Teaching languages in primary schools

using educational technologies:

Experiences of primary-school language teachers in Vietnam

A thesis

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Abstract

Using educational technologies (ETs) in classrooms to teach languages in primary education has become increasingly popular worldwide in the last few decades. In Vietnam, since 2000, the government and the Vietnam Ministry of Education and Training (VMOET) have also encouraged teachers at all levels of education, including primary education, to use ET to support their teaching. The VMOET has created opportunities for teachers to improve their teaching with ET integration, with some teacher professional development (TPD) being offered. Thus, primary school language teachers in Vietnam have different experiences of using ET as well as the ET teacher professional development activities being provided. There have been a number of studies on teachers' experiences of using ET and ET TPD in higher levels of education in Vietnam but few at the primary level, especially in language teaching. Therefore, this study examines the experiences of primary school language teachers and makes suggestions for teachers, school leaders, and policy makers to improve the quality of ET TPD activities, and thus the effectiveness of ET use in language classrooms.

The research method used in this study to gain an insight into the teachers' experience is a mixed-method approach under the lens of hermeneutic phenomenology. First, teachers of languages in primary schools were surveyed to identify the more specific phenomena to study. Then, I interviewed primary school principals, school technology coordinators, and individual teachers about their lived experiences of applying ET in their teaching to have a deeper understanding of their experience. I also analysed documents such as teachers' e-lesson plans, school policies, and government policy to address the aim.

There are three key findings of this study. First, the language teachers in this study experienced the use of a limited range of ET including both personal and school-owned ET, but most had a positive attitude and made judicious use of the ETs most of the time. Second, they experienced using ET with a teacher-centred approach, which means ET was substituted for printed materials and chalk and board tools to present the language e-lessons, although the VMOET was advocating for a more student-centred teaching approach with ET support. Third, these teachers had differing perceptions of the two types of ET TPD available. The formal TPD activities were not equally accessed, nor practical enough to address teacher needs, and any learning was not shared formally with colleagues; whereas, the language teacher's informal TPD activities were

useful and met the teachers' needs. These findings may be of use to teachers, school technology coordinators, and school leaders as confirmation of teachers' predominantly positive perceptions of ET use and that they endeavour to use ET according to their availability and the language learning purpose for the teachers' lessons. These findings affirm a shift in research attention from ET integration generally to a focus on curriculum specific subject use of ET for teaching and learning. Further recommendations include that the VMOET TPD programmes become more learner-centred to meet the needs of the teachers attending. Overall, these results confirm the need for bridging the gap between policy and the practice of using ET in language teaching in the primary education sector in Vietnam.

Acknowledgments

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From the bottom of my heart, thank you!!!

List of acronyms

Acronyms	Long form
ALM	Audio-lingual Method
AR	Augmented Reality
ASEAN	Association of South East Asian Nations
BoM	Board of Management
CALL	Computer-Assisted Language Learning
CLT	Communicative Language Teaching
DOET	Department of Education and Training
ET	Educational Technology
ICT	Information and Communication Technology
IT	Information Technology
NFLP	National Foreign Languages Project
SAMR	Substitution, Augmentation, Modification, Redefinition
TPACK	Technological Pedagogical and Content Knowledge
VMOET	Vietnam Ministry of Education and Training
VR	Virtual Reality

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CHAPTER 1
INTRODUCTION

This chapter begins with my research statement, which introduces my interest in this research, the research's topic and its significance. Then, the chapter provides the context and other associated background information for this research. This research explores the lived experience of both first language (Vietnamese) and foreign language teachers working in Vietnam primary schools when using educational technology (ET) in their classrooms. It focuses on teachers' experiences of their ET use and of their ET teacher professional development (TPD) activities and experiences. The chapter concludes with a thesis overview.

1.1 Research statement

My interest in this research arose from my own professional experience. I have had a passion for language teaching since 2003 when I was a third-year student at Hanoi University of Foreign Studies (HUFS). So, from 2004, I started working as an English language teacher for students of different ages, that eventually included primary school, secondary, high school students, tertiary students and working adults. I used to teach my private classes for individuals or groups of school students about language components such as vocabulary, grammar, and writing. These lessons were to help them to achieve a high score for their paper-based test at schools. At the same time, I worked full time as an English language teacher at HUFS (now known as Hanoi University-HANU). I taught a range of academic English subjects including pronunciation, vocabulary, basic reading, academic reading, reading for specific purposes, academic writing, presentation, and English for specific purposes. Then, in 2014, I was involved in the National Foreign Project 2020, in which Hanoi University (HANU) was a key member. I was involved as a teacher educator on using information communication technologies (ICT) in language teaching for primary and secondary school teachers in the North of Vietnam. I had three years of experience teaching these courses. In these courses, organised by Hanoi University, the teachers participating were provided with some knowledge and skills of using technologies, software and online tools to help plan and deliver lessons in class, as well as to assess students' language knowledge and fluency.

Reflecting on my personal experience, two different responses were evident in the informal, incidental feedback these teachers gave me in comments during and after class about this teacher professional development (TPD) on the use of educational technologies (ETs) in classroom teaching. Some trainee teachers' feedback was that the teaching tools and approaches of ICT training courses were interesting but some of the tools and approaches could not easily be applied in their schools. Two reasons were mentioned: the technology resources in their respective schools were inadequate to support the use of ETs in classroom teaching and that other commitments notably administration and teaching extra classes, left little time for exploring ETs and preparing lessons using ETs.

However, the incidental feedback from some other trainee teachers suggested that the lessons they learnt from these ET training courses were applicable. They had similar ET available in their schools and so they were able to apply what they had learnt in the courses. In doing this, they could see that their lessons were more attractive and would engage their students. This inconsistency in their experiences and perceptions was very interesting and I wanted to find out more detail about why and how it occurred.

There are numerous studies on teachers' perceptions about using ET in teaching different subjects at all levels of education from primary to tertiary level (Cooper, Park, Nasr, Thong & Johnson, 2019; Erdin & Levent, 2022; Meirovitz, Russak, & Zur, 2022; Mercader & Gairín, 2020; Taghizadeh & Hasani, 2020). However, there are very few research projects about teachers' experience of applying ETs in teaching languages in Vietnamese primary schools, especially about both mother tongue (L1) and foreign language (L2). Therefore, this research mainly aims at investigating primary language teachers' experiences at having ET in language teaching, which includes their experience of using ET in both L1 and L2 classes and their experience of having ET TPD.

The significance of my research is its value for language teachers, for schools' Boards of Management (BoM), and for policy makers in Vietnam as well as in other countries. Reading the research findings will provide an opportunity for teachers to reflect on their use of ETs for language teaching and understand more about how to adapt their practices to help their students develop language competence. Second, this study will inform primary schools' BoM how to enhance in-school teacher professional training courses. Third, it will support policy makers at

different levels of the Vietnamese education system in their efforts to enable the use of ETs in education as stated in the Master Plan for ICT in Education, 2000, by providing information and insights that can increase understanding of the current situation for primary language teachers.

1.2 Background information

The research context is an inseparable aspect of any research study. This is particularly applicable for any research on language education. This next section therefore will provide some background information on Vietnamese social-cultural, economic, and educational conditions that have influence on language education and TPD.

1.2.1 Vietnam social-cultural context

An overview of Vietnam society and culture provides a useful framework for understanding the Vietnam government's policy on language education which includes Vietnamese language, foreign languages especially English, and language teaching approach.

The national language and foreign languages of Vietnam

Vietnam is an S-shaped country located in the South-east of Asia. The country has 54 ethnic groups with more than 100 different languages (Nguyễn & Nguyễn, 2019). Among all the languages, Vietnamese language is a dominant language which is spoken by 86% of Vietnamese population (Bradley, 2019). A number of foreign languages are also used within Vietnamese society including English, French, Chinese, Russian, and English due to colonisation by foreign powers. English has become the most widely spoken foreign language today (Phan, 2008), but these other languages have all been the prominent foreign languages taught in schools and used in official documents at different points in time. However, Vietnamese was always the language spoken by Vietnamese people in their daily lives.

Figure 1: Dominant foreign languages in different historical periods of Vietnam

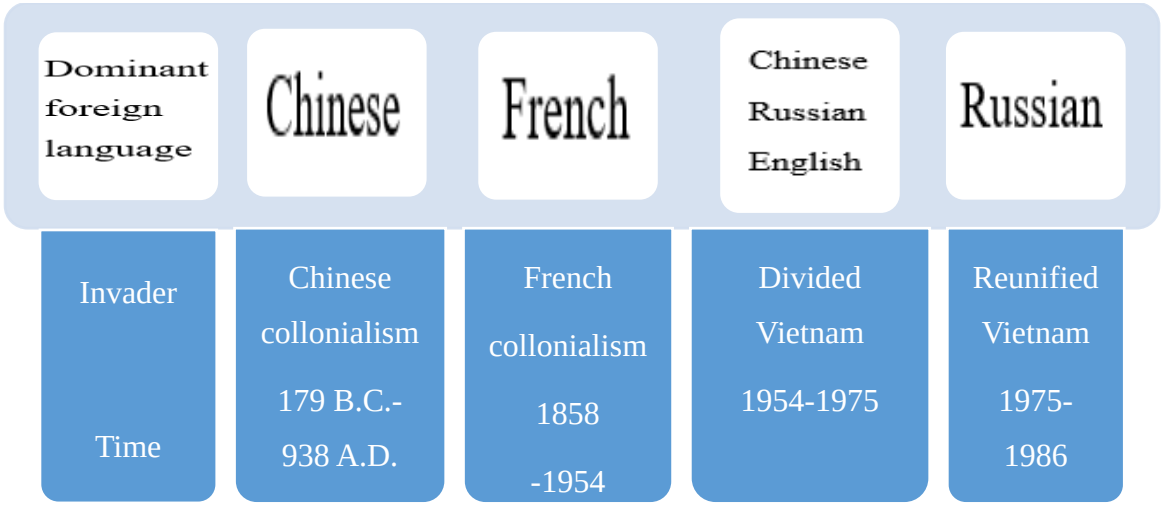


Figure 1 illustrates the changing prominent foreign languages in Vietnam over different periods of time. From 179 B.C. to 938 A.D., Chinese was the dominant foreign language in Vietnam because Vietnam was governed by China during that time. According to Nguyen & Nguyen (2019), during this period of time, Vietnamese people developed *chữ Nôm* (vernacular language) which was based on Chinese characters but not intelligible to Chinese people. This language development was an attempt by Vietnamese people to show their resistance to Chinese language and their protection of Vietnamese culture from the Chinese invader.

From 1858 to 1954, nearly 100 years, French was promoted as the official language of Vietnam, while Chinese and *chữ Nôm* were abandoned because Vietnam was under French control during this time. French language was used officially in written documents and in schools as a medium of instruction. At the same time, *Quốc ngữ* (national language), a system of Roman alphabetic writing which has diacritics to symbolise sounds and articulation (Nguyen & Nguyen, 2019), was promoted as an official Vietnamese language and is still in use today in Vietnam. However, at that time, *Quốc ngữ* was just taught as a foreign language, and if it was taught in a place of French people, it would be considered as an act of rebellion. French was the language that denoted social status. Those who spoke French were seen of higher class than those who spoke *Quốc ngữ*.

From 1954 to 1975, when Vietnam was divided into two regions-the North and the South, four languages, namely Chinese, Russian, French, and English, were all used in different regions of Vietnam. North Vietnam was under the rule of the Soviet Union, so Russian was used as a formal language in schools and in communication because of close contact between Vietnam and the Soviet Union. Chinese and French also existed as foreign languages in North Vietnam. As South Vietnam was allied by America which resulted in English being the main medium of communication for its direct contact with America. Yet, among all the languages, Russian was the language most widely taught in the whole of Vietnam because of the changes in the political and economic systems of Vietnam. It was now in a close relationship with the Soviet Union (Nguyen & Nguyen, 2019). In this period, *Quốc ngữ* became Vietnam's national language and was officially used as a medium of instruction in the national education system.

From 1975-1986, only Russian became the dominant foreign language of Vietnam and Vietnamese has become the official language of the country. After the American troops left Vietnam in 1975, North Vietnam and South Vietnam reunited. At the same time, because of the alliances of Vietnam with the Soviet Union, Russian became the dominant and the most commonly taught foreign language in Vietnam (Do, 2006; Nguyen & Nguyen, 2019). This reflected the Vietnam government's desire to expand relations with the countries of the communist bloc (Do, 2006). As a result, English and French were removed from the curriculum and Chinese disappeared from the language education landscape, while Russian became the most popular other language used. Vietnamese was the medium of instruction in the national education system starting from primary level (Nguyen & Nguyen, 2019). During this time, the central government of Vietnam focused on affirming the country's sovereignty and solidarity, and one way to achieve this was promoting Vietnamese as the official language of the country.

After 1986, Vietnamese was consistently reaffirmed as the official language as the Education Law (1998) confirmed that Vietnamese language was the official language used in schools (Article 5). English started to become a popular foreign language used in a range of important fields such as education, business, and diplomacy as Vietnam began to reform the economy by an open-door policy to encourage foreign direct investment (Van Canh, 2020). English has become more and more widely used since Vietnam joined the Association of South East Asian Nations (ASEAN) in 1995. The official language of this organisation is English. Other foreign

languages are also encouraged to be used and learned because Vietnam continued to join a range of international organisations such as the Asia Pacific Economic Cooperation in 1998 and the World Trade Organisation in 2007, to take part as a "player" in the global economy (Sayer, 2015, p. 50). As a result, a long-term project known as the 'National Foreign Languages Project 2020' (NFLP, 2020) for the 2008-2020 period was launched by the Vietnam Ministry of Education and Training (VMOET). One main goal of this project was to assure that by 2020, the majority of Vietnamese graduates from vocational schools, colleges, and universities would be able to communicate, study, and work in the globalised, multilingual and multicultural environment of integration (Nguyễn, 2008). The foreign languages mentioned in the project are English and some other languages. Other foreign languages are Russian, Japanese, French, Chinese, Korean, and German (H. Đ. Nguyễn, 2021a, 2021b).

In brief, due to thousands of years under colonisation by China, Russia, France, and America, Vietnam has adopted different policies for official languages in its education system. Currently, Vietnamese language is the country's official language, which is used in all government documents, education, and in everyday communication. Other foreign languages officially taught in schools as first foreign languages are English, Russian, Japanese, French, Chinese, Korean, and German, among which English is the most popular foreign language learnt (M. N. Nguyễn, 2021).

Language teaching approach in Vietnam

Not only the language policy but also the language teaching approach in Vietnam has been deeply influenced by its long history of being colonised.

As shown in Figure 1, Vietnam was under Chinese rule for 1,000 years so the society in general and education specifically has been deeply impacted by Confucian conception of education. According to Confucian conception, teachers were given "control over the curriculum and authority over the learners" (Tan, 2016, p. 302). This is because according to Confucianism, education is based on the transmission of knowledge and learning by repetition or rote learning (Trần, 2013). The teacher is the centre of the class, and students are passive and rarely ask questions or speak up in classrooms. Furthermore, in Vietnam, under the influence of Confucian conception, teaching has been considered as a noble occupation (Phan, 2008). In the past, teacher was ranked the second, only after the King in the traditional motto of moral education which was

King-Teacher-Father (Quan-Su-Phu) (MacKinnon & Le, 2014). A teacher brought to the family pride and prestige. The teacher was considered as “a guru”, the spiritual leader (Hofstede & Hofstede, 2005, p. 53) and the moral model. They were recognised as the most knowledgeable and having the highest standard of moral performance (Phan, 2008). These beliefs still exist, especially in teacher training and teaching practice, in which students always observe and imitate their teachers. From my own experience, both as a language learner and a foreign language teacher, I always respect and admire my teachers. When I was at school and university, I strictly followed my teachers’ guidance and never challenge or criticise teachers. When I became teachers, my teaching styles have been influenced by the teachers who I admired most in my school time and university time. In my teaching, I always recalled how the teachers taught me and applied the ways that I found appropriate to my students. In other words, I teach the way I was taught.

Due to the dominant and “guru” role of the teachers in classrooms and the society, teaching method in general and in language in specific is mainly teacher-centred with structural approach, which means the focus is on reading, lexicogrammar, and translation skills (Hoàng, 2018a). In this approach, teachers first teach the structure of a language, and students learn by heart or using such techniques like substitution to drill the structure. After that, students are required to make a new sentence based on the structure just learnt. Finally, students are asked to translate into Vietnamese or vice versa. This is still the dominant approach in primary level until current time, the year 2022.

1.2.2 The Vietnamese education system

The structure of Vietnamese general education system includes primary education, lower secondary education (basic education stage) and upper secondary education (vocationally oriented education stage) (see Figure 1). This is the same for both public and non-public schools with the structure as follows:

> a) Primary education lasts for five school years from the 1st grade to the end of 5th grade. Primary school graduates are moved up automatically to the lower secondary education level.

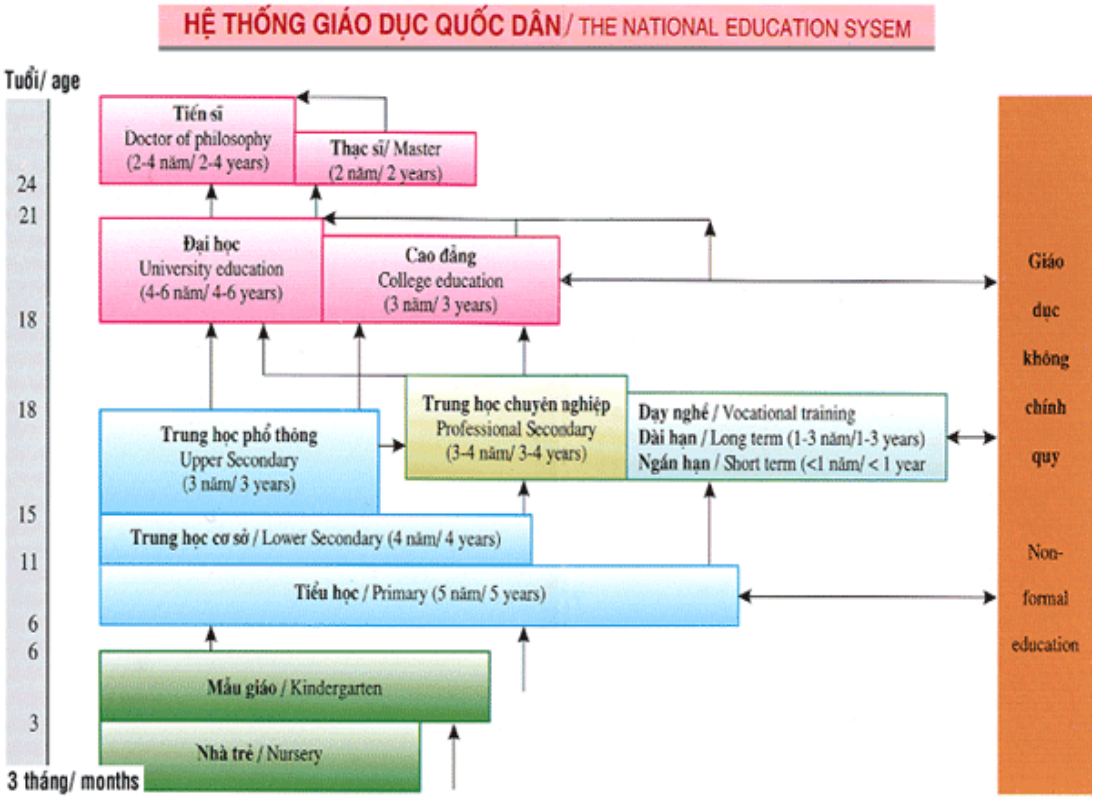
b) Lower secondary education lasts for four school years from the 6th grade to the end of 9th grade. Lower secondary school graduates may opt to move up to the upper secondary education level, or continue to enroll in elementary and intermediate-level training programmes.

c) The upper secondary education is offered to lower secondary school graduates. Within the stipulated duration of upper secondary education, students can transfer to intermediate-level training programmes if they wish and meet requirements set out in these programmes.

Upper secondary education lasts for three school years from the 10th grade to the end of 12th grade. Upper secondary school graduates can move up to the higher education level, or enrol in vocational education programmes.

According to Vietnamese Education Law, children start primary education at the age of six and continue for five years. Primary education is compulsory and free for all Vietnamese children. When the children complete primary education, they receive a certificate issued by the school principal (V. A. Nguyễn, 2005).

Figure 2: *The national education system of Vietnam*



Two types of schools are established in the Vietnam education system namely public school and non-public school. Public schooling is established, invested and funded regularly by the Vietnamese government. The public school takes a key role in the national education system. Non-public schools are established and invested by individuals, a community, social organisations, vocational-social or economic organisations (V. A. Nguyễn, 2005). The national ranking for the schools has not been officially established but media and Vietnamese people widely recognise that top schools of a region or of the country normally have the following criteria: the school has facilities of a national standard; a high ratio of students who have both outstanding academic achievement and have a reputation for good moral character; and a high proportion of school's students successfully move on to another level of education, such as from primary schools to secondary schools, from secondary school to high schools, or from high schools to universities. This way of school ranking is closely related to assessment (section 1.2.3). The aim of general education is “to help pupils develop comprehensively by acquiring morals, knowledge, physical health, aesthetic values and other basic skills, develop personal ability, flexibility and creativity, with a view to forming the

socialist Vietnamese personality, to build the civic conduct and duty, to prepare students for further studies or entering the work force." (V. A. Nguyễn, 2005, p. 5).

1.2.3 Primary education in Vietnam

This section introduces more details on the primary education's purposes, general programme, a school-year timeframe, assessment, and the infrastructure of primary schools in primary education of the Vietnam education system. These are information relating to the topic of this research only (about integrating ET in language teaching), not a comprehensive one.

