in the program?

A: ...Students' low ICT ability is one of major elements. Some students do not have conditions to learn computer courses, so they have difficulties in exploring ICT tools for language learning and teaching"

<div align="right">(Interview with Lecturer 3)</div>

"Q: What factors affect the effectiveness of developing pre-service English teachers' ability to use technology in education in the program?
A: I think computer skill is one factor. You know, we are English lecturers, so we have a limited ability of ICT tools and actually we cannot have enough time and ability to teach students about ICT. We just focus on how to integrate technology in education theoretically."

<div align="right">(Interview with Lecturer 4)</div>

In other words, the low capacity of ICT results in constraints to prevent pre-service English teachers from developing the ability to integrate technology in education.

Pedagogical knowledge for technology integration

Pedagogical knowledge for integrating technology in language learning and teaching is another reason for the ineffectiveness of the program in developing students' ability to use technology in education. Students complained that they knew they should adopt ICT in their teaching, but they did not know how to integrate this into their lessons. Although the Technology for Language Learning course helped them gain some notion of technology integration in language teaching, the knowledge was somewhat theoretical. The course focused more on basic theories and tools and lacked aspects of active introduction to the application of tools for different language skills. There was a loose connection between methodological courses and the course itself.

"Q: What prevents you from applying technology in your teaching?
A: ......I know some theories but I do not know how to use technology in my teaching. I think I need specific instructions like how to make my listening lessons more interesting and effective using ICT tools."

<div align="right">(Interview with Student 4)</div>

"Q: What prevents you from applying technology in your teaching?
A: ....i think I need some demonstrations for different skills and some mi-cro teaching to learn how to apply ICT in teaching. I am not bad at ICT, but I feel confused with the way to adopt it in my teaching. We had very good methodological courses, but unluckily the courses are separated from the course "Technology for Language Learning"

<div align="right">(Interview with Student 5)</div>

According to the lecturer participants, they often used PowerPoint in their teaching. Only one lecturer said that he used online courses and tools such as Hot Potatoes to support his teaching. The students, therefore, did not often have the opportunity to observe many demonstrations of technology integration in teaching during their program.

"Q: What technological devices do you use in your teaching?
A: ...actually I do not use many devices except for PowerPoint. Sometimes, I use videos."

<div align="right">(Interview with Lecturer 1)</div>

"Q: What technological devices do you use in your teaching?
A: Not many. But I use online courses to supplement my lessons. Occasionally, I use Hot Potatoes software to create some interactive exercises."

<div align="right">(Interview with Lecturer 4)</div>

Facilities

Facilities are a constraint on the students' ability to develop technology in education. Three student participants did not have their laptops so it was difficult for them to practise what they learnt in their Technology for Language Learning course. Both lecturers and student interview participants thought that the university facilities were insufficient for adopting technology in teaching. Internet access was of poor quality which did not enable the lecturers to use online tools and online resources in their lessons.

> *"Q: What technological devices do you use in your teaching?*
> *A: I know that I need to integrate technology in my teaching, but besides PowerPoint, I dare not use any because of our facilities. It takes lot of time to prepare for using online tools and courses, but then I have to give up because of the low internet speed"*
> (Interview with Lecturer 3)

The inadequate facilities hindered the students from developing their ability to use technology in education sufficiently.

Overall, the findings of the research showed that the pre-service English teacher education program in PUFL did not develop students' ability to use technology in education as effectively as expected. The challenges for the program to achieve its goal of helping students integrate technology in language learning were poor facilities, irrelevant pedagogical content of the Technology for a Language learning course, and low ICT capacity.

Discussion and Implications

One of the key aims of in-service teacher education programs is to equip students with the ability to use technology in education. However, the pre-service teacher education program in PUFL presented certain difficulties in achieving its aim to develop their students' technology integration ability. This issue is similarly presented elsewhere around the world; according to Norris et al. (2003), English pre-service teacher education programs fail to develop students' ability to use technology in their teaching. Pre-service teachers of English cannot adopt technology in their teaching due to the implementation of pre-service teacher education programs (Carlson & Reidy, 2004; Friedman, 2006). In Vietnam, it is revealed that the ability of in-service teachers of English to use technology in education is just at the beginning level of the SAMR model with the reason partly a result from their pre-service English teacher education programs (Peeraer & Petergem, 2011; Pham et al., 2019; Vo et al., 2018).