Education purpose

Primary education is the first stage in the general education system of Vietnam. This stage is five years long from Grade 1 to Grade 5. The purpose of primary education is "to help the pupils form initial foundations for correct and long-lasting moral, intellectual, physical and aesthetic development, along with the development of basic skills for them to enter lower secondary education" (V. A. Nguyễn, 2005)

The Vietnam national curriculum

The Vietnam national curriculum at primary level of the Vietnam education system is structured with compulsory subjects and optional subjects (Vietnam Ministry of Education and Training, 2018) and is textbook-driven (Hoang, 2018b). Compulsory subjects are Vietnamese Language, Foreign Language (English, French, Chinese, Russian, or Japanese), Mathematics, Morality, Science, History, Geography, Basic Techniques, Music, Arts and Physical Education (Trịnh, 2006). Optional subjects are languages of ethnic minority groups, foreign languages 1 (for Grade 1, 2). This programme content is followed by all primary schools in the Vietnamese education system. The curriculum is textbook-driven, which means all teaching resources such as topics, explanations, illustrations, tasks, and assessment for classroom use are mainly from textbooks (Kumar & Subramaniam, 2015). Each grade has a textbook set including all books for all compulsory and optional subjects. The textbook set is the same in all schools throughout the nation.

School-year time frame

A school year last in 35 weeks starting from September to the end of May of the next year (Vietnam Ministry of Education and Training, 2018). A school year is divided into two terms-

Term 1 and Term 2. School time starts at 8.00 am-11.00 am, and from 2 pm-5 pm. From 11 am-2 pm, students have lunch and take a snap. The maximum number of teaching sessions each day is seven. Each teaching session lasts in 35 minutes. There is a five-minute break between two periods and a twenty-minute break every two periods (Vietnam Ministry of Education and Training, 2018).

The assessment

The assessment at primary education comprises of two types: qualitative assessment and quantitative assessment. (Vietnam Ministry of Education and Training, 2018) and the quantitative test is mainly paper-based (Hoang, 2018b). Figure 3 shows a sample of the two kinds of assessment in an academic record of a Year-4 student in academic school Grade 2021-2022. The column with red circle is qualitative comments of a teacher. For example, “His reading comprehension is improved. Sometimes, the ideas were not clearly expressed verbally”. The column with blue circle is his scores (out of 10) of six compulsory subjects (Vietnamese, Mathematics, Natural and Social Science, History and Geography, English language, and Basic computer skills).

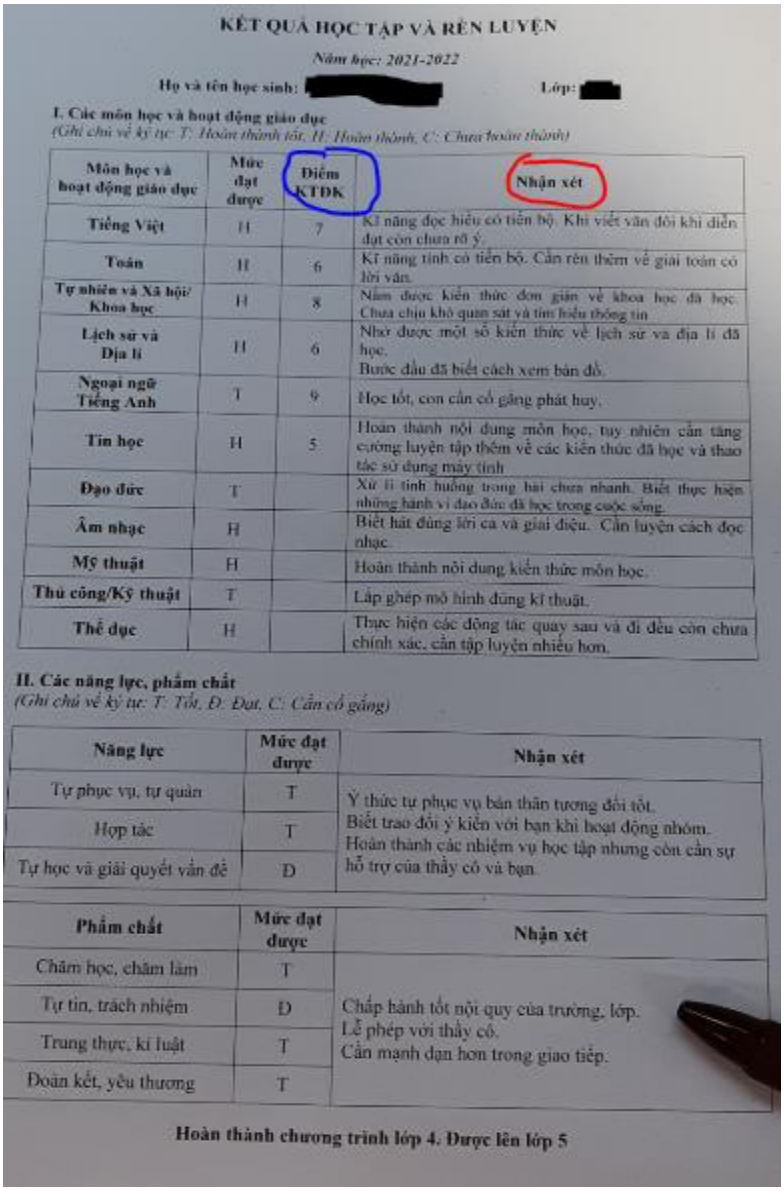
In order to have the quantitative results, at the end of each term, there are paper-based tests for the six compulsory subjects, except “Reading out loud”-a component of Vietnamese language subject-is orally tested. Paper-based tests are designed in paper, and students do the test in class by using pen or pencil to write their answers on the paper. The quantitative test results are very important for students when they move from primary level to secondary level (Grade 6 to Grade 9) because in order to be enrolled in one of the Vietnamese national top secondary schools, students need to have high academic record for each subject. If students do not have high academic record, they could only be enrolled in lower ranking secondary schools, which consequently, later may affect their enrollment to Vietnamese national top ranking high schools (Grade 10 to Grade 12), and then to university.

In addition, Vietnam has been on its process to comprehensively reform the national education in both content and assessment since 2015. To prepare for that, since 2009, Vietnam officially applied to participate in the programme for International Student Assessment (PISA) of the OECD. PISA measures ability of 15-year-old students to use their knowledge and skills in three aspects of reading, mathematics and science to meet real-life challenges (OECD, n.d.). PISA is

carried out every three years starting from 2000. Vietnam officially implemented all PISA activities in March 2010 (Le, 2020).

The purpose of Vietnam participation in PISA is to learn and experience the methods and techniques involved in international education assessments. One of the five objectives of participating PISA of Vietnam is to make an active preparation for educational reform after 2015 (Le, 2020). Since 2015, the VMOET has changed the textbook content from primary level and also the assessment methods from Grade 1. To get better academic report for their children, Vietnamese parents let their kids participate in extra classes of Mathematics, Vietnamese, and English from Grade 1, which create stress to both the kids and families.

Figure 3*: Sample of an end-of-year academic record of a Grade 4 student in 2021-2022 school year*



KẾT QUẢ HỌC TẬP VÀ RÈN LUYỆN

Năm học: 2021-2022

Họ và tên học sinh: [redacted] Lớp: [redacted]

I. Các môn học và hoạt động giáo dục

(Ghi chú về kỳ tự: T: Hoàn thành tốt, H: Hoàn thành, C: Chưa hoàn thành)

Môn học và hoạt động giáo dục	Mức đạt được	Điểm KTĐK	Nhận xét
Tiếng Việt	H	7	Kĩ năng đọc hiểu có tiến bộ. Khi viết văn đôi khi diễn đạt còn chưa rõ ý.
Toán	H	6	Kĩ năng tính có tiến bộ. Cần rèn thêm về giải toán có lời văn.
Tự nhiên và Xã hội/ Khoa học	H	8	Nắm được kiến thức đơn giản về khoa học đã học. Chưa chịu khó quan sát và tìm hiểu thông tin
Lịch sử và Địa lí	H	6	Nhớ được một số kiến thức về lịch sử và địa lí đã học. Bước đầu đã biết cách xem bản đồ.
Ngoại ngữ Tiếng Anh	T	9	Học tốt, con cần cố gắng phát huy.
Tin học	H	5	Hoàn thành nội dung môn học, tuy nhiên cần tăng cường luyện tập thêm về các kiến thức đã học và thao tác sử dụng máy tính
Đạo đức	T		Xử lí tình huống trong bài chưa nhanh. Biết thực hiện những hành vi đạo đức đã học trong cuộc sống.
Âm nhạc	H		Biết hát đúng lời ca và giai điệu. Cần luyện cách đọc nhạc.
Mỹ thuật	H		Hoàn thành nội dung kiến thức môn học.
Thủ công/Kỹ thuật	T		Lắp ghép mô hình đúng kĩ thuật.
Thể dục	H		Thực hiện các động tác quay sau và đi đều còn chưa chính xác, cần tập luyện nhiều hơn.

II. Các năng lực, phẩm chất

(Ghi chú về kỳ tự: T: Tốt, Đ: Đạt, C: Cần cố gắng)

Năng lực	Mức đạt được	Nhận xét
Tự phục vụ, tự quản	T	Ý thức tự phục vụ bản thân tương đối tốt. Biết trao đổi ý kiến với bạn khi hoạt động nhóm. Hoàn thành các nhiệm vụ học tập nhưng còn cần sự hỗ trợ của thầy cô và bạn.
Hợp tác	T	
Tự học và giải quyết vấn đề	Đ	

Phẩm chất	Mức đạt được	Nhận xét
Chăm học, chăm làm	T	
Tự tin, trách nhiệm	Đ	Chấp hành tốt nội quy của trường, lớp. Lễ phép với thầy cô. Cần mạnh dạn hơn trong giao tiếp.
Trung thực, kỉ luật	T	
Đoàn kết, yêu thương	T	

Hoàn thành chương trình lớp 4. Được lên lớp 5

Note: Photo taken by the researcher

Infrastructure (classrooms and IT)

Each primary school has minimum of 10 and maximum of 30 classrooms. There is at least one room for Basic Computer Skills subject, one room for foreign language subjects. Each standard classroom must have standard tables and chairs, enough teaching equipment, enough seats for maximum of 35 students (Nguyễn, 2014b; Vietnam Ministry of Education and Training, 2020).

The “standard”, “enough”, “teaching equipment” are general, not specified in the Circular. That is why I took the photo of a classroom (see Figure 4) in a primary school of this study for better understanding.

Figure 4*: A classroom in a primary school in a big city of Vietnam*

Note: Photo taken by the researcher

Figure 4 illustrates a typical Vietnamese primary-school classroom. Overall, tables and chairs are fixed, and there is a “stage” in front of the class with a teacher’s table and a blue board with a screen to display lessons by an OHP. There is little space for movement. The classroom is equipped with such ET like a desktop computer, an OHP, and loudspeaker(s).

To continue, next section reviews the policy on language education of primary level.

1.2.4 Policy on language education at the primary level in Vietnam

In Vietnam, language subjects (including both Vietnamese language and foreign language) play a main part in the whole programme, which takes nearly 50% of the allocated time for all subjects (Phùng, 2018). Policies for these main subjects are elaborated in the following section.

Policy on Vietnamese language education

Vietnamese language is a compulsory subject in the curriculum. Vietnamese language knowledge, skills and teaching methods requirements for primary level are indicated in

Vietnamese Education Law and Decision on establishing the education programme for primary school (M. H. Nguyễn, 2005; V. A. Nguyễn, 2005). According to Vietnamese Education Law, term 7 about language used in all schools and educational institutions, Vietnamese language is the official language used at all schools. In term 28, about requirements on the content of knowledge in primary schools, it is required that students, at the end of primary level, must be able to be competent in four skills of listening, speaking, reading and writing in Vietnamese (V. A. Nguyễn, 2005). To be more specific, there are guidelines by the Vietnamese Ministry of Education and Training (VMOET) on requirements of content and teaching methods for Vietnamese language each year (Vietnam Ministry of Education and Training, 2018). In terms of content and skills, at the end of primary school, students must be able to have simple knowledge on content of texts, know how to read aloud with emotion, write some text types, listen and speak about familiar topics. In addition, the methods of teaching must follow guidelines by the Ministry of Education and Training of Vietnam (M. H. Nguyễn, 2005). Active learning is the main method of teaching Vietnamese language (Dự Án Phát Triển Giáo Viên Tiểu Học, 2008). According to the guideline, active learning places more learning responsibility on students. Teachers in active learning guide the learning process. They create friendly learning environment. They involve students in problem solving, role plays, discussion, and project based activities, which are to help students to learn in depth not on surface, and improve students' higher order thinking skills such as applying the language.

Policy on foreign language education

Since 2008, there has been a compulsory 10-year foreign language programme carried out from grade 3 to grade 12 of Vietnam education system. From grade 3, each student must learn one foreign language. The foreign language level outcome of primary school students is level 1 qualification of KNLNN (abbreviation in Vietnamese for the Vietnamese six-level framework of reference for foreign languages, which is CEFR-V (Vietnamese version of the Common European Framework of Reference for Languages). At this level, students

> can understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type. Can introduce him/herself and others and can ask and answer questions about personal details such as where he/she lives, people he/she knows and things he/she has. Can interact in

> a simple way provided the other person talks slowly and clearly and is prepared to help (Global scale-table 1: Common reference levels, 2017, p. 1).

In order to achieve this level, active learning is also suggested by the Ministry of Education. Some teaching methods for English language subjects mentioned in the guidelines are: student-centred approach, discussion, applying technology in teaching (Le, 2005).

Overall, the policy on language teaching for both Vietnamese language subject and foreign language subjects is active learning, which is more student-centred than teacher-centred as in the past. In addition, it is essential to understand the role of ET application in language education in Vietnam because this research's focus phenomenon is teachers' experience on having ET in language teaching. So, next section is going to study how ET using is understood in general and in this research, as well as how ET application in education is located in Vietnam policy documents.

1.2.5 Educational technologies in language education in Vietnam

The concept of educational technologies

A variety of terms are used to describe educational technology (ET) in terms of newer technology in educational practice and research (Salavati, 2016). Therefore, the terms including digital technology (DT), information technology (IT) and information communication technology (ICT) are used interchangeably in this study.

The terminology associated with ETs depends on the context. Cambridge Assessment International Education (2017) identifies the terms associated with ET like bring your own device (BYOD), E-portfolios, flipped classroom, personal learning network (PLN), virtual learning environment (VLE), interactive whiteboards (IWB), software applications (Apps), and Web 2.0. The New Zealand Ministry of Education (2018) states that in education, ETs mean things such as smartphones, tablets, laptops, and computers. In this research, ETs refer to mobile devices such as laptops, smart phones, and tablets; apps which are designed to operate on mobile devices; and computer-based devices such as computers and projectors. The concepts such as IT and ICT will be used when referring to research and reports by other scholars.

Policy on educational technologies in Vietnamese education

In 2002, the Vietnamese Prime Minister approved the Master Plan for IT use and development in Vietnam by 2005. Following this, a guideline by the Vietnam Ministry of Education and Training (VMOET) was published with focus on the demand for ET staff; educational reform in content, teaching and learning methods; study modes; and educational management (Nguyễn, 2000). Teachers are encouraged to implement ET applications as part of new and innovative methods of teaching and learning at each grade (The Vietnam Ministry of Education and Training, 2017).

Subsequent to these policy publications, ETs were systematically introduced to educators through their local Departments of Education and Training (DOETs), following the IT policies as decisions, directives and guidelines issued by the Political Bureau, the Prime Minister, the Vietnam Ministry of Information and Communications (VMOIC) and the VMOET. Below is the overview of policies on ICT implementation in Vietnam education:

Table 1: *Vietnam policy documents on ICT in education*

Policy title	Policy name	Year issued
Directive no. 58 by Political Bureau-Master Plan	ICT in Education 2001-2005 Promoting and Developing ICT for Industrialisation and Modernisation	2000
Decision of Vietnam Prime Minister	Approval of Implementation of Directive 58	2001
Directive no. 29 by VMOET	Enhancing Teaching, Training and Integrating ICT in Education 2001-2005	2001
Decision of Vietnam Prime Minister	Approving the plan of implementation and development of ICT in Vietnam until 2005	2002
Decision of Vietnam Prime Minister	Approval of the Strategies for Developing ICT until 2010, benchmarks for 2020	2005, 2009
Decision (VMOIC)	Approval of the Developing IT Human Resources programme until 2020	2007

Guidelines (VMOET to DOETs)	Enhancing the Implementation of Activities on ICT	2007
Directive (no. 55 by VMOET)	Promoting teaching, training and applying ICT in Education 2008-2012	2008
Guidelines (VMOET to DOETs)	IT tasks in each school year	2007-2021

All guidelines on IT tasks in each school year, beginning in 2007, have assigned specific tasks for provincial Departments of Education and Training (DOETs). The tasks are about using ICT to re-envisage and initiate change for the content, methodology of teaching, learning and assessing; establishing ICT infrastructure in schools; and training ICT skills for teachers and managers. The guidelines on IT tasks for each school year indicate that the policy makers are aware of the benefits of ETs in education and want to advance their use. As the policies are applied in schools, the ICT infrastructure is upgraded and invested in, teacher access to computers and their basic ET skills improved and ETs are used more in delivering lessons. However, the instructions in the guidelines are not throughout, and not specific enough for ICT application in teaching (Phạm & Nguyễn, 2020).

Thus far, for the reader to better understand the context of this research, this section has attempted to provide an overview of the Vietnamese education system, after that narrow the focus down to primary education in the system, then introduce policy on language education at primary level, and finally introduce policy relating to ET in education and in language teaching and learning. Having given the overview of this research's context, I will now move on to introduce the structure of this thesis.

1.3 Thesis overview

This thesis comprises eight chapters. Chapter 1 introduces my research topic, the significance of this research, some background information about the Vietnamese education system including the policy on using ET in language teaching, and finally concludes with an overview of the thesis.

Chapter 2 is the literature review of studies relating to language teaching pedagogy, ET in language teaching, influential factors on teachers' use of ET, and ET teacher professional development (TPD).

Chapter 3, methodology chapter, begins with revisiting the phenomenon of interest and the research questions. Then, the chapter presents the methods used and rationale for implementing the research. This chapter also explains the role that I play in this research. After that, it describes the process of selection of participants, introduces instruments to collect data for this research, and the research procedures. This section also describes data collection and data analysis.

Chapter 4 analyses the results of the survey with teachers in six primary schools. The survey is used as an initial source of data in this research because of the three key objectives, which are: understanding the participants' characteristics and contexts so as to gain insights into and better understanding of their lived experiences; identifying the most relevant phenomenological experiences to be further explored through the interviews; and informing the choice of the participants to be interviewed.

Chapter 5 and Chapter 6 present the teachers' experiences and insights into having ETs aid in their teaching. Chapter 5 reports the language teachers' experiences of using ET in terms of the factors that had influence their using or not using ET to teach language, and their pedagogical decision making related to the use of ET. Chapter 6 continues with the analysis of the teachers' experiences of ET professional development activities that they received. All the descriptions are supported by responses from the interviews and documents, including lesson plans and e-lesson/PowerPoint lessons that the teachers provided.

Chapter 7 discusses the findings through the constraints of Vietnam ICT policies and compares the key discussion points with the existing research literature. This chapter consists of two main parts. The first part responds to the first research question. It begins with the teachers' experience of the available ET they employed, how they employed the ETs in practice, and factors that influenced the teachers' use of ET. The second part addresses the second research question. It is divided into the teachers' experience on formal or formal teacher ET professional development and informal teacher or informal teacher ET TPD.

Chapter 8 solidifies the whole research by synthesising the major findings and making concluding personal remarks. The chapter consists of six main parts. The first one restates the study's purpose and approach. The second one summarises the key findings, and the implications of findings. The third section highlights the contribution of the research with the fourth part identifying the limitations of this research. The fifth part outlines possible directions for future research projects. The final section, as appropriate for a hermeneutic phenomenological study, is a reflection on my doctoral journey with concluding personal remarks.

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

The previous chapter introduces the study's focus, its significance, relevant background information, and the thesis overview. This chapter continues by reviewing relevant literature on key areas of pedagogical approaches, language teaching pedagogy, educational technologies in language teaching, influential factors on teachers' use of ET, and teacher professional development types. The reasons why these are key areas of literature for this research is answered in 2.1.1.

This literature review commenced from the preliminary stage and continued through the whole procedure of implementing this research. Thus, this chapter is the result of an on-going process in which I continually searched, reviewed, and updated this literature review until the final stage of this research. In doing this, the dual goals of this chapter are to identify research gaps that entail the implementation of this research, and to provide contemporary background knowledge on the topic of this research. To reach these goals, the chapter starts with the introduction which is comprised of determining the scope and the approach taken to organise the literature review. Then, it analyses relevant works which were selected based on the defined scope and synthesises their findings. Finally, there is a summary for the chapter.

2.1.1 The scope of this literature review

At the preliminary stage of this research, I tried to widely search for and examine the whole body of relevant studies in order to affirm my initial thinking and intentions for the project. Because of the breadth and ever-changing nature of the literature, particularly in the educational use digital technologies, no claim can be made that this literature review comprehensively covers relevant studies and content of the existing literature. So, I managed as much as reasonably possible the relevance and quality of the materials included in the literature review by identifying three criteria for the selection of material.

First, this literature review substantively limits its scope to studies on ET language teaching pedagogy and ET teacher professional development (TPD). The obvious reason is that the aim of

this research is to explore primary school teachers' experience on the phenomenon of integrating ET in language teaching, which involves ET integration in language teaching and ET TPD. In order to better understand the teachers' ET use and their perceptions on the ET TPD they received, this section gives an insight into the wider background knowledge on learning theories and language teaching pedagogy. The literature review included language teaching and teachers in general.

Second, this literature review prioritised peer-reviewed academic journals because they are considered the most general and common sources for literature reviews (Creswell & Guetterman, 2019). Being subjected to the peer-review process, which is typically double-blind, also ensures some degree of validity to the articles as they have been reviewed by those considered to have expertise in the particular fields. In addition, conference proceedings, international organisation reports, book chapters, PhD theses were occasionally cited where it was appropriate.

Third, the geographical scope of this literature review is broader than Vietnam, though I chose Vietnam as the focus context of this research. The review expanded to international contexts and applicable studies notwithstanding of their contexts. This helped to situate the study within the broader international context.

2.1.2 Plan for organising this literature review

In order to have a logical organisation for this literature review, I selected and arranged the work based on the answers to the following five fundamental questions:

1. What are the learning theories that influence the use of ET in language teaching?
2. How is the acquisition of mother tongue (L1) and foreign language (L2) and L2 pedagogy?
3. What language teaching methods have been applied with ET integration?
4. What did teachers in other studies perceive as factors that influenced their use of ET in language teaching?
5. How is ET teacher professional development organised worldwide?

This chapter investigates pertinent literature to obtain answers to these questions and is ordered in view of these questions.

2.2 Learning theories

Learning theories are frameworks on how knowledge is received, processed, and retained during the learning experience (Schunk, 2012). Regarding pedagogical purposes of using educational technologies (ET) in language teaching, it is essential to discuss how language teaching with ET is facilitated in different learning theories. This section discusses the significance of learning theories and their application to language teachers use of ET.

Teachers generally rely on four learning theories that underpin their practice, which are widely accepted as being behaviourism, cognitivism, constructivism, and connectivism.

Behaviourism

In behaviourist learning theory, learning is a behavioural change, which can be scientifically observed and measured, and is caused by external stimuli (Gedera, 2014; Skinner, 1958). Two originators of behaviourist theory were John B. Watson (1878-1958) and B. F. Skinner (1904-1990) and the theory's advocates were Thorndike (1913), Pavlov (1927), and Skinner (1974). In their perspectives, the mind was considered as a black box and the mind's inner processes are ignored. Learning is believed to take place when there was observable evidence; however, what was going on in the learners' mind is not able to be explained.

Three good examples of behaviourism in the use of ET are drill and skill programmes, tutorial programmes, and educational games. The first example of behaviourist learning using ET was the early use of computer based learning (Ally, 2008) such as online grammar and spelling programmes . In classrooms, teachers used computer soft wares including drill and skill practices which presented students with a problem and requested them to answer. When the learners answered, they were provided with positive or negative feedbacks. However, drill and practice programmes did not teach new information to the student, because they practised the same skill repeatedly (Mayer, 2003). A second example is the use of tutorial software, which is in contrast with a drill and skill software. Tutorial software programmes provided students with new information. Tutorials used programmed instruction and are used for remedial courses because they can be flexible through the learner skipping certain levels or prioritising which section to do first. Another example of a learning software based on a behaviourist perspective are educational games. Hartsell (2006) stated that games provided an interesting theme such as solving a mathematics' problem to prevent an ant from invading a picnic basket. Such games are similar to

the drill and skill software. In general, these programmes are only used as additional supports because although they aided students in acquiring basic skills, students might not understand what is being learnt. Students can be passive learners who were unable to apply their lessons from games in new circumstances (Mayer, 2003). The drawbacks of behaviourism resulted in a new school of thought which recognised the value of the human mind - Cognitivism.

Cognitivism

Cognitivist theorists believe that learning relies on both internal and external factors, not just observable factors like behaviourism theory. Jean Piaget (1896–1980) is the pioneer of the cognitive learning theory. For Piaget, learning was the mind's internal process including "memory, thinking, reflection, abstraction, motivation and metacognition" (Ally, 2008, p. 21). In the learning process, students linked the new information to what they already knew, which was named as schema (Hartsell, 2006). So, learning is an active and cognitive process in cognitivism, which is in contrast with behaviourism.

In responding to behaviourism and under the influence of the computer's invention in the 1950s, cognitivists studied in non-natural settings of laboratories (Mayer, 2003). For cognitivists, both computers and human beings are involved in cognitive processes such as acquiring information, reserving information, or making decisions.

Cognitivist views have been evidenced in technology-based learning. Some examples of these computer applications are problem-solving software and simulation programmes in which learners develop their cognitive skills (Hartsell, 2006). Other resources incorporating cognitive perspectives, which were used for tutorials and information databases, are encyclopedia and internet resources (Hung, 2001). Learners are exposed to activities where they recognise and learn complex strategies and techniques in order to develop their metacognitive skills. In addition, teachers use a cognitive approach play the role of a facilitator or a tutor in assisting students rather than as an instructor (Motschnig-Pitrik & Holzinger, 2002). To sum up, with technology-enhanced learning in cognitive perspectives, learners undertake research, reflect on their own experiences, choose ideas, arrange the ideas, and then present their conclusions and opinions on a given topic or a situation (Hartsell, 2006).

The limitation of Cognitive theory is that it highlights artificial settings more than natural academic settings of human beings (Mayer, 2003). Cognitivism focuses on information and

mechanical processing rather than knowledge and the deliberate construction of knowledge. This view ignores three crucial aspects of learning, which are learner motivation, culture, and biology (Mayer, 2003). The lack of Cognitivism theory's understanding of these three crucial aspects of learning led to a new perspective which is known as Constructivism.

Constructivism

Constructivists believe that learners actively build up their knowledge based on their previous experiences (Mayer, 2003). From experiences, learners actively process knowledge by choosing relevant information, then arranging it coherently, and connecting it with an existing body of knowledge. The connection also reorganises humans' pre-existing knowledge (Pelech, 2010) The theory was formally born in 1977 with its ideas and concepts having roots in the work of well-known educationists and philosophers such as Plato, Aristotle, and Confucius (Pelech, 2010). There are two main trends of Constructivism in research, which are Cognitive Constructivism and Social Constructivism. The most notable exponent of Cognitive Constructivism is Jean Piaget. His view is that the interaction between humans' experiences and ideas makes the learning happen (Barrouillet, 2015). He initiated a stage theory which is based on two concepts: assimilation and accommodation. A learner's mental structure initially assimilates or "digests" the incoming information. If the information is proved to be inappropriate or cannot be comprehended by the existing mental structure, a modified structure develops or, in other words, accommodation happens.

The limitation of Piaget's theory is that it ignores the collaborating nature and social aspects of learning, thus, Social Constructivism was born with attention to these collaboration and social aspects. Vygotsky (1978), a Russian psychologist, identified the social aspect of knowledge. He claimed that humans create meaning and make sense of their experience collaboratively and that learning is enhanced by interactions in social contexts. Vygotsky's concept of the Zone of Proximal Development (ZPD) is described as the distance between where learners can learn on their own and where they can learn with the help of more capable others or in collaboration with significant peers in social contexts.

The above idea of Vygotsky about learning through collaboration in social contexts is in close relation to the idea of using of ET in classroom practice (Brush & Saye, 2009). The reason for the close relationship is that, when using ET in classroom teaching, teachers try to bring to the

class more authentic materials of real beyond-school contexts, or to create social context to give students chances to interact with their peers. These make students the centred of the classroom's activities, or in other words, the classroom is student-centred. However, the above learning theories do not mention the learning that occurs in technology contexts (Siemens, 2004). As a result, Connectivism learning theory was born and took into account the learning with educational technologies.

Connectivism

Connectivism is a learning theory that focuses on the learning opportunities created when individuals are connected to each other by a digital network (Siemens, 2017). Siemen was an advocate of the theory in "the digital age" since 2004 with his first online article "Connectivism: Learning as a network creation". He pointed out that the other three traditional theories-behaviourism, cognitivism, and constructivism-just focus on the learning that happens inside a person without the storage and manipulation of technology. So, the alternative theory of connectivism emerged to acknowledge that learning was no longer an individual and internal process (Siemens, 2017). According to connectivism, learning does not only happen inside individuals, but also takes place outside people, and the outside knowledge is stored and manipulated with the aid of technology. The theory focuses in depth on tasks and the skills that learners need to acquire in a digital age.

Connectivist classrooms are student-centred, which creates more opportunities for students to learn new skills by incorporating social media, collaborative software-based tasks, gamification, and online courses. For illustration, Chen and Hu (2018) carried out a study for Chinese first-year students studying English as a second language applying social network (WeChat) in a mobile-supported tool. They found out the technology enhanced students' critical thinking skills when their students use the second language. Also, software-based collaborative tasks (Lin et al., 2016), or playing serious games (Sevilla-Pavón & Nicolaou, 2017; Supuran & Sturza, 2017) proved to engage student learning in authentic context so that they could use the second language naturally. In addition, computer-mediated virtual environments could reduce students' anxiety physically and psychologically, and thus encouraged students to communicate in their target language. Students were more confident in speaking to self-express and in presentation or debate skills due to participating in in-depth online activities and discussions (Habibi et al., 2018)

However, there has been various criticism of Connectivism. Verhagen (2006) considered Connectivism as a pedagogical theory, but not a learning theory because the theory did not describe the nature of knowledge nor explain how knowledge was acquired by learners. Chatti et al. (2010) pointed out that Connectivism misses some crucial concepts for learning such as learning from inquiry, reflection, or making mistakes. In addition, Şahin (2012) and AlDahdouh (2017) argued that Connectivism is the extension of Constructivism. Al Dahdouh's (2017) study showed that researchers of Artificial Neural Network (ANN) basically used principles of Constructivism to teach ANN and the principles of Connectivism were only utilised after that. Furthermore, Voskoglou (2022) proposed that Connectivism was a complement of traditional learning theories in the current digital era. Table 2 shows the four theories, their meaning and application.

Table 2: *Four theories meaning and application*

THEORY	EXPLANATION	APPLICATION
Behaviourism	Learning is a behavioural change which can be examined in a structured and observable process. The mind's inner process cannot be explained. Students are passive in the learning process.	Drill and skill programmes, tutorial programmes, and educational games. Teaching approaches are teacher-centred.
Cognitivism	Learning depends on both internal and external perception process. Students link the new information to what they already knew or their current schema.	Technology-based learning such as problem-solving software, simulation programmes, encyclopedia, and internet resources. Teaching approaches are usually still teacher-centred but with opportunity to be more student-centred.
Constructivism	Learning builds upon learners' previous experience and understanding to "construct" or form a new perception. Students actively interact in social contexts.	Technologies are used in classrooms to bring to class more authentic materials beyond school contexts. This provides opportunities for students to interact with their classmates. Teaching approaches tend to be more student-centred.
Connectivism	Learning happens both inside and outside learners created when learners are connected to each other by a digital network. The outside knowledge is stored and manipulated with the support of technology. Students need to learn digital-related tasks and skills...	Create a connectivist classroom with social media, collaborative software-based tasks, gamification, and online courses. Teaching approaches are student-centred.

The four theories are the points of a continuum with behaviourism the most teacher-centred and connectivism the most student centred. According to behaviourism theory, teachers control activities in classrooms with ET support. In later three theories-cognitivism, constructivism, and connectivism, ETs help teachers in delivering lesson with less control of teachers and more students' engagement and collaboration in their learning process.

In summary, the section has just answered the first fundamental question on the four learning theories-behaviourism, cognitivism, constructivism, and connectivism-that have impacts on the use of ET in language teaching. The four theories have evolved overtime to improve the drawbacks of the previous theory and to catch up with the development of ET in the society. Each theory has their own application in the teaching practice from teacher-centred methods to more student-centred ones. The next section continues with language teaching pedagogy under the influence of the theories to answer the second fundamental question of this literature review.

2.3 Language teaching pedagogy

Language teaching pedagogy is under the "umbrella" of learning theories. It entails the approach taken towards facilitating learning and incorporating techniques utilised to teach languages. There are several aspects of teaching languages, each with some benefits and limitations. While some are widely used, others are rarely used (Richards & Rodgers, 2014). This section reviews literature on the aspect of language teaching pedagogy. Much emphasis will be given to L1/L2 pedagogy because this research aims at exploring teachers' experience on using educational technology in teaching L1 and L2 in Vietnam primary schools.

2.3.1 Mother tongue and foreign language acquisition

A mother tongue, can be defined as the first language known by a person at birth (Fall, 2020). This definition can also be associated with "first language" (L1). People acquire L1 they encounter first before they start school. An individual does not have the luxury of choosing their L1 as it comes to them as a birth right or inheritance. Later, they may strive to acquire another language which is conceived as foreign language or second language (L2) (Gass & Selinker, 2008; Kramsch & Whiteside, 2007).

Another aspect worth noting with respect to first language is that its acquisition process is natural and rapid (Christiansen, Contreras Kallens, & Trecca, 2022). On the other hand, learning a

second language as a foreign language can differ from one language to the other and from one individual to the other and cannot be as quick as the acquisition of first language. A first language is usually acquired with great proficiency within six years from birth, while L2 learning takes years to reach native level of communication (Paradis, 2019) Also, the learning and acquisition of a first language is usually natural and hence there is no need for specific guidance and instruction as is the case with learning a second language. L1 stands as a natural aspect of an individual's daily life unlike L2 as a foreign language which is a new concept that an individual typically chooses.

Another essential attribute associated with first language acquisition is that it does not need any conscious effort since the acquisition process of the language is subconscious. On the other hand, L2 necessitates constant conscious effort for the learners to completely internalise the structures of the language (Ur, 2013). Additionally, L1 is one of the significant factors of an individual's culture. Being L1 of a person, L1 largely affects the acquisition of other languages. The learning of a second language as a foreign language depends on the structures of L1 (Salaberry, 2001). For instance, in cases where the structure of L1 is similar to the second language, it becomes easier and faster for learners to comprehend it.

The next section is going to review L2 pedagogy which is widely studied.

2.3.2 L2 pedagogy

A foreign language (L2) can be defined as a language that an individual uses other than their mother tongue (L1). Learning a new language entails speaking, writing, reading, and listening, sometimes even a new alphabet or writing format (Cook, 2016). Students experience and participate in activities using the target language almost limited in the classroom (Kecskes & Papp, 2000).

Chapelle and Sauro (2017) asserted that L2 pedagogy is a part of a bigger field of applied linguistics, research in L2 acquisition, various disciplines in linguistics, and other fields outside linguistics. There are different methods and approaches linked to L2 teaching and there are different ways of categorising language teaching methods. Table 3 shows the methods that have gained prominence and are explicitly mentioned in the research literature through two perspectives.

Table 3*: Outline of language teaching methods in two perspectives*

Fauziati (2008)	Djigunovic & Kranovic (2009)
Traditional Methods • Grammar-Translation Method (GTM) • Direct Method • Situational Language Teaching (STL) • Audio-Lingual Method (ALM) • Cognitive Code Learning (CCL) **Designer Methods** • Community Language Learning (CLL) • Total Physical Response (TPR) • Silent Way (SW) • Suggestopedia • Natural Approach (NA) **Communicative Approaches** • Communicative Language Teaching (CLT) • Task-Based Language Teaching (TBLT) • Competency-Based Language Teaching (CBLT) • Content-Based Instruction (CBI) • Genre-Based Instruction (GBI)	**"Historical Overview"** • Grammar-Translation Method • Direct Method • Reading Method • Audio Lingual Method • Audio Visual Method • Cognitive Code Learning - Humanistic Approaches - Community Language Learning or counselling-learning (Charles Curran) - Silent Way (Gattegno) - Suggestopedia (Lozanov) - Natural Approach (Krashen & Terrel) **"The Present"** • Communicative Language Teaching (CLT) • Task-Based Language Learning • Computer-assisted language learning (CALL)

The lists of methods according to Fauziati (2008) and Djigunovic & Krajnovic (2009) in Table 3 can also serve as the basis for checking which methods are parallel with particular techniques

when using educational technologies in cases where what method the use of technology adheres to whether intentionally or unintentionally is not explicitly stated. In reality, people may do things with a particular belief in mind, but are unaware of the related academic and philosophical underpinnings (Divers & González-Varela, 2013).

As can be seen in Table 3, Fauziati (2008) had three categories (traditional methods, designer methods, and communicative approaches) with 15 sub items, while Djigunovic & Krajnovic (2009) had two categories (The History and the Present) with 13 approaches. The similarity between the two perspective is that they both consider the four approaches of Grammar-Translation Method (GTM), Direct Method, Audio-Lingual Method (ALM), and Cognitive Code Learning (CCL) as traditional or old teaching approaches, not current trends. The difference between the two perspectives is the up-to-date characteristics of the approaches. While Fauziati had only one Traditional group relating to time, with the other two groups relating to the design and communication, Djigunovic and Krajnovic categorised all methods according to time. The latter researchers believed that there were only three modern approaches-Communicative language teaching (CLT), Task-based language learning, and Computer-assisted language learning (CALL). The first perspective of Fauziati (2008) is not consistent as a way to categorise teaching approaches. The second perspective of Djigunovic & Krajnovic (2009) reflects current approaches, which does not necessary mean the most effective approach.

There is another way to categorise language teaching methods that was articulated in a study by Liu and Shi (2007). These authors simplified other people's long lists into only four methods – grammar-translation method, audio-lingual method, humanistic educational method and communicative teaching method. Liu and Shi (2007) way of categorising language teaching methods is more suitable for the purpose of this research. These methods will now be considered in more detail.

Grammar-translation method

Grammar-translation method, also known as a teacher-centred method, aligns with behaviourist learning theory. This is the method for teaching foreign languages that prevailed for centuries from the early 16th century (McLelland, 2018). It operates by memorisation of grammar rules, and language analysis, in order to translate literary texts. The purpose of this is for training the student's reading ability to reach a level of reading literature in the target foreign language

(Richards & Rodgers, 2014). Language instructors deductively teach students grammatical rules and let students practice the rules by doing grammar drills and translating texts from a target language to L1 or vice versa. By this way, students learn rules of grammar by rote, a method of memorising by repetition.

While Grammar-Translation Method is the oldest method in language pedagogy, there are still institutions that use it and there are programme developers who create materials based on its principles, particularly computer programmes that promote drill and practice (Warschauer, 2013). The technology evolved from the use of the blackboard to the use of OHP to computer programmes. Now, there are computer-generated translations available from different programmes whether they are for use in a grammar-translation method class or for a class using different methods (Bikowski, 2018).

Before 2015, the use of ETs was popular in primary school language lessons but the teachers still used ETs in lecturing style. For example, primary English language teachers in Taiwanese elementary schools were observed using ET for displaying information, instruction, and learning content most of the time. The interaction in class was mainly between the teachers and the whole class rather than among students (Wu & Wang, 2015). This teacher-led style was also confirmed in the studies conducted by Xiao et al. (2011), and Li (2014) in secondary schools in China. They found that the teachers in their studies used Word and PowerPoint to embed images, audio, and video files to prepare lessons and display their lessons in English language classes. The teachers delivered most instructions and led the whole process by presenting the e-lesson contents, and assigning tasks to their students. In other words, the teachers were the main source of input in their classrooms.

However, studies about teaching languages with ET integration from 2015 showed a trend of shifting from teacher-centred approach to student-centred approach (Chua et al., 2021).

Audio-lingual Method

The audio-lingual method is also a teacher-centred language teaching method under the influence of behaviourism. The method appeared after the Grammar-Translation method, in World War II and was further developed in the 1960s (Zillo, 1973). Audio-lingual method became a dominant approach of language teaching because learners were believed to achieve communicating skills faster than the grammar-translation method (Kakunta & Kamanga, 2020). The method consists

of teaching a new language by listening and speaking as the central skills, and implementing drills related to it (Zillo, 1973). In short, this method of language teaching is based on teaching students' grammar and letting them practice its rules through various types of drills until the new language habits are formed and speech becomes natural.

Several ETs have been used in language teaching to enhance the use of practice drills. Zillo (1973) mentioned that tape recordings were used for repetition exercises. Aside from tape recordings, language labs were used to promote repetition drills. In the study of Bidenko and Bespalova (2017) on the use of the Active Learning Method (ALM) in Ukraine for teaching English, they noted that the method could be used with a number of innovative technologies. As support of this statement on innovative technologies used for ALM, Dewi et al. (2021) investigated the use of Orai web application for this method. Orai is an Artificial Intelligence (AI)-powered app for practicing presentations, getting instant feedback, and interactive online lessons. The use of Orai app was meant to solve problems arising from difficulties in expressing oneself and the fears of committing errors and mistakes. In brief, ETs used to assist audio-lingual methods have been developing from old ETs like tape and tape recorder to a modern ET with AI technology-Orai, which can think and act like humans. In the next language teaching method-communicative language teaching method, ET is used in a more interactive way between teachers and students.

Communicative language teaching method

Communicative language teaching method (CLT) is a student-centred approach which is under the influence of constructivist learning theory. The method is the shift from emphasis on format to emphasis on communication (Cook, 2003). CLT empowers students to communicate in the target language. Activities in classrooms engage learners with the use of language which is more authentic and more meaningful. CLT helps students to acquire both knowledge and ability to use the language (Arnaud & Savignon, 1997). The CLT approach, which is applied in all levels of education from schools to universities, motivates students to learn due to authentic materials and interactive activities in classrooms such as ice breakers, think-pair-share, and role play. That's why CLT is becoming widely used worldwide (Alamri, 2018).

According to Eckman et al. (2013), there are different theoretical orientations among the contemporary foreign-language approaches and methods named above. They include cognitive,

structural, interpersonal, and functional approaches. Cognitive orientation is founded on theories of learning used particularly with foreign language learning. The focus is usually on the learning techniques that are compatible with the style of learners (Richards & Burns, 2012). Second language content is chosen in line with techniques and concepts that allow for generalisation about the language, competence, and memorisation leading to performance (Johnson, 2009). On the other hand, structural or linguistic orientation is based on beliefs associated with the structure of language and contrastive or descriptive linguistics. It entails the seclusion of syntactic and grammatical elements of second language taught either inductively or deductively in a prearranged sequence (Ellis & Shintani, 2013). It entails more meta-linguistic content and one has to understand everything about the language.

The other orientation is the interpersonal or affective orientation. It is founded on the concepts learned from social psychology and counselling and centres on affective and psychological pre-depositions of the learner that hinders or promotes learning. The orientation accentuates interaction between and among teachers and students and the condition of the learning situation, in addition to students' motivation for learning (Crookes, 2010). This is important for language learning as if the student is motivated, they retain concentration for longer time, and acquire the language more effectively. As well, more effective interaction between the teacher and students means the language can be situated in meaningful contexts. Within Crookes' approach, communication plays a pivotal role.

Communicative or functional orientation is founded on theories of language acquisition (Krashen, 1983). It is also known as the natural approach and is dependent on the utilisation of language for communication. It covers several concepts of the communicative act, with language structures chosen based on their utility in attaining a communicative purpose (Kurita, 2012). Instruction is centred on the input the students get, their involvement at their level of competence, and comprehension of the message of the language (Ellis, 2010).

People usually learn second language to be in a position to communicate with the native speakers of the language or others who use the same. In some instances, a second language is a personal choice of an individual unless it is a unit in a school course. This is unlike first language which is like an instinct, mostly triggered by birth and enhanced by the experience of being exposed to it

(Anderson, 2008). As opposed to first language, there are several alternatives to learning a second language and people may choose one or more with different languages.