Lack of facilities is one constraint for the ineffectiveness of pre-service English teacher education programs to develop the ability to integrate technology in education. According to Nguyen and Pham (2014), some students do not have their laptops and internet access for their ICT practice at home. Universities still have issues with internet access (Ho, 2014; Nguyen & Pham, 2014). The slow internet speed and lack of computer rooms in universities prevent lecturers and students from using technology in their teaching and learning (Carlson & Reidy, 2004; Friedman, 2006; Norris et al., 2003; Ho, 2014; Swain, 2006).

According to Swain (2006), ineffective technology integration in the curriculum negatively affects students' development of the ability to use technology in teaching in their future careers. Pre-service English teacher education programs in Vietnam rely on one or two courses for technology integration in education to develop students' ability to use technology in language learning (HUFLS, 2012; HCMCUE, 2016; Vo, 2019; UFLS 2015; UFLIS, 2015). These courses equip students with certain knowledge and skills for adopting technology in language teaching and learning. The courses, however, are separate from methodological courses, and the contents of these courses focus more on theories and basic ICT tool knowledge. Students, therefore, do not have many opportunities to be exposed to technology integration in

language teaching (HUFLS, 2012; HCMCUE, 2016; UFLS 2015; UFLIS, 2015).

Pre-service English teacher education programs in Vietnam have not been designed for technology integration in the curricular, so students lack exposure to the application of technology in education. According to Ho (2014), the use of technology in teaching and learning mostly limits itself to Microsoft Office PowerPoint in class. Only a few lecturers make use of online courses or Facebook as a tool to support their teaching. This results in students' low competence to adopt technology in their future teaching (Hermandez-Ramos, 2005).

Therefore, integrating technology into the curriculum is suggested to improve the ability of pre-service English teacher education programs to develop students' ability to use technology in education where "…integrating technology into curricular with the intent of positively influencing teaching and learning has been in a state of evolution over the past 20 years" (Afshari et al., 2009, p.2). According to Flanagan and Jacobsen (2003), technology integration into the curricula means ICT across the circular as opposed to being a separate course or topic itself. The integration of technology or ICT into a curriculum could bring certain benefits such as engaging students in thinking, decision making, and problem-solving by providing opportunities for practice through learning (Afshari et al., 2009, p.1). Therefore, integrating technology into the curriculum is necessary to improve the implementation of the program for two reasons: firstly, the integration of technology in the curriculum could help increase the opportunity for practice for students and secondly, the integration of technology into the curriculum is a viable way to instill awareness and familiarity among pre-service teachers on the use of technology in their later teaching.

According to Schmidt (1998), there are two possible approaches to integrate technology into teacher education programs. The first is to offer an instructional technology course. Although the program has one 30-period course on technology in education to develop students' skills to apply technology into language teaching, this approach has proven to be ineffective as it focuses more on teaching students how to use technology rather than on how to apply it into actual teaching contexts. This approach does not provide students with the opportunity to directly observe how technology is applied in specific lessons and offers no additional room for practice. The second approach is to integrate technology into all courses of the teacher education program. This approach is, in fact, useful in not only facilitating the teaching and learning process by providing more practice but also familiarizing students with methods of technology use in education. The second approach, perhaps, should be recommended for the program since the application of the approach could help create opportunities for students to practice and become familiar with the methods of using technology in language teaching and learning.

To integrate technology into all courses of the pre-service English teacher education program curriculum, program designers need to have specific solutions. Kortecamp and Croniger (1996) propose a model that had been successfully used in a teacher education program at New England University. This model includes five components: familiarization with technology (i.e. computer, software), partnering with mentors, developing personal projects, becoming mentors, and keeping current.

To apply this model into the Vietnamese context, universities should firstly create chances for lecturers to participate in training courses on the use of technology in language learning and teaching. Every year, the National Foreign Language project 2020 organizes training courses to upgrade lecturers' skills in ICT application in teaching. However, since not all lecturers of pre-service teacher education programs in Vietnam have the opportunity to participate in these courses, universities, therefore, need to organize their training courses whereby those who are trained in courses implemented by the National Foreign Language Project 2020 could, in turn, become trainers and share what they have learnt from their training courses to their colleagues.

Secondly, universities should have a group of experts and lecturers who are experienced

in technology in education to work as mentors for other lecturers. The group is ready to help, support, and guide lecturers during their implementation of ICT integration in their teaching. Thirdly, universities should have the policy to make it compulsory for lecturers to develop their projects. They should not only apply ICT in their teaching but also design projects to help their students understand how to use technology in meaningful contexts.