Humanistic educational methods

Shakirova and Valeeva (2016) defined this as methods that "reflect the construction of education, the concept of humanistic, developmental, student-centred process of organisation of education" (p. 156). They further describe humanistic educational methods as those that foster cooperation and support the individual development of the learners, while promoting their relations with one another. This method relies mainly on connectivists' belief.

One example mentioned in their study is Immersion Language Learning Environment Method where the target foreign language is the only medium of instruction. The target is to acquire first oral language competence followed by reading and writing. To realise the creation of an immersive environment, "The English Village" was created in Daegu Geongbuk of South Korea (Shakirova & Valeeva, 2016). It was made to train the learners in the American way of life by starting with language. The students from seven to 14 years old were immersed in American way of life and used English only to communicate when they were in the village. They participated in many games under the form of cognitive activities. The games used were highly emotional and engaging, with potential communication materials, which made the language learning more interesting and attractive (Shakirova & Valeeva, 2016).

Setting up a little village to teach language like "The English Village" may entail a large cost of money for investment. Another ET-Virtual Reality (VR) may also be considered a costly ET, but not as costly as setting up an entire village. Instead of putting up structures, VR requires headsets that places participants into a virtual computer-generated environment to see things in an immersive perspective (Biocca, 1992). These range from visual and auditory, to tactile (Shih, 2015). Looking at how VR creates opportunities that foster cooperation, communication, and individual growth and development of language in a virtual environment, we can see how using VR is a humanistic technology in language pedagogy.

Overall, applying humanistic educational method to teach language with ET support like setting up a village or using VR is an ideal way of immerging students into a language environment and to make the language learning happen more naturally. However, it is also undeniable that using such ET to support this method is complicated and costly.

Postmethod pedagogy

Postmethod pedagogy was first explored in 1994 (Kumaravadivelu, 2001). Postmethod pedagogy is understood in a broader sense including strategies used in classroom, materials for instruction, learning objectives, measures of evaluation, and a wide milieu of history, politics, and sociocultural experiences which have impacts on L2 education either directly or indirectly. It is not just methods, but it goes beyond methods. Postmethod involves an awareness of the restrictions of the conventional teaching method concept and a preference to go beyond these restrictions. It goes beyond method and is an "alternative to method" (Kumaravadivelu, 2003, p. 32) but not another method.

In postmethod pedagogy, teachers and students are both autonomous practitioners. Teachers, with their own knowledge, beliefs, and experiences, are motivated to make their own decisions in their classrooms. They are self-responsible for their teaching from making decision, reflection, identifying issues, finding solution, applying new methods, and self-evaluation. In other words, they "theorise what they practice or practice what they theorise" (Kumaravadivelu, 2003, p. 37). Teachers in postmethod are knowledgable because they master all conventional methods and selective based on their own contexts.

Students in the postmethod have three important features which are academic autonomy, social autonomy, and liberatory autonomy. Academic autonomy means the students with teachers' guidance can keep track of their learning and expand their learning potential. While the academy autonomy is an intrapersonal characteristic, the social autonomy is more interpersonal, according to which students collaborate with their classmates, and participate in social events to communicate with proficient language speakers to maximise their learning opportunities. The third aspect of the postmethod learners, which is also the essence of postmethod pedagogy, is liberatory autonomy. Students in a postmethod classroom are encouraged to self reflect their learning and are provided with opportunities to form learning communities and exploiting the internet to get learning materials for their language study in classrooms. It can be said that teachers and students in postmethod are "coexplorers" in the language teaching and learning (Kumaravadivelu, 2001, p. 537).

In short, section 2.3 has just responded to the second literature review question about language acquisition and what teaching methods have been applied to teach L2. While L1 acquisition is

usually natural with less guidance, L2 is normally new and needs to be taught. As a result, there are more studies on L2 pedagogy. Literature shows that L2 pedagogy changes from more teacher-led methods (grammar translation and audio-lingual methods) to student-centred methods (communicative language teaching and humanistic educational methods), and then to co-explorer teacher-student postmethod which gives more freedom and more collaboration between teachers and students and outside world both online and offline. Having reviewed broadly L1/L2 pedagogy, the next section will narrow down to language teaching methods with ET integration, which addresses the third literature review question: "What language teaching methods have been applied with ET integration?"

2.4 Language teaching methods with ET support

Before answering the question about language teaching methods with ET support, it is crucial to understand what ET means in this research, how the development of ET in education is, the types of ETs applied in language teaching, and affordances of ET in education. Then, the understanding helps to have an insight in the methods of language teaching with ET integration.

ET in this research

In this research, ET refers to information and communication technologies encompassing both hardware, software, apps, as well as other mobile devices (e.g., laptops, iPad, smartphones) and electronic equipment (e.g., overhead projectors, visualisers) that are used by teachers in classrooms to assist their teaching. ET has developed rapidly in recent years, and its growth has affected many areas of education, including language teaching. The rapid development of ET and the ubiquitous nature of their use in everyday life makes the integration of ET essential for language teaching and influences teaching methods (Chapelle & Voss, 2016). Now, I am going to review the development of ET in language teaching.

The development of ET in language teaching

From 1970s, when the term "Computer Assisted or Aided Language Learning" or "CALL" was conceived (Warschauer, 2013), where computers, as part of educational technologies, became more popular and have changed language teaching and learning significantly over the last decades. Initially, big computers or mainframes were used to check the accuracy in language teaching. Computers were mainly used with programmes to provide skill practice with drill format. The main types of activities students took this time were reconstructing texts, answering

closed questions and very occasionally interacting with other students. Teachers played the role of monitors (Bax, 2003). Then, in 1980s, there were labs devoted for language learning, and portable computers (PCs) started becoming popular. Students interacted with each other and computers more through tasks such as simulations and games. Teachers were more facilitators of the learning rather than just monitors. After that, from the 21st century, computers with internet and multimedia are integrated in language education. Students frequently interact with each other and sometimes with computers through the lesson. Consequently, the teachers' role became one of facilitators and managers of the learning. In short, the summary of the three stages of CALL is shown in Table 4:

Table 4*: Three stages of CALL*

Stage	**1970s–1980s: Structural CALL**	**1980s–1990s: Open CALL**	**21st Century: Integrative CALL**
Technology	Mainframe	PCs	Multimedia and Internet
Type of learning activities	Text reconstruction Answering closed questions Minimal interaction with other students	Interacting with the computer Occasional interaction with other students	Frequent interaction with other students. Some interaction with computer through the lesson
View of language	Structural (a formal structural system)	Cognitive (a mentally constructed system)	Socio-cognitive (developed in social interaction)
Principal use of computers	Drill and practice	Communicative exercises	Authentic discourse

Principal objective	Accuracy	And fluency	And agency

Note: Adapted from "Warschauer's three stages of CALL" (2013) and "Stephan Bax's Restricted, Open and Integrated CALL: an outline" (2000)

Although CALL was popular, there were no clear benefits of CALL with language acquisition knowledge and language skills development in different studies (Macaro et al., 2012). In language education knowledge like vocabulary, grammar, and pronunciation, only some studies presented positive findings that some technologies could support vocabulary learning (O'Hara & Pritchard, 2008; Tsou et al., 2002). Other studies showed no significant difference in the acquisition of words, grammar and pronunciation between students taught with CALL and students taught without CALL. It can be said that after reviewing the research literature on language knowledge and skills, CALL did not appear to make significant positive impacts on language teaching and learning. Now, I consider the next development stage – mobile-assisted language learning (MALL) to see how it developed and contributed to the language education.

MALL, which was first mentioned by Chinnery (2006), has developed exponentially with the development of different kinds of mobile devices and mobile applications (Ekinci, 2020; Godwin-Jones, 2011; Kim & Yeonhee, 2012). There are various mobile technologies which are used currently to support language teaching such as smart phones, portable computers, and tablets, including iPads (Ekinci, 2020). Also, the use of the mobile devices to develop language skills has been reported by numerous studies in the last few decades (Chen et al, 2020). It is because these devices support the mobile learning of individual language learners who each have their unique characteristics of learning and different learning requirements. The development of mobile devices leads to the growth of mobile applications (apps) for language teaching (Godwin-Jones, 2011). Bradin Siskin (2009) has developed a list of apps for learning different languages. Many of the apps have proved to be powerful in teaching languages such as Anki, Quizlet, and Byki.

MALL has pervaded the language education field in different education levels from primary level to university level. For instance, Iranian elementary students who were taught writing skills by mobile devices in groups performed better than those were taught by traditional instruction

(Gharehblagh, 2020). Fewer grammatical errors were found in the MALL group than in the paper-based group. Also, the students in the writing class with MALL felt positively about mobile integration and engaged more in classroom activities in comparision with the students in the other group. Other studies at tertiary level showed that listening lessons with mobile-assisted tasks were interactive, which created opportunities for students to develop their writing and communication skills (Islam, 2020). Besides, authentic materials which were used in listening lessons with mobile aides played a crucial part in the success of a lesson. In short, recent studies suggested that language teaching from primary to tertiary levels has changed significantly due to the revolution of delivering, conceiving, and experiencing language learning (Morgana, 2021).

In brief, the development of ET in language teaching from CALL to MALL shows that ET is used to create learning environments with more communication, collaboration, flexibility, and that the language learning with ET support is becoming more individualised. The next section is going to review types of ET recently integrated in language teaching and how they are used to support language teaching.

Types of ET used in language teaching

Up to the time this research was carried out, studies reveal that there are 21 types of ET used in language classrooms (Shadiev & Yang, 2020b). The 21 types of ET are games, videos, collaborative writing tools, corpus, automated feedback, websites, virtual reality, augmented reality, speech recognition or annotation, e-books, electronic dictionaries, intelligent tutoring systems, voice recording, robots, clickers, wearable devices, learning management system, digital library, interactive whiteboard, and Microsoft Office programmes. The sections below will investigate different types of ETs and then will make some comparisons among them in certain aspects, and undertake some critical analysis of these ETs in relation to the aspects.

Games

These are programmes where learners have certain goals to achieve by playing within the game context using their language skills. Butler (2015) classified computer games as either “serious” or instructional. Serious games are those made primarily for entertainment purposes. Instructional games, as the name suggests, are those developed mainly for the development of a skill. Serious games provide authentic language learning opportunities, while instructional games

provide controlled situations where learners can use and practice particular language skills (Alvarez & Djaouti, 2011).

In serious games, learners have to understand instructions and the storyline of the game (if any) in order to become successful. This involves comprehending the language, interpreting the instruction and being able to apply them appropriately within the game context. In the process, serious games can also develop other learning and life skills, depending on how the teachers and the learners process the gaming experience. In instructional games, the learners most likely need their linguistic competence in grammar, vocabulary and other areas in order to become successful. While it does not provide authentic language most of the time, it helps develop the skills that will be used in real-life situations (Zhonggen, 2018).

There are games made for very young learners and those made for intermediate and advanced ones. Those made for primary school learners are more likely to be focused on developing vocabulary and reading, and other basic literacy skills (Sandberg et al., 2014). Advanced games for advanced learners require more sophisticated language skills that help develop language competence and performance (Usai et al., 2017). Success in language gaming apps contribute to the learners' positive attitude to language learning as well as their positive perception of their progress (Chen et al., 2019).

Videos

Videos are recordings of moving images and sound, especially as a digital file or DVD (*Video*, n.d.). Videos have been used in language teaching for decades now. Initially, these videos were recorded in cassette tapes, for audio-visual method of language teaching. As technology advanced, the storage of videos also changed, and now, they are available online. Online videos can be authentic situations and conversations (and this is the more favourable option) or contrived situations and dialogues to provide examples for language features (Morat & Abidin, 2011). It is also a rich source of content for viewing texts such as TED talks, which provide good points of discussion (Huang et al., 2016). Videos are valuable learning resources for language teaching at any level, because unlike audio materials with sound only, videos added a vivid scene of the situation where the language is being used. In cases where videos were used, it could stimulate thinking about a topic which could serve as the point of discussion (Mekheimer, 2011).

Authentic videos also let the learners experience the language in its pure form (Herrero & Vanderschelden, 2019). The use of authentic videos allows reviewing what happened and what dialogues were made for language analysis and repetition. Learners got access to a well-directed video, and probably better audio and filming. If they were academically produced, they could easily be organised to highlight the language features that needed discussion and learning.

Automated feedback

Automated feedback is a feature of Microsoft Office. However, there are also other programmes, such as Grammarly, that offer a more sophisticated automated feedback that not only looks at grammar and spelling, but also word choice and sentence construction. Use of automated feedback helps learners improve written outputs by checking for grammatical errors and refining sentence construction before submission. By using such programmes consistently and seeing exemplars of appropriate grammatical structures, learners can develop their use of the right sentence construction overtime (Saricaoglu, 2019). This is useful for learners who are writing compositions, whether in the primary or advanced level of education, as long as they have access to a computer for word processing.

Virtual reality

In virtual reality (VR), learners interact in a computer-based environment where they see things at a more immersive perspective (Biocca, 1992; Steuer, 1992). The interactions with avatars are not limited to visual and auditory senses, but also extends to tactile senses (Shih, 2015). The VR learning experience has shown promising results based on the studies conducted on the use of this technology. It has been shown to increase the motivation and engagement of learners (Shih, 2015). But for a learner to experience VR, special headsets or devices are needed, and these are mostly expensive.

In using virtual reality for gaming, learners get opportunities to have conversations with other players using the target language. Again, going back to Krashen (1982), this relaxed environment allows the learner to speak more and hence practice the language more, leading to learning or acquisition. This technology is surprisingly workable for both primary learners and more advanced learners. Even learners at a young age, especially digital natives can have few problems with controlling the environment (Parmaxi, 2020). The teacher just has to set rules for learners to follow when engaged in learning using this technology.

Augmented reality

Unlike VR, augmented reality (AR) does not require special headsets. AR just requires smartphones or apps like Blipper or tablets capable of it. With AR, the learners can integrate digital information with real information in 3D space (Azuma, 2017). So, for instance, the teacher shows the picture of a random object like a pencil, using AR technology information about the pencil appears on the screen without needing to shift to another screen. A study conducted by Hsu (2017) revealed that the use of AR increased vocabulary, learner motivation and learner engagement eventually leading to language proficiency in students at primary levels as well as higher levels.

Robots

Humanoid robots are used in some countries to serve as communication partners of pre-school children (Mazzoni & Benvenuti, 2015). In the studies conducted, the presence of a humanoid robot not only aids in instruction, but also entertains young learners (Shadiev & Yang, 2020a). The application can, however, be notably useful for learners of other ages who are too shy to talk to their classmates.

Speech recognition

Speech recognition (SR) is a computer-based process by which spoken language is decoded and transcribed (Huang, Shadiev & Hwang, 2018). This is available with Facebook messenger and Google docs. For practicality, it is useful for users who prefer to speak rather than type down their words during a text-based conversation. It can also be useful for students who want to think freely with a flow of thinking and have their thoughts jotted down as they speak.

Speech recognition may not be very familiar to most teachers and learners, but this promising technology actually helps a lot in teaching the learners' correct spelling. Huang et. al (2019) found that this helped learners develop proficiency. Going back to Krashen's (1982) hypothesis regarding the affective filter, learners are more spontaneous and relaxed in speaking than in writing, so they are more likely develop proficiency faster by speaking their thoughts aloud first before they are checked for grammar and other mechanics in the written form.

Electronic glossary or annotation

Electronic glossaries or annotations are notations or comments that learners make to voice out their ideas regarding a certain text (Wolfe, 2002). This has been shown to increase proficiency in

the target language, for it promotes interaction with the text, even if the learners are on their own. Annotations may be words, pictures or voice message. Given the variety of ways learners can make annotations, this supports the thinking and learning styles of the learners. So learners who prefer to talk can give their annotations as they see fit for their learning preference rather than by a prescribed manner. Electronic glossaries or annotations can promote engagement even among primary school learners who may still have problems in writing complete sentences in comments. In the process, creativity is encouraged and developed further.

Intelligent tutoring system

The intelligent tutoring system (ITS) is a computer-based educational system theoretically tailor-fitted to the strengths and weaknesses and goals of a learner (Malekzadeh, Mustafa & Lahsasna, 2015). It is not an AI that independently processes responses or actions based on learner behaviour. Rather, it is a system that the learner should follow to achieve desired results. There are different ITS programmes available. For instance, Choi (2016) developed a tutoring system that gives corrective feedback to the learners. Allen, Crossley Snow, and McNamara (2014) developed an ITS for the development of writing skills. In studies for both ITS programmes, results yielded that with proper use, the ITS worked well in developing the linguistic skills that learners wanted to learn.

As this system requires interaction with an electronic tutor with possibly limited words, it is suitable for independent learners. If ever there are lesson levels for primary levels, the learners will have to be guided by an adult or someone who can properly and correctly interpret the electronic tutor instructions and remarks.

Voice recording

Voice recording is simply recording one's speech for feedback. A study conducted by Tecedor and Campos-Dintrans (2019) revealed that this practice can help develop language proficiency, especially for lower-level students in speaking Spanish. Their study identified that sometimes learners thought they pronounced a word correctly, but actually, they did not. Voice recording can help learners or the teachers detect areas of improvement. They reported that the use of voice recording can also be particularly useful for teachers to be able to listen to all the learners outside class hours. This means, the teacher has more time for teaching during class hours although with more outputs from learners to evaluate in their non-teaching time.

Learning management system

A learning management system (LMS) is the platform that host, manage and deliver e-learning (Dilani, 2014). It can be used by language teachers, not only to engage students and develop linguistic ability, but also probably to instill discipline among learners and evaluate the progress of the learner. An LMS has the potential to enhance students' language proficiency by facilitating engagement with language content. It helps to improve students' speaking skills by providing them with opportunities to communicate with teachers and peers in more personalised learning activities. It also promotes student confidence in using a language by virtual interactions (Cote & Milliner, 2015).

Collaborative writing tools

Four collaborative writing tools are Google Docs, Google Sheets, Wikis, and Blogs. One of the 21st century skills is collaboration, and this is only possible through communication. One way this is possible is through the use of computer applications like Google Docs (Ebadi & Rahimi, 2017). Two or more individuals can view and edit a document remotely while it is open in Google Docs. This is also possible with Google Sheets for inputting data if the task requires it. So, while the members of a group are chatting via Facebook messenger or meeting apps, they can put their hands on the document they are working on. There are also features in the applications that allows those invited for collaboration to insert comments on the documents under scrutiny. If learners are working on a sample text, they can share their ideas about the features of the text through the comments. If they are working with a literary text, they can note which part of the text they are commenting on. They could also share the screen in Zoom as it is edited. These activities can be done whether they are working synchronously or asynchronously (Kessler, 2018).

Wikis, which is an open publication collaboratively edited by and controlled by its viewers, gives opportunities for learners to collaborate, to produce content, and have their works published (Aydın & Yıldız, 2014).The fact that their works will be available for other people to read gives learners a sense of responsibility to make sure they do their research properly and they check their language, which enhances their language skills such as writing and reading. This also promotes the advancement of learners' knowledge and skills in different content areas (Wang, 2015).

Blogs, an informal website owned by a person or a group to publish their diary texts, on the other hand, offer text-based interactions regarding posted articles, documents (Phạm & Usaha, 2016) and many other advanced language interactions about current culture and academic topics (Sauro & Sundmark, 2019). Chang et al. (2012) and Kessler et al. (2012) examined how learners collaborated to produce academic content in blogs and engage in academic dialogues therein. In blogs, they can comment, answer questions as well as share and generate knowledge in an environment that allows them to use language in a situation. This type of technology maximises the use of language for academic purposes and authentic real life situations.

Microsoft Office applications

In the hands of creative teachers, the affordance of different applications that others used for particular purposes can be unexpected (Chikamma & Nwaudu, 2018). For instance, Microsoft Excel are mainly used for computations, but in the hands of a creative teacher, a spreadsheet could be turned into a crossword puzzle or a worksheet that gave a quick feedback on the response of the learner. PowerPoint presentations, which were mostly used by Turkish primary school teachers in Özerol (2009) study, could become interactive games or a timer in their lessons.

Overall, all 20 tools above were found by researchers to be useful and effective for both teachers and students in their language teaching and learning in terms of facilitating communication, enacting in real-life situations, practicing key language skills, and engaging students in language learning.

Regarding facilitating communication, instant messaging and social media have the same influence on promoting social conversation in a target language. The only difference is that social media promotes numerous conversations while instant messaging majors on one-to-one interactions. All these platforms have become a vital part of learners' communal lifecycle. They are considered learning platforms that aid in enhancing scholars' actions. They provide students with prospects to associate, access data and exploration hence improving their language learning (Chugh & Ruhi, 2018). Furthermore, to encourage students to communicate naturally, technologists have developed robots using the basic concepts of augmented reality. Applying the ET can significantly impact the language education (Lee & Leonas, 2018). The robots having augmented reality aids in encouraging language learning since learners are entertained and need

not be shy to communicate when they are learning. As a result, students can communicate more fluently and effectively in the target language.

In addition, intelligence tutoring systems (ITS) are based on computer-designed surroundings that aids in helping students in mastering problematic information and abilities through instigating effective intelligent procedures that adjust to learners. A learning management system is similarly based on intelligent tutoring schemes. Its concept emerges directly from e-learning and delivers educational materials to learners just like the ITS. Some education technologies have others embedded into them like the Microsoft office encompasses the Microsoft whiteboard in office 365 and Microsoft 365 tenants (Ilag, 2020). This makes learning more collaborative since sharing the whiteboard with a wide range of participants helps in connecting large numbers of learners.

Regarding enacting in real-life situations, there is an indication that both online videos and games have the same effect on language learning by providing authentic learning resources and motivating learning activities for learners. Both technologies aid in endorsing short-term and long-term language knowledge, enabling understanding, eavesdropping, and adopting collaborations amongst learners. These technologies aid in vocabulary and pronunciation development, thereby impacting the learner's speaking skills. They also act as effective ways of enhancing foreign language learning amongst students; hence their primary objective in language skill development can also be classified under digital resources.

In terms of practicing key language skills, collaborating tools (Google docs, Google sheets, Wikis, and Blogs) and robots are the ETs that facilitate communication in language lessons. By using these ETs, teachers create an environment which is less stressful for teachers and students to communicate and collaborate with each other. As a result, teachers can better facilitate student learning, and learners can be more motivated to learn writing and speaking skills. In terms of engaging students in language learning, corpus linguistic had positively impacted the language teaching and learning (Reppen, 2010). Researchers suggested that corpus could offer an influential contrivance in which students could discover and ascertain configurations of natural language providing evidence such as colligation, semantic prosody, etc. Therefore, corpus-based language teaching could motivate students and promote apprentices sovereignty that was highly appreciated in schooling (Qoura et al., 2018).

Ebooks

In the advent of digital technology, paper books are incrementally being replaced by their digital versions. With books transformed to digital versions, they become less bulky, and hence more accessible to the reader. Imagine 100 eBooks in the storage of a tablet computer. Wherever the owner goes, these ebooks go too.

Children's books are not an exception to this usage. In fact, children's e-books can also come with voice app that reads the books to them. This voice app for eBooks makes it easier to access information from the books even in situations when the owner wants to read, but the situation does not permit it, for instance in public transport, yet the voice app allows the owner to listen. Ebooks with voice app also help learners listen to the proper pronunciation of the words in the text in the absence of the teacher.

However, in the studies made regarding the use of ebooks, learners reported that it was unpleasant for them to read ebooks due to their preference of reading printed books and the harm of blue light to their eyes from the screen of ebooks (Shadieve & Yang, 2020). Such perceptions on the use of a technology lowers the motivation of learners. If it lowers the motivation of the learners, it may not be good for language learning. So, it may be a good idea in the future to look into the reasons why learners find ebooks unpleasant. Is it because of the innate negative attitude towards reading or the blue light emanating from the screen of gadgets?

Electronic dictionary

Before mobile apps were developed for smartphones, learners would turn to electronic dictionaries for words difficult to understand. Electronic dictionaries have stored data of words and their meaning. Instead of bringing a bulky dictionary, the learners can have an electronic dictionary to consult when they encounter unfamiliar words. Now, dictionaries can come as smartphone applications. So instead of bringing an extra gadget, the learners only need to have their phone with them. But even if the learners do not have a dictionary app installed, Google has made it easy to look for the meaning of a word as long as there is an internet connection.

The most common electronic dictionaries are the key-in word dictionaries (KWD) and the click the word dictionaries (CWD). In KWD, the user types the word and searches for its meaning. In CWD, the user clicks a word from the list of words alphabetically listed. But normally, these two are combined in most dictionary apps.

Now that online dictionaries are more accessible than that before, it is easier for the teachers to use them to help the learners with skills of building vocabulary. In a study conducted by Karras (2016), it has been revealed that learners who use electronic dictionaries can develop their vocabulary skills at a faster rate. The faster the learners develop a wide vocabulary, the better they become in developing their language proficiency.

Digital library

Given the presence of eBooks, there is need for a digital library as a storage for eBooks and e-learning materials – the digital library, and it has untapped potentials for content-based language learning (Wu & Witten, 2007). This allows the learners to access materials wherever they are without the need to carry heavy bags. One consideration for the use of this is the survey mentioned in the discussion on eBook where learners reported that it was unpleasant to read eBooks. Nonetheless, making learning materials available for learners wherever they are increases the opportunities for learner engagement even in situations where physical possession of books is impossible or inconvenient.

Corpus linguistics technology

A corpus (plural: corpora) is a collection of utterances in different linguistic situations. Corpus linguistic is an ET that includes techniques for studying texts with the assistance of computer (Burnard, 1999). The texts in corpus linguistics are in a large collection and include natural discourse in different contexts (Tono, 1999). Corpus linguistics has been proved by research as an effective and innovative ET for language teaching (Ma et al., 2021). It can serve as a reference for teachers and learners regarding structural constructions available for a certain language. Language researchers use corpus to study language features and identify language structures accepted in certain situations or identify the variety or level of formality of the construction they are using. This variety or level of formality is a powerful tool in teaching a language as it effectively assists teachers in designing teaching activities (Li, 2017) and is particularly helpful for teachers in determining which structures are suited for certain grade levels.

Websites and digital learning resources (DLRs)

A website is a group of web pages connected together in different ways (MDN Contributors, 2022). Digital learning resources (DLRs) are digital resources such as software, applications

(apps), programmes, or websites that attract students in learning activities and assist students' learning objectives (Education, 2018). These resources can be linked with content-based language teaching. Language, as the medium of information, comes in handy when looking for various information from websites and digital resources. In the process, the learners who do their research using websites and digital sources also develop linguistic skills in reading different genres of written literature. Sites that give specific assistance like online dictionaries also serve as instant references for learners. Along the way, learners who encounter unfamiliar terms and use the dictionary to learn them are able to add more words to their vocabulary (Knight, 1994). In this way, instant references help learners develop their vocabulary on their own and become more independent over time (Knight, 1994).

Clicker

In the broad educational context, a clicker is a device used to respond to the teacher as a wireless mouse, keyboard, or a smartphone that has similar functions (Pearson, 2007). The use of a clicker allows the learners to respond to the question on the screen without leaving their seats. It is, hence, a form of integrating ET in language education that promotes student learning engagement.

Another kind of clicker is a specialised gadget that allows learners to select their answers remotely from their seats all at the same time. After that the teacher can give the correct answer, but those who did not get the correct answer need not be revealed. It is found to have increased learner engagement and lessen the pressure giving answers after raising of hands.

Wearable devices

Wearable devices range from ear pods and smart watches and anything that can be worn on the body to support better communication. Studies done revealed that learners have positive attitude towards the use of smart watch for voice recording and other advanced uses relative to users academic and personal tasks (Shadieve, Huang and Liu, 2018). Given its affordances, wearable devices are more suited to intermediate and advanced learners and not primary language learners.

Interactive whiteboard

Interactive whiteboards are made possible by software for special gadgets attached to projectors that send electronic signals through the path of the light back to the computer. So the projector shows what is on the screen of the computer. Then, what the teacher or learner writes on the

board also appear on the computer screen. It was promising and engaging to use in language classrooms because of the interactions learners can have with the images projected on the screen (Cox et al., 2004).

Among the 21 ET above, there are four groups of ET with their own features. The first group of ET, which are games, videos, automated feedback, virtual reality, augmented reality and robots are all computer-based technologies that promotes learners' motivation and engagement. These ETs bring authentic materials to classrooms. The main aim of these ETs is to create a reality environment in which students can practise languages and interact with the environment with less involvement of teachers in the process of acquiring a target language. Through this, students can achieve automated feedback with digital resources as this form the basis of blended learning or distant learning amongst the students, hence encouraging language and learning process with less stress for students.

The second group of ET including speech recognition, electronic gloss or annotation, intelligence tutoring systems (ITS), voice recording, a learning management system (LMS), collaborative writing tools, and Microsoft Office programmes are computer-based ET which can record and store data of the language learning. With these ET, teachers can use to help students practise their key language skills. For example, teachers can use speech recognition to enhance students' pronunciation or speaking skill. As studies in literature showed, as using speech recognition, students could have a stress-free environment to practise speaking to the app. If the app could recognise their voice, that meant they spoke well. In contrast, if the app could not recognise, the students could self-correct or ask for assistance from peers or teachers. So, speech recognition helped teachers improve their students' self-regulated learning, and teachers became facilitator or instructor in speaking or pronunciation lessons. Similarly, by using voice recording, teachers can record their students' voice to track pronunciation or speaking exercises, which also reduces stress for students in a speaking lesson because students can avoid speaking in front of their teachers. Moreover, teachers can also record their voice as a sample for students to learn speaking skills without having to repeat themselves, and students can replay the recording at their convenience without worrying that they have to request teachers to repeat several times. In general, these ET play important roles in significantly improving students' language skills with less stress for both teachers and students.

The third ET group are E-books, electronic dictionaries, digital libraries, corpus linguistics technology, websites and digital learning resources (DLRs) contain data that exists in digital form and can be accessed through different media, and hence increase student learning autonomy. These ETs are found in software installed or desktop computers and laptops, mobile apps, web applications, etc. These learning technologies have their resources readily available to learners at any specific time since they can be accessed at any place, so students can take control and be personally responsible for what to learn, where, and how to learn. Teachers, as instructors, just guide their students how to use the resources, then, students explore the resources themselves in their own convenience to practise their language skills. These ETs can be used both inside and outside classrooms.

The fourth group of ET are equipment including clickers, wearable devices and interactive whiteboard, which were proved in literature to promote student learning engagement and to reduce stress for students while learning. Yet, clickers and wearable devices are individual devices which means in order to have these ET support in language classes, there should be one device for each student and teacher. In contrast, an interactive whiteboard can be used in one class for group activities or whole-class activities.

In the four groups of ET above, the first group including games, videos, automated feedback, virtual reality, augmented reality, and robots, seems to be more advantageous for primary L2 classrooms than other three groups of ET. Group one assists teachers to deliver, practise and evaluate students' language learning with authentic learning materials in language classrooms, while other groups do not and mainly assist in class activities and management. The ETs provide authentic L2 input such as documentaries, movies, radio broadcasts, and photographs. These ET can also be used by language teachers to create an authentic evironment in classrooms for students to practice a target language without much involvement of teachers. The only concern is that such ET like VR and robot might be too costly for widely use in all language classes, especially those in developing and under-developed countries. To sum up, all types of ET used in language teaching indicate the increasing necessity of ET because they facilitate communication, enact real-life situations, practice key language skills, and engage students in language learning, yet the cost of the ETs also needs to be taken into account as using them. The next section will review ETs'

functions together with their affordances which have significant impacts on language teaching methods later investigated.

Affordances of ET

Affordances of technologies are possibilities that technologies offer the actors who use them (Gaver, 1991). This way of understanding originates from the way that Gibson (1977), who first coined the term "affordances". He first used the term "affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill" (Gibson, 1979, p. 56). Then, he began the theorising the symbiotic relationship between the user and the environment. Based on these ways of definition, in this research, "affordances of ETs" can be understood as the possibilities that different kinds of ETs offer the teachers and students in their teaching and learning. In order to understand why ET is becoming more popular in education over time, it is important to review studies on ET affordances in education.

ETs provide primary schools with opportunities in a range of curriculum areas. For instance, in science, several studies have indicated that teachers using ICT in teaching could help students with prior experience acquire science knowledge better and the students tended to get higher scientific literacy scores (e.g., Luu & Freeman, 2011). Moreover, multimedia that create virtual worlds can facilitate the science teaching and learning. For example, in a case in which an Open simulator 3D Application Server was used in classroom, focusing on science of earth and life, students were able to do some difficult tasks which are impossible in traditional science classrooms, such as testing a hypothesis with virtual experiments and seeing the findings in a short period of time (Lansiquote, 2014). Another study about a game-based learning method to learn nutrition in a primary classroom confirmed that computer games could have a positive influence on different aspects of primary students' knowledge about nutrition (Jui-Mei, Chun-Ming, Hwang, & Yueh-Chiao, 2011).

In primary mathematics education, ETs facilitate the teaching and learning in various ways. For instance, Scratch-an online community where people can create their own games, animations, and stories-has proved to be able to facilitate mathematical thinking when teachers used Scratch for primary students (Calder, 2018). The results of the study about Scratch have shown that students taught by Scratch have their coding skills developed. Furthermore, Calder et al. (2018) suggested that some characteristics of mobile technologies (MT) were shown to support

students' mathematical thinking and understanding. Some affordances of MT such as haptic, multi-representation and dynamic experiences can reshape the nature of learning mathematics. Another ET-the artificial intelligent (AI) robot, could teach English vocabulary in classroom. (Huang, 2021). It also could complete the functions of role play and making free dialogue in English with primary students. In Huang's study (2021), the robot successfully attracted students' attention and motivate students' initiative in classroom practice.

Literacy learning and teaching through ETs has shifted to "multimodal literacy" or "new literacies" which involve the understanding and creation of texts included of various modes of communication like audio, moving images and text (Mills, 2010). In recent years, interactive whiteboards (IWBs) have become popular in primary classrooms for teaching literacy where they can support illustration, explanation and discussion (Dillenbourg & Evans, 2011). Dillenbourg and Evans (2011) recommended that IWBs can enhance face-to-face interactions. For instance, small groups of primary students can use an IWB to discuss and develop concept maps, which facilitate their reading and writing. Students could comprehend reading texts better, and brainstorm more ideas to use in their writing lessons.

In primary language teaching some key affordances of ET are educational affordances, social affordances, and technological affordances (Woo et al., 2011). For educational affordances, ET, such as wiki (a website which allows users to easily edit its content collaboratively), allowed students to collaborate in writing as they could share their writing, comment on other students' works and examine other students' samples (Parker & Chao, 2007). Also, such ETs like Wiki, the researcher's tracking system, allowed teachers to scaffold students after viewing students' work from the Internet. In terms of social affordances, some platforms with peer-commenting function was helpful as it encouraged communicating among students, even who were shy or hardly spoke English or different genders. Regarding technological affordances, ET allowed students to communicate and feedback quickly which enhanced task accomplishment. So, the affordances of various ET are contributing to the nature of the learning through the current integration of ET across all learning areas with more interaction and collaboration among students of different characteristics (Adkins, 2018).

To sum up, from the teachers' experience, the affordances of ETs in classrooms are in two main categories. One main advantage the teachers identified is that ETs help develop students' science

knowledge and skills which require ability to think and act quickly such as mathematics thinking skill and coding skill. Another affordance of ET is enhancing students' interaction and collaboration with others by both face-to-face or by a software, learning management system. So, ETs support teachers to create a more relaxed learning environment to develop students' skills and knowledge.

Methods of using ET in classroom language teaching

This section reviews the ways that the teachers in research reported in the literature have used ET to assist their language teaching in classrooms. My review of the literature revealed that the teachers used two main approaches which are teacher-centred and student-centred approach.

Teacher-centred approach - presenting knowledge

Literature shows that teachers used ET as a replacement for traditional methods, which means they used ET to present and illustrate the content of their language lessons (and a reminder of the substitution level of the SAMR model). Since 2000, instead of using blackboard the most common type of technology in American education that U.S. teachers use to teach language in their classrooms is overhead projectors (OHPs), an excellent ET for the teacher-dominated approach. Parvin and Salam (2015) conducted a study with teachers in Grade 4 on the use of e-content aligned with National Curriculum of Bangladesh, a country in South Asia. The classrooms were equipped with laptops and projectors. The teachers in their study were observed to use these ET to present the e-content and audio-visual materials to teach four language skills (listening, speaking, reading, and writing), pronunciation, and vocabulary. They no longer used chalk and board or CD players, traditional ways of presenting knowledge. Additionally, the teachers prepared their lessons using laptops and then displayed the e-content on the projectors to the whole class. The audio-visual materials were also saved in the laptops and played in class using laptops and projectors. As a result, the students showed increased enthusiasm in the classes, and this eventually led to the improvement of their performance.

Similarly, there is a study by Bagila et al. (2019) with elementary school teachers of Kazakhstan, an Eastern Europe country. The teachers taught Kazakhstan language as an L1 in their schools. The language teachers in this research alternated traditional technologies such as textbooks, chalk, and board with variety of ET with their basic functions. They used many kinds of audio-visual technologies such as on-screen learning tools (e.g., film-strip, epi-objects), or audio

learning tools (e.g., disc, tape, tape recorder) in their language lessons. The ET were used effectively to present films, objects or to play audio files in language classrooms. The findings showed positively that the students' cognitive activity, creativeness and logical thinking were improved.

Also, a study by Dwiono et al. (2018) found that most of the English language teachers in a university in Indonesia, another Southeast Asian country, were using ETs' basic functions without any change. They used basic features of Word to type their lesson plans in their laptops, and they used PowerPoint to prepare their lessons and then presented in classrooms by using available OHPs. These ways of integrating ET in classroom are to substitute the use of blackboards and printed textbooks without any changing or improving the ET's functions. Teachers were the main source of knowledge.

In short, the above studies revealed that language teachers used ET in classroom with basic functions of the ET to present and illustrate the lesson content in visual or audio forms. The results of this teaching approach were positive because students' overall engagement and skills were improved.

Student-centred approach - Communicative Language Teaching

One student-centred approach is Communicative Language Teaching (CLT). In CLT, the learner has a specific purpose and plays certain roles in communication for specific settings. Based on these, the learners learn the features and functions of language (Richards, 2006). I will next outline and discuss several ways ET used in CLT to support language teaching practice.

Digital Storytelling (DST) is recognised as an effective instructional method that has been used for generations (Andrews et al., 2009) even in English as a Foreign Languages (EFL) teaching (Dujmović, 2006) and known as Teaching Proficiency through Reading and Storytelling (TPRS). A study conducted by Tavoosy (2018) focused on the use of DST for pre-intermediate level students whose age ranged from 18 to 24 at the language Centre of Tehran Institute of Technology in Guilan province, Iran. The DST software belonged to "Up and Away" series created by Oxford University Press in 2004. This is a six-level series from beginner to intermediate, in which the third level was used for this research. To prepare the learners for the listening texts, Motivated Strategies Learning Questionnaire were used. Then, during lessons, teachers taught speaking and listening by a software which featured narrations from native

speakers of English in British and American accents. Thus, students were exposed to stories with native speakers. Findings showed that students' motivation was generally improved when they were taught by this DST software.

Besides, teacher used ET as a tool to create a student-centred environment by facilitating communication and collaboration between teachers and students or among students themselves in a virtually real setting. Below are some ways that language teachers used ET to promote student-centred language classrooms.

Games are developed for both entertainment and instruction. There are games made for primary school learners to specifically address their perceived learning needs. Those made for primary school learners are more likely to be focused on developing vocabulary and reading, and other basic literacy skills (Sandzberg, Maris & Hoogendoom, 2014). Since the language games also reflect what they are learning in school, success in language gaming apps positively affects the attitude of the learners towards language learning as well as their perception of their progress. (Chen, Liu & Huang, 2019). This helps to motivate the learners to keep on going with their language learning.

Video conferencing is an online technology that allows people in various places to have face-to-face and a live audio-visual meeting. Some popular videoconferencing software are used at all levels of education are BigBlueButton, Zoom, and Cyber Home Learning System (CHLS). Language teachers mainly apply student-centred approach when using VCS, especially in COVID-19 pandemic which requires application of alternative pedagogical media. At university level, language teachers often use videoconferencing systems such as BigBlueButton or Zoom to create speaking practice activities (Gruber, 2021). In the video conferences, learners are given specific roles to play in particular settings. Discussion of language features are also carried out among the students in the video conferencing.

In primary level, Web 2.0 Wiki is a space where the participants can add content. The use of wiki technologies has been proven to be effective in developing critical thinking skills among upper primary learners. The positive developments in the learners can be attributed to the opportunities created by the technology for the learners to search for information and create content collaboratively. The opportunities for communication outside the classroom increased the performance and competence of the learners (Chu et. al., 2012).

Barmao (2014) reports the challenges and opportunities by the laptop project in Kenya. The laptop project was carried out in Kenya schools to promote the use of ICT in education in the primary level. The goal of the project was to provide one to one ratio of laptops for the learners. The provision of laptops opened the opportunities for the learners to access information (so that constructivist learning is more possible). The use of laptops was instrumental for project-based and collaborative learning among primary school learners. The scaffolding and enrichment activities would also be embedded in the use of the laptops for learning.

Overall, with the development of different types of ET in language education, teachers have applied two main approaches in their language classes with ET support, which are teacher-centred and student-centred approaches. Regarding the teacher-centred approach, teachers utilised visual and audio functions of ET to present and demonstrate the language content to create a more engaging environment. Teachers using this approach play the role of knowledge provider. Literature shows that ET used mainly by the teachers are laptops, projectors, Word, and PowerPoint. These ETs are friendly user and popular because teachers in different countries used them to alternate traditional tools like chalk and boards. On the other hand, other teachers use a more student-centred approach, in which they use collaborative affordances of ET to promote a communicative learning environment. In this environment, teachers are facilitators and students can contribute knowledge and collaborate with their peers. The ET used to facilitate this student-centred approach is still laptop like in teacher-centred approach but more individually used, not whole-class presentation. However, it seems that using ET in this way is costly and cannot be widely applied due to high cost. Besides, other ET are also used such as DST, video conferencing, and Web 2.0 Wiki which enhance collaboration and communication among students. These ET can be applied more widely not only for students within classrooms but also for students outside classrooms.

Next section is going to review literature according to guiding question four, which addresses what factors have been perceived by teachers in previous research as having influence on teachers' use of ET in classroom teaching.

2.5 Factors that influence teachers' use of ET

As this research aims at exploring the primary language teachers' experience of the use of ET in their teaching, it is necessary to consider perceived factors of using ET that might motivate or

demotivate teachers with their usage. There are different studies with various ways of categorising perceived factors that have impacts on teachers' use of ET. The factors identified in different studies will be considered in this section. A study by Franklin (2007) identified the key factors as (a) access and availability, (b) preparation and training, (c) leadership, and (d) time. Cubukcuoglu (2013) categorised influential factors according to school factors and teacher factors. A study conducted by Agbo (2015) named two major categories of factors as non-manipulative school and teacher factors and manipulative school and teacher factors. The following section simplifies the categories into two groups of factors: teacher internal factors and teacher external factors.

2.5.1 Teacher internal factors

The role of the teacher in a lesson with ET integration is vital. They are not only experts of the subject but also designers and facilitators of learning in the classroom that is ET equipped. Teacher internal factors means factors belong to their characteristics. Teacher pedagogical beliefs, their attitudes towards ET, their creativity, and their technology knowledge certainly have impacts on their ET use. Researchers have identified these five teacher internal factors as follows:

The first factor is teachers' personal characteristics including age, gender, education, and duration of teaching experience (Agbo, 2015). Regarding teachers' age, Hsu et al.'s (2017) and Cheng's (2017) study showed that the older the teachers, the more hesitant they were to using ET in teaching. In these two studies, primary and secondary older teachers in Taiwanese schools perceived themselves having lower self-efficacy of technological knowledge (TK) (Hsu et al., 2017) and less confidence in dealing with technical issues of ET (Cheng, 2017). For instance, Agbo points out that in certain studies, it is shown that males are more like to have positive attitude than females and younger ones are more eager than older ones. Education plays a factor because those who have attended training in ET or have been educated using ET have a greater tendency to be more interested and more adept at using ET in their classes.

The second factor is the pedagogical beliefs of teachers. According to Bikowski (2018), whatever the technology was, the main goal when using it in language education was to integrate the language features into the activities embedded in the design of the integration. So, the language teaching perspective that the teachers adhere to had a lot to do with the use of the ET.