Fourthly, lecturers become mentors who help to develop students' abilities to use ICT while they learn how to teach. Currently, the curricular of all pre-service English teacher education programs have at least one course on education technology but these would focus mainly on teaching students how to use tools such as Hot Potatoes or Web 2.0 separately from the teaching context. When lecturers apply ICT in their lessons, students would then directly see how technology is used in specific contexts. Methodological courses in which students learn how to teach should provide them with the knowledge and skills of ICT application in language teaching, like designing a lesson plan for a listening lesson, or using a video on Vlog in class followed by activities on Hot Potatoes for homework. In theoretical subjects like linguistics, online courses could be used as supplementary courses for students to share documents and discuss issues in a forum.

Finally, lecturers need to keep abreast of technological developments; this means that they have to be aware and current with new technologies so that they could continuously update their methods of teaching with the application of technology. Sending lecturers to workshops and training programs on teaching methods and ICT use in language teaching and learning are some solutions that would help lecturers obtain new knowledge for improving their teaching methods.

All in all, designers of pre-service English teacher education programs need to integrate technology into the curriculum. Such integration would not only help to improve teaching and learning but also create exposure opportunities for students on the application of technology in education. When these students become teachers, they would directly alter in-service school teachers' views on the use of technology in language teaching and learning. This is an essential benefit that the integration of technology in English teacher education programs aims at achieving (Afshari et al., 2009).

Conclusion

Pre-service English teacher education programs in Vietnam are faced with numerous challenges to develop their students' ability to integrate technology in their education with the reasons being among others poor facilities, lack of pedagogical knowledge and skills for technology integration in education, and students' low ICT capacity. To increase the program's effectiveness in training students on how to integrate technology in education, integrating technology in the program's curriculum is suggested. It is hoped that this would enable pre-service English teacher education programs in Vietnam to develop effectively their students' capacity in technology integration in education. Further studies should be done to identify how to use such solutions to enhance students' ability to use technology in language learning and teaching in a specific way.

References

Afshari, M., Bakar, K. A., Luan, W. S., Samah, B. A., & Fooi, F. S. (2009). Factors affecting teachers' use of information and communication technology. *International Journal of Instruction*, *2*(1), 77–104.

Ahmadi, M. R. (2018). The use of technology in language learning: A literature review.

International Journal of Research in English Education (IJREE), *3*(2), 115–125.

Al-Sehayer, K. (2001). The effect of multimedia annotation modes on L2 vocabulary acquisition: A comparative study. *Language Learning & Technology*, *5*(1), 202–232.

Allum, P. (2002). CALL and the classroom: The case for comparative research. *ReCALL*, *14*(1), 146–166.

Butzin, S. (2001). No using instructional technology in transformed learning environments: An evaluation of project CHILD. *Journal of Research on Computing in Education*, *33*, 367–374.

Carlson, B & Reidy, S. (2004). Effective access: Teachers' use of digital   resources. *OCLC System and Services, 20(2), 65-70*

Cobb, T. (2006). Internet and literacy in the developing world: Delivering the teacher with the text. *Educational Technology, Research and Development*, *54*(6), 627–645.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative and mixed methods approaches*. *Sage* (second edit.). Sage Publications.

Dang, N. T. (2011). *Exploring CALL options for teaching EFL in Vietnam*. Minnesota State University.

Dockstader, J. (1999). Teachers of the 21st century know the what, why, and how of technology integration. *T.H.E. Journal, 26*(6), 73-74

Donnelly, D., McGart, O., & O'Reilly, J. (2011). A framework for teachers' integration of ICT into their classroom practice. *Computers and Education*, *57*, 1469–1483.

Flanagan, L., & Jacobsen, M. (2003). Technology leadership for the twenty first century principal. *Journal of Educational Administrative*, *41*(2), 124–142.

Friedman, A. (2006). K-12 teachers' use of course websites. *Journal of Technology and Teacher Education, 14(4),* 795-810.

Gilakjani, A. (2013). Factors contributing to teachers' use of computer technology in the classroom. *Universal Journal of Educational Research, 1(3), 262-267*.

Han, A. A. M., Tan, C. K., & Lee, K. W. (2019). Investigating the best practices in the training to use ICT by teacher trainees within classrooms between two universities in Malaysia and Vietnam using Vedung taxonomy on policy instruments. Paper presented in *GLOCALL 2019*.

HCMC University of Education. (2016). *English teacher education program*.

Hennessy, S., Ruthven, K., & Brindley, S. (2005). Teacher perspectives on integrating ICT into subject teaching: Commitment, constraints, caution, and change. *Journal of Curriculum Studies, 37(2), 155-192*.

Hermandez-Ramos, P. (2005). If not here, where? Understanding teachers' use of technology in Silicon Valley schools. *Journal of Research on Technology in Education, 38(1), 383-408.*

Ho, H. (2014). *Application of MOODLE as a Course Management System to Teach Integrated Skills of English to Meet the Requirement of CEFR* (No. MSD2013-05-26BS). Danang: Unpublished project report.