In this point of view, it appears that the teachers are enabled by the sparks of imagination and creativity that stem from the method they are predominantly using. For instance, if a group of teachers adheres to Grammar-Translation Method (GTM), their use of ET will be based on how GTM classes are undertaken, the pedagogical approach that they use. In the same way, a group adhering to Audio-Lingual Method may select software or technologies differently from those who believe in the Communicative Approach. On the other hand, those who adhere to CLT would most like use ET not just for the presentation of the lesson, but also for the learners to create learning outputs that reflect communication in real-life situations.

The third factor is teachers' positive attitude towards the use of technology. Though this seems hard to control, this is something that depends largely if not solely on the teachers. Teachers have to be interested in the use of ET in teaching. Aside from being interested, the teachers must be confident in their ability to learn how to use the technology (Omoniyi, 2015).

The fourth factor is the creativity of the teachers - Omoniyi (2015) pointed out in one study, 96% of primary school teachers were professionally trained in the use of ICT, for it is a minimum qualification to be hired in schools. It turned out, however that the said teachers only had very low perception on the affordances of computers and media technology in teaching language. On the other hand, Tierney and Humphreys (1992) hint that good teaching materials do not happen on their own, nor are they made by the computer geniuses. Instead, they hold that the teachers who know the lesson well and how it should be presented are the best persons to create the technology-aided materials for it. In other words, it takes is the facilitation of some teacher creativity.

The fifth factor is technological knowledge (TK), which is knowledge about both hardware and software programmes of technologies (Mishra & Koehler, 2006). TK involves knowledge about programme installation and remove of devices. TK includes knowledge of how to operate technologies as well as awareness on the benefit of the use of each technology. Research shows that teachers with enhanced TK are the ones who usually develop the skills, gain deeper understanding, and apply ET more in their teaching (Agbo, 2015; Cubukcuoglu, 2013). Teacher TK grows in pre-service and in-service trainings, which help their skills increase over time (Bikowski, 2018). In contrast, as shown in a study by Hew and Brush (2007), which analysed empirical studies of technology integration from 1997 to 2006, it was found that the teachers

who lacked TK, usually also lacked efficacy and competence, and as a result tended to use less technology in the classroom. Similarly, teachers' self-efficacy due to TK shortage was also identified as being a significant factor that affected Taiwanese teachers' adoption of new technologies in teaching in studies by MacCallum and Jeffrey (2014), and Dong et al. (2020).

In short, all the five teacher factors that have impact on teachers' use of ET in literature are based on both individual characteristic factors and experience factors. First, individual characteristic factors, also understood as genetic factors, include their characteristics like age, gender, and duration of teaching experience. Second, experience factors, which come from teachers' educational and working experience, include teachers' pedagogical belief, attitude, knowledge, and creativity. After considering all the internal factors of teachers, I will next review external factors of the teachers that impact on their use of ET in teaching.

2.5.2 Teacher external factors

Teacher external factors are the factors aside off teachers that have impact on their use of ET in classrooms. Research has shown that school leaders, school administrators, and students impact on the ET integration of teachers in classrooms.

First, school leaders played key roles in enhancing teachers' self-efficacy of using ET in their classes according to Xu and Zhu (2020). Leaders support teacher use of ET by providing a school vision, plans, and guidelines relating to the use of ET in teaching, building school culture, providing ET facilities (which are laptops, ET rooms, the internet), clear guidelines in the access of the ET, and carrying out teacher professional development.

Regarding the availability of school vision and plan about the contribution of ET to education, and clear guidelines, Farah's (2012) studies confirmed that such vision, plan and guidelines could improve teachers' self-efficacy in integrating ET for their teaching. The vision of the school reflected the curriculum that used ET. It clearly stated in the school how ET would be used. The school plan showed to what extent teachers were expected to use ET in their performance of their duties. The plan also stated how much budget needs to be allotted for ET. By implementing all these, it assured teachers how much support they could get and hence some of them felt more confident (Cubukcuoglu, 2013). Additionally, there should be clear rules and regulations on the use of ICT equipment from scheduling, assistance, and even accountability in

case any equipment gets damaged. A set of clear guidelines put s across a message that the school leaders are serious with the use of ET in instruction, which results in the commitment to integrating ET in teaching (Cubukcuoglu, 2013).

Regarding school culture, it was up to the school leaders to create a culture of excellence and using ET to enhance and improve the delivery of lessons. If it becomes the norm in a school, every teacher would try to learn ET. However, it must be noted that school culture does not form overnight, and nor does the expertise of teachers in the use of ET. These two can grow together as the school policies continue to move towards the institutionalisation of guidelines that forge best practices in using ET (Agbo, 2015).

The provision of ET facilities such as laptops, and the internet by the school leaders would contribute to the factors motivating the teacher use of ET in classrooms (Agbo, 2015; Cubukcuoglu, 2013). One important enabler is that when the teachers have their own laptop to use, they will not be constrained by the insufficient number of computers in the school (Agbo, 2015; Cubukcuoglu, 2013). Also, the strong and stable Internet connection available is a pivotal factor maintaining the teachers' enthusiasm to apply ET in classroom teaching (Agbo, 2015). The Internet is not only for teachers use in preparing their lessons, but also in the execution of their lesson plans in the classrooms.

Regarding the implementation of teacher professional development, before the teachers can be expected to perform well in using ET, they should have undergone training on how to use the new technologies. The training should cover both the use of the technologies as a tool in presenting lessons and as a tool in the production of leaning materials (Cubukcuoglu, 2013). Effective training can take place if there is a study on the needs of the teachers and their goals. So, an enabling factor here is the effectiveness of the research done by the school administration to design the training for teachers more effectively. Part of an effective training is a support system for teachers who are not coping well with the implementation of the ET programme. But aside from training the teachers on the skills they need to learn about ET, they also need to be convinced on the vital role that ET will play for the school to achieve its vision. The teachers should also have space for collaboration in creating the lesson they will use so that they can have ownership and accountability (Banegas, 2013).

Second, beside the macro management from the leaders, the support of the school administrator towards the use of ET has crucial role in encouraging teachers to use ET. Garrett (2009) suggested an institutional centre for ET in the schools to address the needs for ET training and provide technological support when needed.

Third, student engagement is another factor that motivates teachers ET usage. When they observed the improvement of their students' cognitive engagement, which related to students' habit and skills they more frequently used ET in their teaching (Fredricks et al., 2004). In other words, the teacher involvement in ET using is greater when student engagement is high. In addition, Dang (2013) suggested that one of the enablers for teachers to use ETs was the improvement of students' autonomous learning. The teachers in his study tended to use ET more as they perceived their Vietnamese students having habits of self-learning and giving their own decision in each class activity. The teachers were also motivated as seeing that their students having mastered skills to work individually, in pairs or in groups. In other studies with Greek and Indonesian teachers (Mahdum et al., 2019; Nikolopoulou, 2020), the teachers were also found to be eager to use ET in their language lessons as their students were perceived to be more active in such classes.

In general, all external factors above belong to schools involving all agents who are school leaders, administrators, and students. School leaders play key roles in motivating teacher use of ET in their schools because of the policy, the school culture they formulate, the facilities they provide, and the TPD activities that they develop. In addition, school administrators' willing to support teachers as they use ET also contributes to the teacher use of ET. Lastly, student engagement is also an influential element to teacher use of ET in classroom. In order to encourage teachers', use of ET in teaching, all these factors should be considered.

To sum up, this section has just reviewed perceived internal and external factors of teachers that might influence their ET integration in teaching practice. Internal factors involve individual characteristic of teachers (i.e., age, gender, duration of experience) and factors from experience of teachers (i.e., their pedagogical belief, attitude, knowledge, and creativity). The former can hardly be changed, while the latter is changeable due to their experiences are changing over time. Three external factors that have great influence on teachers' ET usage are the support of school leaders, the attitude of school administrators, and the support of students. In the three external

factors, school leaders played the most significant role, like a big umbrella as they established schools' policies, school culture, facilities, and TPD programmes. To continue, the next section is going to review studies on how ET TPD activies were organised.

2.6 Teacher professional development on the ET adoption in teaching

The term "teacher professional development" (TPD) is referred to in the literature under several different terms such as in-service education and training, continuing professional development, teacher development, and continuing teacher education (Burgess et al., 2013; Collin et al., 2012; Day, 2002; Fullan & Hargreaves, 2014; Hargreaves & Fullan, 1992). Due to the broad meaning of the term and the various ways of defining the terms related, this research uses the working definition suggested by Day and Sachs (2004):

> It is the process by which, alone and with others, […] teachers […] acquire and develop critically the knowledge, skills and emotional intelligence essential to good professional thinking, planning and practice […] through each phase of their teaching lives. (p. 34)

In view of this definition, the term "teacher professional development" (TPD) in this research is understood as comprising both formal or required activities and informal teacher activities in order to develop teachers' knowledge and skills. Following is a review of some forms of formal and informal teacher TPD activities carried out in a range of international settings.

2.6.1 Formal teacher professional development

Formal TPD programmes are those initiated by entities other than the teacher, such as the school, the government, or private institutions (Pokhrel & Behera, 2016; Rahman, 2019). Rahman's description of restrictive TPD, that is, formal in nature and mandatory for teacher, suits this. Formal TPD are then based on assumptions that the government or policy makers have or on assumptions that the teachers have regarding their needs as teachers (Pokhrel & Behera, 2016).

The followings are illustrations of how TPD organised in different nations, including Indonesia, Nepal, Saudi Arabia, the Philippines, USA, Australia, and Vietnam. By having an overview of how the formal TPD was held in this range of countries, I may see what Vietnamese education

has done for the teachers and what else they could do to improve the teachers' ET professional practice.

Indonesia

Widodo and Riandi (2013) described TPD as having two available modalities. Because of the vast size of the archipelago, where national training programmes were difficult to roll-out, there were training modules that were done face-to-face and some that were done online. The TPD programmes are designed to train teachers on the innovations in education and educational technology.

A later study by Rahman (2019) on three schools classified TPD practices in Indonesia as either restrictive or facilitative. Restrictive TPDs tend to be the ones that are imposed by the government or the school administration upon the teachers. Facilitative ones tend to be rather informal or reflective as they stem out of the reflections from daily routines and tasks of the teachers. Facilitative may also be the ones teachers initiate in collaboration with one another to improve their craft.

Nepal

The government of Nepal instituted TPD since 1971 to improve the educational system (Pokhrel & Behera, 2016). The government acknowledged the importance of professional development together with academic qualifications. So, in 1993, the Nepal Ministry of Education established National Centre for Educational Development (NCED) to provide TPD opportunities formally to all Nepalese teachers. NCED developed such documents like policy guideline, handbook of programmes for the teachers. TPD programmes involved training, and training in this sense was training by practice, where learning from training was transferred to classroom activities to improve learner achievement. The training modules followed the top-down approach when it comes to "addressing expected activities in TPD process" but might not be teachers' expectation.

Saudi Arabia

In Saudi Arabia, the formal TPD programmes of English teachers were designed by institutions (Alshaikhi, 2018). According to Alshaikhi, institutional TPDs come in four different forms – in-service training, supervision, model lessons, and teacher as trainer. Recent in-service trainings are designed to meet the needs of the teacher and be less traditional. Supervision, for them is an emerging form of TPD that Arab teachers find beneficial. The use of model lessons can come as

teachers use model patterns or as teachers observe their colleagues for best classroom practices. Senior teachers also conduct training programmes for new teachers.

Philippines

The Philippines has its Philippine Professional Standard of Teachers (PPST) implemented under DepED Order No. 42, 2017 (Roberto & Madrigal, 2018). The department order explicitly states the following as the aims of the PPST:

- set out clear expectations of teachers along well-defined career stages of professional development from beginning to distinguished practice;
- engage teachers to actively embrace a continuing effort in attaining proficiency; and
- apply a uniform measure to assess teacher performance, identify needs, and provide support for professional development.

According to the DepED Order No. 42 (2017) the teachers are observed for a minimum of four times by a mentoring superior and finally agree on the areas for improvement. There are training programmes set by the Central Office, The regional office, the division, the office and the school. All offices are mandated to conduct trainings based on studies regarding the training needs of the teachers. There are in-service trainings or INSETs before the start of classes and during semester break. Training programmes for continuing professional development (CPD) are supposed to be aligned with the PPST.

Aside from these, DepEd Order No. 35 (2016) mandates the holding of learning action cells (LAC) where mentors give technological assistance to teachers in small groups. There are no uniform topics, but the topics need to be relevant in the teaching-learning process and the increase of the achievement of the learners. LAC sessions may also be about technological assistance on new policies in classroom teaching and assessment. LAC session are reported formally from the conception of competencies to target, target outputs, target goals and the expected time frame.

USA

A comparison of TPD in the US and Japan by Collinson & Ono (2001) stated that the US had always been in need of teachers, because of the high rate of retirement and the influx of immigrants. That was why TPD was considered as a strategic way to manage the quality of each state’s valued teachers.

TPD were controlled by the State Department of Education, so every state had its own policies on teacher education and professional development. In the past, the need for TPD generally came from the fact that teachers come from the low quartiles of the Scholastic Aptitude Test, which meant their teaching abilities were low. The study found that until 2001, in the US, new teachers were assigned full load to usually to the classes that are most difficult to handle. In the TPD programme, the teachers were not encouraged to share data with other teachers, so they taught and learnt in isolation. A later study in Ohio introduced TPD via online engagements to increase the teachers' Technological pedagogical content knowledge (TPACK) (Xie, et al., 2017). The online training was organised by the state department of education to help teachers improve their teaching practice. There was a series of training where teachers monitored their own progress doing programmed activities set by an external entity. It can be seen that these TPD programmes of the states were bottom-up based and individually carried out.

Japan

Unlike in the US, according to Collinson & Ono (2001), Japanese teachers were not in isolation, but rather encouraged to collaborate with one another. New teachers were situated close to experienced ones for monitoring and support. New Japanese teachers underwent one year of teacher induction. In this one-year period, according to Collinson & Ono, the new teacher was on probation while under the mentorship of a senior teacher. Planning of lessons was also encouraged to be done in collaboration. This practice of collaboration was called lesson study (Doig and Groves, 2011). In a lesson study, the teachers collaborated in planning the lessons and took turns observing one another to see how the plan worked according to its execution by their colleagues on a particular class. The teachers who were in collaboration in the lesson study discussed their findings and noted the areas for improvement.

Australia

A study conducted by Kostina (2015) reveals that Australia's system for the professional development of teachers was based on the National Professional Standards for Teachers. The Charter on professional development for teachers described the characteristics of a high quality professional learning as relevant, collaborative, and focused on the future (Kostina, 2015). Vital to the realisation of these characteristics, the cycle of training undergoes essential elements of professional teacher development: 1) reflection and goal setting, 2) professional practice and

learning and 3) feedback and review. Externally designed TPDs were set for a period of four years with the collaboration of different agencies and with the consideration of different professional standards. The teachers were expected to reach a certain level of proficiency and competence by the end of the training period, after which, another cycle would begin.

Vietnam

In the study of Tran, Nguyen, and Ngo (2020), the TPD activities were classified as either external (provided by organisations other than the school), or school-based (those done in the school). Among the external TPD activities were degree upgrading; conferences, workshops and seminars; and visits to other schools. School-based activities include classroom observation of other teachers; weekly professional meetings; coach-mentoring strategy; speeches from famous people; and scientific studies or research paper publications or experience initiatives.
Truong (2017) suggested a system for TPD in Vietnam where there were regional and provincial leaders, the purpose of the programmes was clear and functional, programmes were flexible to the school and community needs and culture, there were different methods of instruction depending on the need; steps were coherent; and some were more informal as teachers were willing to take responsibility for their own professional development.

To summarise, formal TPD in the above countries were all under a national programme. Their national programmes may differ in their implementation but were mainly bottom-up designed which means coming from teachers' needs. This is in contrast to the situation in Vietnam where the design was more top down with the Ministry and school management determining the nature of the TPD. These programmes were detailed and comprehensively developed from planning, implementing, to assessing the TPD programme's quality. Hardly found any research about TPD in Vietnam had such comprehensive programme because most studies in Vietnam discussed the plan and process of implementation but not about how to assess the quality of the TPD programmes.

2.6.2 Informal teacher professional development

Informal teacher professional development programmes are those initiated by teacher personally for his/her own professional growth. Lee (2014) believed that the concept of informal TPD was based on Wallace's reflective model where the teacher combined new knowledge with

experience and put them into practice. In the duration of the practice, reflection also takes place, eventually leading to professional competence. For Lee, informal TPD is:

> "a continuous lifelong activity internally motivated by the teacher's self-determination and keeps reflecting his or her teaching and develops their pedagogical skills, knowledge expertise and other properties to meet their specific needs in his or her particular school contexts." (p. 94)

Informal TPD is in contrast with formal TPD. While formal TPD are initiated by outsiders such as schools or the DOET, informal TPD is imposed upon the teacher on assumptions that it will help the teacher grow professionally.

Literature shows that there are two methods that educators apply to self-improve their professional practice, offline and online informal TPD. Offline informal TPD are activities that teachers carry out by themselves at school, which are learning from colleagues, paying for formal courses, teaching portfolios and reflective journals, and publication (Alshaikhi, 2018; Lee, 2015). Firstly, learning from colleagues was the way that Saudi Arab teachers found effective as they were working at school (Alshaikhi, 2018). Whether it happened in informal or structured engagements and conversations in the workplace, the teachers could solve their problems right away. The teachers learn from their colleagues through classroom observations were more like informal teacher lessons studies where teachers agreed to visit one another's class for sharing of practices and reflection of on these based on their observations. Secondly, the Saudi teachers in Alshaikh's (2018) study also actively searched for post-graduate studies or formal training courses. Once they found the course helpful, they paid for the courses by themselves and enrolled. Thirdly, teaching portfolios and reflective journals were another two ways that the teachers in Lee's (2014) study applied informal TPD. Some teachers kept a portfolio of what they had used in their teaching and reviewed if necessary. Other teachers kept a journal and wrote how their teaching happened after each lesson. Then they used the journal as a way to reflect and to make change in their practice. Lastly, publication was one more way that teachers in Korea and Saudi Arab also used to develop their professional practice. They wrote about what they studied by themselves and published their findings in local or international journals (Le, 2014).

Regarding online informal TPD, Facebook has been recognised as a useful learning environment since it was created in 2004 (Patahuddin & Logan, 2019). Researchers have especially found Facebook's potential in teachers' informal professional development valuable due to the benefits on profession and professional associations.

A Facebook group was a platform where teachers could exchange various professional matters, at a minimal cost or even zero fee. For instance, educators in Trinidad and Tobago, a Caribbean country, responded that Facebook groups provided them with chances to share their knowledge and skills on a wide range of topics such as educational technology, pedagogies, and curriculum (Bissessar, 2014). Similarly, Kuwait primary schools' teachers, because they had little or no formal training, appreciated that they self-learnt ICT skills for free by using Facebook group to learn teaching techniques from other teachers (Alharbi, 2011). Kenya teachers joined a Facebook group named "Teacher of English" in a recent study by Bett and Makewa (2020). They found the group helped to enhance their continuing professional development by collaboration. The teachers in the group shared questions, comments, advice, or even jokes relating to their profession, and took advantage of the sharing in very much the same way as face-to-face meeting in their staffrooms.

Additionally, Facebook group is also recognised as a helpful platform for PD due to giving chances for teachers to share matters in association with their profession. Hur and Brush (2009) found out that the forums generated by Indian K-12 teachers in Facebook groups were more beneficial professional development training courses than formal ones because thanks to the forum, the teachers were able to share feelings, to tackle their isolation, to investigate ideas, and to experience a perception of fellowship. Rutherford (2010) in the study with a Facebook group of 8,000 Canadian teachers, identified that Facebook group was less harmful and prejudice-free environment for PD.

In Vietnam, studies showed that teachers also informal their PD offline and online. However, they self-learnt offline under school-based activities. This was demonstrated when self-learning or having an informal TPD is mandated by the school to teachers (Tran et. al, 2020). In a provincial school in the middle of Vietnam, the teachers were motivated to buy books for their own personal collections created to help themselves improve their teaching practice. They were vocally supported by the school principal. It can be seen that this way of informal TPD is

passive, unlike the way of other studies mentioned above, including active actions such as consulting colleagues and observing their teaching, or actively paying for formal TPD courses.

Regarding online informal TPD, similar to teachers in other countries, Vietnamese primary teachers in Nguyen et. al.'s (2022) study joined in various online Vietnamese teacher communities to learn and exchange knowledge and skills with other teachers. Thirdly, teachers conducted self-learning or informal TPD by subscribing some Facebook pages or YouTube channels. They not only sought answers for their professional questions, but also gained knowledge and skills by actively sharing their knowledge and skills with others via these channels. Overall, to serve the aim of informal TPD, Nguyen et. al. (2022) identified that Vietnamese teachers were actively participated in both required-by-schools' programmes and informal TPD programmes such as subscribing to YouTube, following famous teachers' Facebook group, as well as participating in online teacher communities.

In brief, informal teacher activities in various contexts other than Vietnam proactively initiated by teachers. They might actively gain knowledge and skills from other colleagues in person/group, or they learnt from themselves through gathering teaching portfolio or reflection regularly, or learning from writing for publication. Yet, Vietnamese teachers' informal offline PD differed in two ways. In the first place, their offline one was still passive as it was still under the influence of schools' leaders or higher levels of management. In the second place, there were no findings about their informal TPD by teachers themselves through their own writing activities such as reflecting journal, teaching portfolio or writing for publication. All the informal TPD activities of Vietnamese teachers were found as sharing their knowledge and skills online in Facebook groups, not offline with their teacher colleagues. These are two gaps of teacher informal ET PD found in the literature.

2.7 Chapter summary

To sum up, the chapter has reviewed the literature in four contributing, influential areas in relation to this research.

Firstly, this literature review clarifies my understanding of learning theories in general and language teaching pedagogies for both first language and foreign language under the influence of these theories. As I initially started from the viewpoint of a language teacher, it is necessary to

understand the language teaching pedagogy and then relate it to literature on the use of educational technology in language teaching.

Secondly, I have reviewed the literature relating to ET and language teaching, which includes the development of ET in language teaching, the types of ET used in language teaching, their affordances, and teaching methods of using ET in language classrooms. The review shows that there is a lack of studies on the methods of integrating ET in language teaching for primary students worldwide and in Vietnam context.

Thirdly, I have examined what previous studies said about factors influencing teachers' adoption of ET in teaching. There are three groups of influential factors, those related to schools, teachers and outside factors. I aim to understand how the teachers' experience in this research is similar or different to those in other contexts.

Finally, I reviewed the literature on different forms of teacher professional development activities including formal or formal programmes and informal or informal teacher programmes. This review may help to better understand the teachers' experience on the TPD programmes in the Vietnamese context.

Overall, this literature review has indicated that ETs have been applied widely and variously in the field of language teaching. Moreover, the international use of TPD activities to enhance teachers' ET competence were organised comprehensively and systematically. This literature suggests some gaps that this research aims to address. Firstly, there is no research about the teachers' adoption of ET in language teaching in Vietnam primary education context. Secondly, further research needs to be done to explore how TPD activities should be organised to best develop the language teachers' integration of ET. In this regard, one aim of this research is be to address a gap in the research literature related to the Vietnamese context and the overall international situation. In the next chapter, the approach taken to examine the research questions in this research is outlined.

CHAPTER 3
METHODOLOGY

3.1 Introduction

This study aimed to examine and better understand experiences and perspectives of Vietnamese primary language teachers about the availability and use of ETs in their teaching practice. Critical to this was gaining insights into their lived experiences, the nature of their teaching and learning environments, and how these might influence their perspectives and insights. Hence, an interpretive phenomenology methodology seemed the most appropriate way to generate and analyse the data that would best help address these intentions.

Chapter 3, the Methodology, begins with revisiting the phenomenon of interest and the research questions. Then, the chapter presents the research method and rationale for choosing a lens and theoretical frameworks for this research. Next, this chapter explains the role of the researcher. After that, it provides information about participants, research instruments to collect data, and research procedures. Later, this section describes the data analysis techniques. Then, ethical considerations are discussed. Finally, the chapter summarises the focal points of the methodology of this study.

3.2 The phenomenon of interest and research questions

This research focuses on the influence on teaching that using educational technologies (ET) to teach languages in Vietnam primary school has, as it is experienced by the primary schools' language teachers. More specifically, I was interested in exploring how the teachers' experiences when using the ETs in their programmes, including to prepare lessons and the way that they make pedagogical decisions in their daily practice. Moreover, I also sought to find out how the teachers experience the teacher professional development on ET, both the ones that they are using and other potential ways of using them as pedagogical media. As a result, the following topic with additional questions were included:

Topic: Teaching languages in primary schools using educational technologies: Experiences of primary-school language teachers in Vietnam.

The research questions are:

1. How do Vietnamese primary language teachers experience using educational technologies (ETs) to teach languages?
2. How do Vietnamese primary language teachers experience the ET teacher professional development activities?

3.3 Research lens

This research examined the two research questions in education settings, which are always complex integrated spaces where social relationships and dialogue are embedded and emerge from the varying contexts and perspectives. So, hermeneutic phenomenology was selected as a lens for the whole research because it permits I to provide rich descriptions and individual meanings of lived experiences in relation to using ET in language teaching at primary schools in Vietnam. Then, the Substitution, Augmentation, Modification, and Redefinition (SAMR) and the Technological Pedagogical Content Knowledge (TPACK) are chosen as two theoretical frameworks to better answer the research question one. Following is further discussion of hermeneutic phenomenology and the two frameworks (SAMR and TPACK), and why they are relevant for the study.

3.3.1 Hermeneutic phenomenology for this research

This research uses a qualitative phenomenological design in the form of hermeneutic phenomenology. According to Creswell and Creswell (2017), qualitative research designs come in many forms, namely case study, grounded theory, phenomenological research, ethnography research, active, and narrative research. A phenomenological research study focuses on describing the common meaning for multiple people of their lived experiences of a phenomenon (Creswell & Creswell, 2017). A clearer outline of what phenomenology is follows:

Phenomenology is the science of mindful experiences, that is an analysis of how experiences show themselves in different people. Phenomenology pursues the aim to make clear the unclear structure and meaning of human experiences, more specially, it is the search for “essences” that cannot be disclosed by normal scrutiny. “Phenomenology is a means of studying the essence or essential meanings of phenomena” (Ivan, 2019, p. 1). Phenomenology, therefore, is a qualitative research methodology that focuses on individuals’ perceptions of their experiences (Sloan &

Bowe, 2014). As a qualitative methodology, phenomenology can be used to study unique lived experiences of individuals in order to gain in-depth knowledge of specific phenomenon as it studies actual mental processes (Sloan & Bowe, 2014). This resonates with the assertion by Qutoshi (2018) who highlighted that "the outcomes of a phenomenological study broadens the mind, improves the ways of thinking to see a phenomenon, and it enables to see ahead and define researchers' posture through intentional study of lived experiences" (p. 215). This implies that the philosophy of phenomenology enables researchers to explore and understand phenomenon from the standpoint of subjective reality. As a qualitative research methodology, data collection is normally done through interviews and discussions (Creswell & Creswell, 2017; Qutoshi, 2018). It is also critical to note that in phenomenological research, data collection and interpretation occur simultaneously as the purpose of the research is the illumination of experiences by emphasizing personal knowledge and subjectivity of the participant (Qutoshi, 2018).

A case study approach was taken into consideration but it did not fully cover the requirements of focusing on lived experiences only. So, the case study approach was not selected. Similarly, the ethnography method was not chosen for this research because the culture was not what this research focused on.

Background information about hermeneutic phenomenology

HP is premised on the subjective experience of people in their individual and group capacities as the system aims to unravel the world based on how it is experienced by the subject (Fuster, 2019; Qutoshi, 2018). It is part of the phenomenological movement, which has its roots in the epoch of philosophers such as Plato, Socrates and Aristotle and was popularised by the works of Edmund Husserl (1859-1838) (Kafle, 2011; Qutoshi, 2018). Husserl propounded a fundamentally novel manner of pursuing philosophy and this was later popularised by other scholars who include Martin Heidegger (1889-1976) (Kafle, 2011; Qutoshi, 2018).

Husserl is a German philosopher who is widely regarded as one of the most successful philosophers to attempt to establish phenomenology as a method of studying lived experiences. He published the 'Logical Investigations' in 1900, which essentially gave birth to what is known as transcendental phenomenology – whose major notion was that "experience is to be transcended to discover reality" (Kafle, 2011, p. 186). A follower of Husserl - by the name of

Heidegger (1889-1976) – propounded the notion of hermeneutic phenomenology, which "puts an effort to get beneath the subjective experience and find the genuine objective nature of the things as realised by an individual" (Kafle, 2011, p. 186). The interpretive hermeneutic phenomenology by Heidegger essentially gave a broader meaning to the issue of lived experiences by making consciousness the core of phenomenological research (Creswell, 2007; Qutoshi, 2018).

Hermeneutic phenomenology is, therefore, mainly premised on the life world or human experience as it is lived (Laverty, 2003). It is focused on the explication of details and aspects within an experience which at face value look trivial and might be taken for granted in human life (Wilson & Hutchinson, 1991). The goal of the illumination process is to create appreciation and understanding of the concepts under consideration (Laverty, 2003; Wilson & Hutchinson, 1991). Hermeneutic phenomenology is also called interpretive phenomenology because it relies on interpretive phenomenology to illuminate interpretations of meaning particularly from human experience (Polit & Beck, 2012). In this research, the term "hermeneutic phenomenology" will be used throughout for consistency.

According to Dahlberg and Dahlberg (2019), a hermeneutically grounded research endeavour needs to navigate the debates, theories, philosophical and epistemological positions, as well as the momentous issue of meaning. This type of phenomenology is applied through the collection of experiences (empirical activities) as well as reflective activities (analysing the meaning of the activities) (Fuster Guillen, 2019). In this regard, there is description of personal experiences, interviews to ascertain the lived experiences of the participants. Phenomenological research in general is premised on the quest to appreciate how people perceive and derive sense of their lived experience (Annells, 1999).

The emphasis of hermeneutic phenomenology is on describing and interpreting the fundamental structure of the lived experiences with a view to understand the pedagogical merits of such experiences. The hermeneutic phenomenology is segmented into phases. The first phase comprises the clarification of preconceptions from which I starts, so that the theoretical framework for the research is guided. Thereafter, the lived experiences are collected from different sources such as individual interviews or group interviews (Fuster Guillen, 2019).

Hermeneutic phenomenology differs from the general descriptive phenomenological approach, which focuses mainly on the examination of the essence or shape of experiences based on how

they occur to human consciousness (Miller & Minton, 2017). Descriptive phenomenological method is thus based on descriptions of the experiences of data that are not influenced by any external theory, in line with Husserl's phenomenological philosophy. Descriptive phenomenology requires the concept of "epoché", which means the judgement suspensions, and "eidetic reduction", which means the contraction of experience to its essence (Tuffour, 2017). Hermeneutic phenomenology, on the other hand, does not require researcher to bracket or put aside past knowledge or preconceptions as the descriptive phenomenology approach requires. Rather, the researcher has to combine all factors in these presuppositions since the hermeneutic phenomenology philosophy is "based on the principles that reduction is impossible and thus, rejects the idea of suspending personal opinions in favour of interpretation of experiences" (Tuffour, 2017, p. 50).

It is also critical to note that hermeneutic phenomenology is characterised by more complexity as compared to descriptive phenomenology since time is a factor for the former while it is not for the later (Sloan & Bowe, 2014). In addition, hermeneutic or interpretive phenomenology entails that the participants' existence, and their relation to the environment in which they exist, are critical factors in this type of research design as there is an exploration of lived experiences. In this regard, the purpose of hermeneutic phenomenology is to understand the meaning of an experience and this is done by looking for themes and interpreting the data while giving little focus on the essences as is done when using the descriptive phenomenological approach.

In a nutshell, hermeneutic phenomenology combines theory, reflexivity and practice in a manner that synthesises descriptions of lived experiences with reflective interpretations of the experiences' meanings (Friesen et al., 2012).

The intended outcome of using hermeneutic phenomenology

The development of a "phenomenological eye" is one of the intended outcomes of using the hermeneutic phenomenology approach, which enables the researcher to see the uniqueness of the phenomenon under study in all its forms (Goble & Yin, 2014). In addition, the use of the hermeneutic phenomenology seeks to produce a "phenomenological pen" "through which [researchers] can re-evoke and illuminate the phenomenon in their text" (Goble & Yin, 2014, p. 1).

The hermeneutic phenomenology is based on openness, which can be enhanced in the research through the compilation of anecdotes in line with the assertion by Van Manen (2003) that "before asking others to give us a description of a phenomenon to be explored, we should try to do it ourselves, in order to have a more punctual perception of what we are trying to obtain" (p. 82). In addition, the approach brings about questioning pre-understanding and use of a reflective attitude (Sundler et al., 2019). What this implies is that the use of hermeneutic phenomenology for this research sought to give voice to teachers' experiences (Sloan & Bowe, 2014).

The illumination of lived experiences sought to understand the human experiences, taking into knowledge that the life-world can be understood from the elimination of prejudgments to the creation of embodied understanding and truth (Suddick et al., 2020). The research sought to explain the lived experiences of language teachers in Vietnam primary schools in the use of educational technologies in their teaching practice. By explaining experiences, the research seeks to understand the experiences of teachers through their preconceptions, with prior experiences as vital tools in data analysis and interpretation of meanings and reflection of the lived experiences (Van Manen, 1997). Themes will emerge as the outcome of the process as transcripts from the interviews are analysed to gain a deeper understanding onto the lived experiences of the teachers. Van Manen's (1997) theme types or existential were used to categorise the emerging themes and to guide data analysis as follows:

lived space – Spatiality;
lived body – Corporeality;
lived time – Temporality;
lived human relation – Relationality.

The overall outcome of illuminating experiences is a deeper understanding of the phenomenon under study at a deeper level of conscious, which in turn allows me to explore their own nature thus enabling me to reflect critically the social processes under consideration (Qutoshi, 2018).

The suitability of the chosen phenomenological method for the study

The study is qualitative in nature as it is conducted in a natural setting, is dependent on me for data collection and focuses on participants' perspectives (Creswell & Creswell, 2017). A qualitative research paradigm is also appropriate for this research since it is carried out when I intend to empower respondents to voluntarily "share their stories, hear their voices, and minimise

the power relationships that often exist between a researcher and the participants in a study" (Creswell, 2013, p. 111).

Taking into consideration that research strategy plays an important role in providing the overall direction of the research as well as to stipulate the process by which the research is conducted, I had to carefully choose the most appropriate qualitative research design for the study (Remenyi et al., 2003). As a result, the phenomenological method was chosen for this research after considering other qualitative research designs including case study, ethnography, action research, and grounded theory due to the reasons as expounded below.

A case study approach was not used as it does not fully cover the requirements of focusing on lived experiences as the method only helps in the exploration of complicated phenomenon within some contexts and via numerous data sources, which do not include lived experiences (Rashid et al., 2019). According to Yin (2002), the major disadvantage of the qualitative case study method is that it does not have a well-structured and succinctly defined procedure which the hermeneutic phenomenology possesses. Then, the ethnography research design was not selected for this research as this research did not focus on culture but investigated the lived experiences of primary school language teachers in using educational technologies in language teaching (Reeves et al., 2013). Action research was another method which was not best suited for this research because this approach focuses mainly on generating solutions to practical problems and the implementation fo solutions for identified challenges while this research focused on exploring experiences only. Lastly, the grounded theory was not applied because the approach required generating a theoretical model from the views of participants, which was not the focus of this research.

I finally chose the phenomenological approach after considering all the alternatives as explained above. Phenomenology is specifically appropriate for understanding lived experiences as it requires me to continuously reflect on their own biases and preconceptions; as well as ongoing reflective engagement with data and interpretation, which effectively enables the isolation of the phenomenon at every stage of the research process (Barrow, 2017). The selection of this research design was in consonance with the observation by most scholars on the appropriateness of phenomenology in exploring lived experiences in the education sector as follows:

> "Phenomenology is often used when exploring a larger concept or idea. In education, the phenomenon could be conceptions of good teaching particular to a pre-defined group of people, rather than a specific event, such as a teacher training workshop" (Tomaszewski et al., 2020, p. 4).

The strong emphasis on lived experiences that phenomenological research provides, therefore, makes it the most suitable methodology for this research on teachers' lived experiences with regards to educational technologies. Since the rationale was to interpret instead of merely describing phenomenon, hermeneutic phenomenology was chosen ahead of descriptive phenomenology for this research. Johnson et al. (2007) suggested that there should be the "adoption of a quantitative preliminary phase in order to identify the most relevant phenomenological experience to be explored using interpretive phenomenological methods" (p. 97). A questionnaire would give me these insights, especially as they relate to individuals' lived experiences, but also to quantify these in terms of all participants. Hence, the research design has one initial phase and three main phases. In the first phase, I first used a questionnaire to identify teachers' perceptions. It also gave me insights into the type and nature of the interview questions that might best elicit data to address the research questions.

As mentioned earlier, using hermeneutic phenomenology also recognises researchers' role in the interpretive process. Hence, a consideration of their world view and role is also necessary. The next section will present the researcher's role as carrying out this research.

3.3.2 Theoretical frameworks for research question one

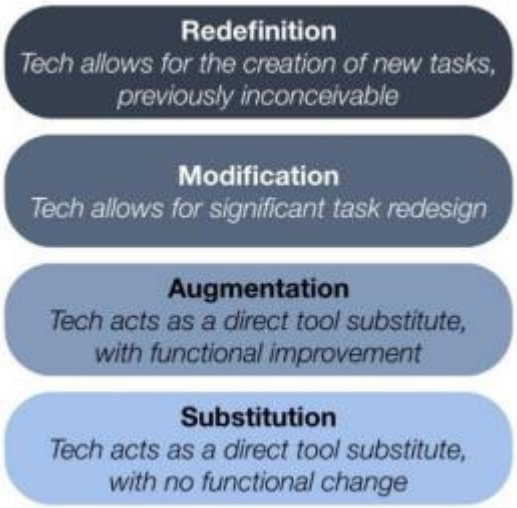
From the phenomenon and two research questions of this research, it is apparent that different experiences of the teachers around the phenomenon of using ETs in language teaching should be analysed through a lens which can be theories or theoretical frameworks. According to Creswell and Creswell (2017), there are three common methods to use a theory, which are theoretical lens approach, the theory testing approach, and the theory generating approach. Theoretical lens approach is used at the beginning of a research as an overall theoretical lens or world views to orient the data analysis. The theory testing approach is used in quantitative research for testing or verifying variable. The theory generating approach is developed inductively from emerging themes from collecting data. The current study opted for the theoretical lens approaches to examine the live-experienced of teachers as using ET in language teaching.

Two frameworks, namely the Substitution, Augmentation, Modification, and Redefinition (SAMR) and the Technological Pedagogical Content Knowledge (TPACK), were chosen as lenses to examine the teachers' level of ET use and their ET knowledge through their lived experiences of using ETs in classroom teaching. Followings are overviews of two frameworks and my justification for the choice of the two frameworks.

Substitution, augmentation, modification, and redefinition (SAMR) framework

First, SAMR framework (see Figure 5) was developed by Puentedura (2006), demonstrating levels of teachers' use of technology in their pedagogical practice. It is used as an evaluation tool of ET adoption by teachers. There are four levels in SAMR model: Substitution, Augmentation, Modification, and Redefinition. It starts with Substitution as the lowest level developing to Redefinition as the highest one.

Figure 5*: The SAMR model*



Note: (Puentedura, 2014)

Following Puentedura's SAMR model (2006), at the Substitution level, technologies' functions are used as they are, with no changes. In practice, the Substitution level refers to substituting manual teaching tools with digital technologies. For example, teachers replace whiteboards or printout materials by interactive whiteboards (i.e., using projectors), students practise writing skills by using personal laptops instead of writing on paper.

At the augmentation level, technologies' functions are utilised with direct tool substitute but with improvement. Augmentation process is similar to the Substitution one, but it provides students with some extra functions of technologies. For illustration, students practice writing in Microsoft Word. Also, they use google translate or a thesaurus to find the words' synonym or antonym, using check documents (in the word processing tool) or Grammarly (a writing assistance software) for spelling and grammatical check. In this writing process, students do not only use technology (i.e., laptop, MS Words) for writing, but they also use other functions (i.e., thesaurus, Grammarly), helping them to gain more knowledge in the learning process. If the substitution level is mainly about enhancing the learning task, this level focuses more on the transformation of learning task, requiring the involvement of higher-order thinking skills.

At the level of modification in SAMR model, there is significant task redesign. In this level, the application of technologies provides students with various types of learning tasks. A good example is that teachers assign students to write collaboratively using Google Docs, and then they give peer feedback online in the Google Docs platform. In this activity, Google Docs not only acts as a digital platform to write, but it is modified as a collaborative platform in an online environment. The students can evaluate (and give feedback on) each other's writing online. Another example is when students make a poster presentation using Canvas (a graphic design tool website) for writing activities. In the poster making process, students are challenged in their activity to write in a concise yet comprehensive manner, as well as making the poster as attractive as possible by providing relevant images to help readers easily comprehend information in the poster. In this process, the student's learning task is not only writing some ideas, but it is modified by giving other learning tasks (e.g., summarizing, researching for related images).

The highest integration level in SAMR is redefinition which is the creation of new tasks. This level emphasises and focuses more on the creativity in students' learning tasks. The students are encouraged to be able to practice their language skills in various contexts, in forms that might be challenging to implement without technologies. For instance, when using speaking skills, students can be instructed to make a video and upload it to YouTube so that they can reach worldwide viewers; or the teacher provides video conferences with native English speakers so that students can get tangible speaking practices. Another activity is using social media for

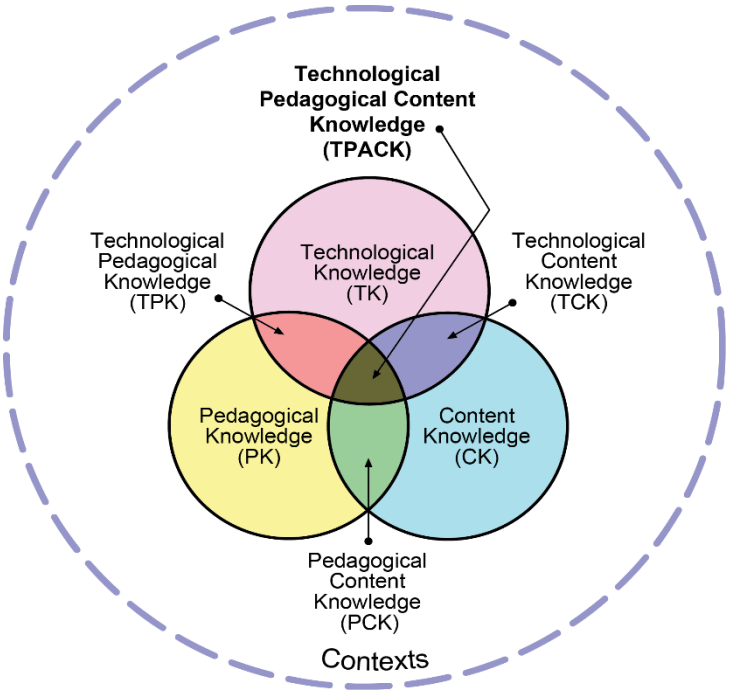
writing skills, for example, is Facebook. Students are instructed to post their views in English on Facebook and let other students give responses or comments concerning the post. This type of social media allows students to have opportunities for broader access to communication with worldwide Facebook users.

From the above description of the SAMR framework, SAMR is chosen as one lens to examine the teachers' experiences with use of ET in their language teaching in this research. It is because I can evaluate participants' level of ET use in language teaching based on their responses in the interviews as well as their lesson plans.

Technological pedagogical content knowledge (TPACK) framework

The second framework chosen for this research, TPACK, was introduced as a conceptual framework for the knowledge that teachers need to have to teach effectively with technology. This framework, developed by Mishra and Koehler (2006) and drawing on pedagogical content knowledge (PCK) of from Shulman (1987), stems from the notion that teachers who want to apply technology in teaching practice need to be competent in three primary knowledge bases, namely content, pedagogical, and technological knowledge. The relationships between content (the subjects such as language, mathematics, physics), pedagogy (the approaches of teaching and learning), and technology (both traditional like chalkboards, and advanced like computers or smartphones) are complicated and nuanced. Technologies often come with their own commands that may constrain the covered learning content. The decision of choosing technologies have a ripple effect on other pedagogical decisions (Mishra & Koehler, 2006).