Hue University of Foreign Languages (2012). *English teacher education program*. Internal circulation document

James, R. (1996). CALL and the speaking skills. *System*, *24*(1), 15–21.

Kortecamp, K., & Croniger, W. R. (1996). Addressing barriers to technology diffusion. *Journal of Information Technology for Teacher Education*, *5*(2), 71–78.

Le, X. M., & Vo, K. H. (2014). Factors affecting secondary-school English teachers' adoption of technologies in Southwest Vietnam. *Language Education in Asia*, *9*(2), 198–215.

Mansor, N. (2007). Collaborative learning via Email discussion: Strategies for ESL writing classroom. *The Internet TESL Journal*, *13*(3).

Merriam, S. B. (2009). *Qualitative research and case study application in education*. Jossey-Bass Publisher

MOET. (2008). *Directive on movement "Friendly school, active students" at secondary schools in the period 2008-2013 (40/2008/CT-BGDDT)*.

Nguyen, H. T. M. (2017). *Models of mentoring in language teacher education*. Springer International publishing.

Nguyen, L. (2014). The place of pedagogical internship in the reform of teacher education in Vietnam. In J. Calvo de Mora & K. Wood (Eds.), *Practical knowledge in teacher education* (pp. 44–57). Routledge.

Nguyen, V. L., & Pham, T. N. (2014). The effects of Dyned courseware in developing first and second year students' English ability in University of Foreign Language Studies and. *Journal of Science and Foreign Languages*, *40, 11-19*.

Norris, N., Sullivan, T., Poirot, J., & Soloway, E. (2003). No access, no use, no impact Snapshot surveys of educational technology in K-12. *Journal of Research on Technology in Education*, *36*(1), 15–27.

Peeraer, J., & Petergem, P. Van. (2011). ICT in teacher education in an emerging developing country: Vietnam's baseline situation at the start of "The year of ICT." *Computer and Education*, *56*, 974–982.

Puentedura, R. R. (2012). The SAMR model: background and exemplars. http://www.hippasus.com/rrpweblog/archives/2012/08/23/SAMR_BackgroundExemplars.pdf

Pham, T. T. N., Tan, C. K., & Lee, K. W. (2019). ICT integration in teaching English in Vietnam through the lens of SAMR model. Paper presented in *GLOCALL 2019*. Danang.

Pollard, C., & Pollard, R. (2004). Research priorities in educational technology: A Delphi study. *Journal of Research on Technology in Education*, *372*(2), 145–160.

Roach, B. (2010). *Educational technology in the classroom from the teacher's perspective*. Fielding Graduate University.

Schmidt, D. (1998). Technology and teacher education: Pre-service teachers can make a difference. *Journal of Computing in Teacher Education*, *14*(2).

Stockwell, G. (2007). A review of technology choice for teaching language skills and areas in the CALL literature. *ReCALL*, *19*, 105–120.

Swain, C. (2006). Pre-service teachers' self-assessment using technology: Determining what is worthwhile and looking for changes in daily teaching and learning practices. *Journal of Technology and Teacher Education*, *14*(1), 29–59.

University of Languages and International Studies (2015). *English teacher education program*. Internal circulation document.

University of Foreign Language Studies. (2015). *English Teacher Education curriculum-version 2015*. Internal circulation document.

Vo, T. K. A. (2015). Application of E-learning to enhance collaborative learning in English

Department, University of Foreign Language Studies, The University of Danang. Paper presented in Conference on Blended Learning and Curriculum. Danang: University of Foreign Language Studies.

Vo, T. K. A. (2017a). Effectiveness of Action Research Course in the In-Service Teacher Training Program. Paper presented in *ICORE 6*. Penang: Universiti Sains Malaysia.

Vo, T. K. A. (2017b). Evaluating the implementation of action research course in an in-service teacher training program in Vietnam. *Journal of Nusantara Studies*, *2*(2), 88–97.

Vo, T.K. A. (2019). *Context evaluation on the implementation of the professional component of English teacher education program in a Vietnamese university*. Universiti Malaysia Sabah: Unpublished thesis.

Vo, T. K. A., Pang, V., & Lee, K. W. (2018). Teaching practicum of an English teacher education program in Vietnam: from expectations to reality. *Journal of Nusantara Studies*, *3*(2), 32–40.

Winley, G. K., & Lau, S. K. (2012). The adoption and use of ICT in Thailand and Vietnam. *Electronic Journal on Information System in Developing Countries*, *54*(7), 1–29.