Figure 6*: The TPACK model*



Note: Reproduced by permission of the publisher, © 2012 by tpack.org

The TPACK model in Figure 6 shows that there are three circles of knowledge which are Pedagogical Knowledge (PK the orange circle), Technological Knowledge (TK purple circle), Content Knowledge (CK blue circle). The three circles are interwoven, which make three intersection s between them. Details of the three pairs of knowledge is provided below.

Pedagogical Content Knowledge (PCK the area shaded green), is "the capacity of the teacher to transform the content knowledge he or she possesses into forms that are pedagogically powerful and yet adaptive to the variations in ability and backgrounds presented by the students" (Shulman, 1987, p. 15). In other words, PCK specialised professional knowledge for teachers, which makes teachers teaching process experts rather than just content knowledge teachers experts (Park & Oliver, 2008). Recent PCK concepts have been extended to teachers' knowledge of curriculum (what and when to teach); knowledge of assessment (why, what and how to assess); knowledge of students' understanding; and knowledge of instructional strategies (Thompson, 2022)

Technological Content Knowledge (TCK, the area shaded in purple in Figure 6) is knowledge of mutual relationship between technology and content (Koehler et al., 2014) and Technological Pedagogical Knowledge (TPK, the area shaded red in Figure 6) is knowledge of the affordances and constrains of technologies to specific pedagogical practices (Koehler et al., 2014).

These three knowledge intersection pairs overlap at the centre which is known as TPACK (Thompson & Mishra, 2007). The extensive scope of TPACK is referred as the foundation of effective teaching with technology. It requires that teachers have an understanding and knowledge of technologies, including:

> knowledge of pedagogical techniques of using technologies in constructive ways to deliver content; knowledge of what makes concepts difficult or easy to acquire and how technology can help solve some of the problems that students have; knowledge of students' previous knowledge and theories of epistemology; and knowledge of how technologies can be used to scaffold and to develop new perceptions or consolidate old ones" (Mishra & Koehler, 2006, p. 1029).

As a researcher, I recognise three key advantages of the TPACK framework namely: descriptive, inferential and application. Firstly, TPACK as a framework plays an essential descriptive function. The framework provides researchers with concepts and terminologies to demonstrate complex phenomena in a theoretically grounded manner with methodological rigor (Koehler et al., 2012). It has been strongly indicated in 303 TPACK research publications from 2006 to June 2010 that this framework "provided researchers with a set of conceptual tools with which to articulate precise research questions" (Koehler et al., 2012, p. 24). Secondly, frameworks such as TPACK allow researchers to make inferences about the educational technology and teacher education. It allows us to predict what technological pedagogical content knowledge may be or may not be valuable for further development. Thirdly, frameworks such as TPACK allow us to develop applications that bridge the gaps between theory and design.

In terms of this research, the TPACK framework has influenced the research questions as Mishra and Koehler (2006) argued that a conceptually based theoretical framework about the connection between technology and teaching could transform the perception and the practice of teacher education, and teachers' professional development. Moreover, the TPACK framework can be

used as a lens when I analysed participants' responses to explain the requirements of TPACK for using ET in teaching language to primary school students, taking into account of factors associated with the context of primary schools in Hanoi, the capital of Vietnam.

In short, while the SAMR framework assesses teachers' level of applying ET through both teachers' use of ET and students ET learning involvement, the TPACK framework helps to evaluate teachers' knowledge of ET use solely in teaching practice, not involving students. Thus, the two frameworks help to analyse the data of this research more comprehensively and may help to suggest better implications for practice. For better understanding of this research, it is necessary to know some more aspects of ET in language teaching, which are presented in the next section.

3.4 Researcher role

The main roles of a researcher in phenomenological research can be summed up as follows: The researcher "follows a set of tasks that require [him/her] to collect data, analyse them and report on findings" (Sloan & Bowe, 2014, p. 4). This entails that all the process from formulating the research design, selecting the appropriate research methodology, sampling, designing research instruments, actual collection of the data, analysing the data and presenting findings are within the scope of the researcher. The data are usually collected as descriptions that "appear as written phrases or statements that represent the meaning that a person – a study participant, for example – attributes to a related experience" (Smith et al., 2009 cited in Sloan & Bowe, 2014, p. 1293).

The role of me as a researcher in this research was to apply phenomenology to the chosen topic in consonance with the aims of the research – the exploration of the contextual factors perceived by the teachers as barriers and enablers to the use of ET to teach languages. I was, therefore, responsible for the decision of who would participate in the study as well as the recruitment of the participants in line with the policies and procedures within VMOET. The design and compilation of the research documents and tools (such as questionnaire) as well as the administration of these tools was also my responsibility.

As hermeneutics is an art of interpretation, my role involved analysing the recorded interviews, and review of documents (Kakkori, 2009). In this regard, I had to adopt the basic method of phenomenological investigation known as reduction, which is "the transition from an ordinary,

straightforward attitude (natural attitude) toward the world and the objects in it to reflective attitude" (Kakkori, 2009, p. 21). This role was succinctly elaborated as follows:

> "Instead of bracketing off the researcher's subjective perspective, hermeneutic phenomenology recognises that the researcher, like the research subject, cannot be rid of his/her *life world*. Instead, the researcher's past experiences and knowledge are valuable guides to the inquiry. It is the researcher's education and knowledge base that lead him/her to consider a phenomenon or experience worthy of investigation." (Neubauer et al., 2019, p. 93).

This means that the researcher as a human cannot experience a phenomenon without making reference to his/her historically lived and conscious experiences (Neubauer et al., 2019). the researcher, therefore, acknowledges their preconceptions prior to carrying out the research in consonance with the philosophical roots of the hermeneutic phenomenology and subsequently a reflection of his/her subjectivity is regarded as part of the analysis process (Moran, 2002). After acknowledging and factoring in the preconceptions, the researcher has to understand the participants' lived experiences from a vantage position (Mariano, 1990). A reflexive-relational approach is then taken where data and meanings arise from the discussion and context between the researcher and the participant who effectively takes on the role of a co-researcher as his/her interaction with me in the dialogue essentially creates a rich pool of data (Tuffour, 2017). the researcher then interprets the lived experiences by mediating between different meanings of the outlined experiences (Manen, 1990 cited in Creswell et al., 2007). This implies that the hermeneutic phenomenology approach differs from the descriptive phenomenological approach where the researcher sets aside his/her own beliefs, presuppositions, feelings and preconceptions through a process called "bracketing", which enables the researcher to visualise the experience from the perspective of the individual who has lived the experience (Mariano, 1990).

I am carrying out this research with my worldview, positioning, and perspectives from my own experiences in different related roles including family roles (a daughter, a wife, a mother of two young boys) and educational roles (a language learner, a language teacher, and a language-teacher educator).

In my childhood, I was the youngest daughter in a family of five members (my parents, my elder brother, and my elder sister). I was mainly taught by my mother, who used to be a secondary-school teacher. I lived with her for 29 years, thus, I was greatly influenced by the teaching qualities that she possessed. For example, I am always punctual and honest to others like her. I respected her as a teacher and always feel proud of having a mother who is a teacher.

After getting married at the age of 30, I left my parents and siblings, and started living with my immediate family in the new roles as a wife and, then, as a mother. My family values, which are inherited from my mother are honesty and unity. Honesty tightens the relationship among family members and strenghthens the family as a "strong cell" of a society. In Vietnam, there is a saying that "Each family is a cell of a society". Being honest to each other creates unity in a family, which helps each member of the family to be confident in the society. With this in mind, I went to New Zealand to study, accompanyied by my immediate family, because I believe that together we can go further in life. Family experience and unity influenced my decisions about the timing of data gathering back in Vietnam (Nhung, 2020)

Besides my family roles, I have three more roles in education. To start with, I am a lifelong learner and always prioritise learning. In the 12 years, from primary school to high school, I was taught languages by a teacher-centred method, and experienced big classes with fixed settings of desks and chairs. Then, as I believe that learning languages other than our birth language is very important for citizens to be able to participate in global activity whether in education, economics, finance or just in a social contexts, I decided to enter a university specialised in language studies, Hanoi University of Foreign Studies (HUFS) (and now is Hanoi University-HANU). My major was English language studies. Studying there, I experienced both the traditional teacher-centred teaching approach and the student-centred teaching approach in most language components, which has shaped my teaching style as a combination of both approaches when I started my teaching career four years after graduating.

I started my career as a language teacher at the same university HUFS I graduated from. I have been working as an English language teacher so I understand teachers' roles. I care about teachers being able to be the best teachers they can be because I believe in the value of education and in teachers and teaching. Teachers provide learners with opportunities to shape their futures. Working as a language teacher at the university I am fortunate to get the opportunity to be

trained by foreign language experts from different English speaking countries, such as America, England, and Australia with variety of ET applications. In my opinion, one way to give teachers confidence and to enrich language lessons is to use the affordances of ETs.

After language teaching, I was in an ICT teacher educator's role for three years, and I believe that most language teachers are seeking to improve their practice and yet I suspect—based on my experience and reading of the literature—that they face daily constraints, often due to matters outside of their control. I care about language teachers and I want the VMOET to address any shortcomings (e.g., in policy, funding, and ET resourcing), and to contribute to Vietnamese language education to reach a high rank globally for the benefit of Vietnamese citizens. Therefore, I undertook this research with all of my preconceptions and reflections from all of the above roles in essence with hermeneutic phenomenology.

In hermeneutic phenomenology, the researcher exercises subjective judgement while at the same time makes it clear how their preconceptions mold the knowledge that is produced through reflection and self-analysis (Willig, 2008). The researcher's preconceptions are, therefore, part of the research process as they form the basis upon which the entire research process relies. This is inspired by the writings of Ricoeur who opined that experience and meaning are interrelated to such an extent that meaning is indispensable to experience (Tuffour, 2017). Therefore, the researcher's experiences are factored into the research process in illuminating lived experiences of participants as follows:

> "The hermeneutic approach… is based on the principles that reduction is impossible and thus, rejects the idea of suspending personal opinions in favour of interpretation of experiences. Thus, research findings are suffused with philosophical, theoretical, literary and interpretative lenses resulting to an aspect of human experience grounded on unrestricted imagination and metaphorical sensibility" (Tuffour, 2017, p. 3).

The selection of the participants, sampling, data collection, structure of the interviews, and data analysis for the research should also mirror the concepts of hermeneutic phenomenology and interpretive methodologies, hence the need to have participants who fall into homogenous groups by experiencing the same phenomenon (Bachkirova et al., 2021). As the sample should be made

up of homogenous groups of individuals who are diverse in order to improve the chances of getting different stories, I might consider using purposive sampling, which is a non-probability and subjective method of selecting participants where I uses his/her own judgment (Creswell et al., 2017).

The researcher is also responsible for analysing data and the most-recommended methodology that appeals to the phenomenological manner is reflexivity that assists the researcher in unpacking the meanings unearthed from data collection (Sentence & Waite, 2021; Sloan & Bowe, 2014). Reflexivity entails thorough investigation and scrutiny of a phenomenon and this requires the researcher to be conscious of and to use reflection to determine how he/she structures their questions as well as on how the methods they use in data collection affect the data (Sloan & Bowe, 2014). For this research, I had to consider the characteristics of the participants as well as the practicalities and ramifications of using interviews, observations, questionnaires and pilot studies as discussed in the next section s.

3.5 Research design

Johnson et al. (2007) suggested that there should be "adoption of a quantitative preliminary phase in order to identify the most relevant phenomenological experience to be explored using hermeneutic phenomenological methods" (p. 97). This suggestion agrees with Fuster Guillen (2019) that because emphasis is on describing and interpreting the lived experiences with an aim to understand such experiences, the hermeneutic phenomenology is separated into two phases. The first phase comprises the clarification of preconceptions or phenomenon from which the researcher starts so that the theoretical framework for the research is guided. Thereafter, the lived experiences are collected from different sources such as interviews. Hence, the research design is the combination of both quantitative and qualitative method. The quantitative part with a questionnaire helps to find out prominent phenomenon to study. The qualitative part consists of interviews with individual teachers, groups of teachers, school technology coordinators, and schools' principals. The design is believed to be able to describe and interpret the nature of teachers' lived experience (Mayoh & Onwuegbuzie, 2015). Details of the research process is described in the subsequent sections.

3.5.1 Participant selection

Participants in this research are selected are language teachers with a wide range of age and years of experience. This is to serve the aim of this research, which is to explore experiences of primary-school language teachers in general, not limited to any category.

Regarding sampling, I used a combination of convenience and purposive sampling to get samples. First, I will provide concepts of two types of sampling; then, I will justify why the combination of the two types was used.

Convenience sampling is a non-random sampling where members of the target population that meet certain practical criteria, such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate are included for the purpose of the study (Dörnyei, 2007).

In purposive sampling I decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience (Bernard, 2017). It is typically used in qualitative research to identify and select the information-rich cases for the most proper utilisation of available resources (Patton, 2002). This involves identification and selection of individuals or groups of individuals that are proficient and well-informed with a phenomenon of interest (Creswell & Clark, 2007). In addition to knowledge and experience, it is important to have availability and willingness to participate, and the ability to communicate experiences and opinions in an articulate, expressive, and reflective manner.

For the pilot study, I used both types of sampling. Initially, convenience sampling with its characteristics helped me to quickly get two language teachers at primary schools in Hanoi. They are prior colleagues and they were teaching Vietnamese in two primary schools in Hanoi. They were both available, willing to participate in this pilot, and meet criteria for this research. Then, from the two participants, I asked them to introduce some of their colleagues until I found that I had sufficient participants and it would not be necessary to continue. The sampling size was up to 12 language teachers at primary level. Sample size was 12 participants because when I surveyed and interviewed the teachers, I found out that there was no need to continue because their answers reached saturation point, which meant when I found similar responses over and over again and no new information added. So, I ceased seeking for participants to join sampling.

Procedure of recruiting participants

Firstly, I located participants based on my own judgement of the aims of the research (Babbie, 1995; Greig & Taylor, 1999). Because this research aims at exploring and understanding language teachers' perceptions of experiences on the use of ET in their teaching and teacher professional development activities in general, I considered ranges of aspects to avoid focusing on one specific group. Ranges of aspects, which I could request their participation, include school types and participants' roles in school. Some aspects I could not select such as age, gender, years of teaching experience, and languages that they were teaching, so I selected in convenience which means the participants were available and were willing to participate.

In terms of school type, I selected all types of schools available in the Vietnamese education system. There are two types of school -public school and private school according to article 4 in Chapter 1 of The Primary School Charter by the Vietnamese Ministry of Education (Nguyễn, 2014a). Yet, I could not choose some of each school type due to the availability of the schools at that time.

In terms of participants' roles, in order to triangulate to have an insight into the language teachers' experiences, three roles were selected, which are language teachers, school principals and school technology coordinators. Teachers of any language subjects were selected as they were the main subjects of this research. They are the teachers who "had experiences relating to the phenomenon to be researched" (Kruger & Stones, 1981, p. 150). Besides, both of the roles would link the government policies with the school practices because the school principal is the school leader who has responsibility to "organise, manage activities and quality of the school" as mentioned in article 20, Chapter 1 of the Primary School Charter (Nguyễn, 2014a), and the school technology coordinator is the teacher who is directly responsible for carrying out and managing the ET application for teachers in schools (V. P. Nguyễn, 2018).

Secondly, the procedure for recruiting participants followed the normal practice in Vietnam. I followed three steps; getting introduction letter from the Ministry of Education of Training Vietnam, getting consent from principals of the school, and getting consent from individual teachers.

To start with, I got six letters of introduction from the Deputy Director General of Primary Education Department of Vietnam Ministry of Education and Training. When requesting her to introduce me to schools, I mentioned that I needed six schools in Hanoi, in which there was a mixture of public schools and private schools. Based on her decision, she introduced me to three public schools and three private schools.

Then, I contacted the school principals to get appointments with them. In the meeting with the principals, I introduced myself and my research with supporting documents, including the Letter to the principal of primary schools (Appendix 2), Information sheets to school technology coordinator and language teachers (Appendices 3 & 4), Consent forms (Appendix 4, 5, 6), Survey (Appendix 7), and Interview questions (Appendix 9, 10). I asked them for permission to carry out surveys and interviews in their schools. They all agreed and signed the consent form. The principals then arranged someone to deliver to and collect the questionnaire from the appropriate teachers in their schools. After that, they arranged another time for me to interview teachers individually or in groups. While there is an ethical element related to informed consent and right to withdraw related to the schools agreeing due to the letter from the VMOET, this is the only acceptable way to undertake this process in the Vietnamese context. I'll discuss this further in limitations. Finally, based on the teachers' consent and their available time, I conducted all the interviews with principals, school technology coordinators, and language teachers. In all the interviews, I started with a brief introduction of myself and explained how the interview would be used to give them a further opportunity to opt in or out. No one opted out at any stage.

Above is the explanation of how I recruited participants for this research. The next section will clarify the instruments which were used to collect data.

3.5.2 Research instruments

I decided to use a questionnaire, semi-structured interview, and document analysis to gather data due to the nature and intention of the research (see section 3.3.3) and to best address the two research questions:

1. How do Vietnamese primary language teachers experience using educational technologies (ETs) to teach languages?

2. How do Vietnamese primary language teachers experience the ET teacher professional development activities?

This section is going to describe the three instruments in detail.

Questionnaire

A questionnaire is a research tool which consists of a list of question to gather information from a number of respondents (McLeod, 2008). I used questionnaire for this research because I aimed at quickly getting the general viewpoints of the teachers about the phenomenon of using ET to teach languages of 127 teachers in different primary schools in Vietnam. From the responses, I may see any correlation between the teachers' experiences and other context factors in different teaching contexts. This will help to give insight into their lived experiences and to analyse and organise these to some extent. Also, a questionnaire at this stage helps me to form and clarify the types and nature of the questions that I might ask in the interviews, including the possible prompts.

For the purpose outlined above, the questionnaire used for this research had two pages with 25 questions. Table 5 shows the rationale of items in the questionnaire. The questionnaire consists of four sections: The first section has four questions about demographic information such as gender, age, school type, and language that they are teaching. The second section is to get information about their experience of using ET to teach languages. This section has five questions of which four questions are open-ended and one question is multiple choice. The third section includes 14 questions (11 Linkert scale questions and three open-ended questions) to get the teachers' perceptions on using ET to teach languages. The last section has three questions to ask for participants' further consent regarding weather they are willing to participate on individual or group interview and their available time as well as preferred contact details. This phase aimed at obtaining information on teachers' background with teaching with ETs as well as their perceptions on using educational technologies in their language teaching. This is to answer research question 1 and 2.

Table 5*: Questionnaire justification*

Question	What information?	Why?
1-4	Gender, age, school type, language subjects teaching	Factors may influence teachers' response
5-9	Number of training courses attended Time spent for lesson planning Frequency of using ET ETs used	Teachers' experience of ET training and using ET to teach
10-19	Using ET helps you save time in lesson planning.	Experience on the time that ETs were used to prepare lessons
	Using ET is a factor that improves students' language performance.	Experience on using ET and students' learning achievement
	The government encourages you to use ET in teaching.	Experience on different support as the teachers used ET
	The principal encourages you to use ET in teaching.	
	IT-in-charge teacher encourages you to use ET in teaching.	
	IT support is available on time as you need.	
	Your students feel more motivated as you use ET to teach.	Experience on how using ET motivate students
	You would rather use ET to teach.	Experience of using ET (feeling in general)
	There are enough ET in the school for you to use.	Perception on the availability of ET
	You have received enough ICT training	Perception on ICT training sufficiency
20-22		Perceptions on training frequency

		Factors as decide to use or not use ET to teach languages
23-25		Teachers' consent on participating in individual/group interview

Interview

An interview is a conversation between two people or among a person and a group of people in which an interviewer seeks for information from the other person(s)-interviewee(s) (Gillham, 2001). An interview's purpose in research is to get information and to understand problems relating to a research project's specific questions. Interviewing is a method frequently used for collecting data (Creswell & Creswell, 2017) as it can be used to obtain interviewees' experiences, views, perceptions, thoughts, and feelings (Wellington, 2015). The form and purpose of interview are applicable for this research's aim, which is to explore how primary school language teachers experience the use of ET in their teaching practice and teacher professional development activities on using ET. It allowed the participants to articulate their ideas and perspectives in their own words. Therefore, I used interviews as a data collection instrument for this research.

There are three types of interviewing, which are structured interview, unstructured interview, and semi-structured interview (Wellington, 2015). A structured interview has a set of questions for all participants. There is "no deviation is made from either the wording or the order of a set list of questions" (Wellington, 2015, p. 141). A semi-structured interview has some questions with prepared content, the interviewer has flexibility and freedom to probe for more information in accordance with the context (Creswell, 2012; Ritchie, Lewis, Nicholls, & Ormston, 2014). An unstructured interview has no list of prepared questions. In unstructured interviews, researchers make conversations to cover related topics with (Lodico, Spaulding, & Voegtle, 2010).

In this research, I chose semi-structured interview approach because of the research's aims which are to explore and understand the teachers' lived experience which is various and unexpected among individuals. At the same time, in hermeneutic phenomenology, lived-experience of participants provides rich descriptions and individual ideas (section 3.3). Therefore, semi-structured interviews with some prepared questions and freedom to prompt for further information, explanation, or clarification from the interviewees, would help me to clarify aspects

or follow up on unexpected answers. While these cannot be done by the other two interviewing approaches. Structured interview with a fix set of questions for all participants would not help to exploit the diversity of the participants' experiences. And unstructured interview with conversation form would be much more time consuming for both the teachers and I as a novice researcher with a little interview experience. So, semi-structured interview is deemed the most suitable instrument to collect data for this research.

I designed three sets of semi-structured interviews with guided questions informed by literature review and my personal experiences as stated in section 3.4. One interview is for language teachers, one is for school technology coordinators, and one is for the schools' principals. The interview for language teachers was to get in-depth information about their views relating to the use of ET in language teaching and TPD activities. The interviews with school technology coordinators and principals are to generate alternative perspectives of the situation, then to triangulate the information from three stand points.

Document analysis

Bowen (2009) defined document analysis as a systematic process of selecting, reviewing, analysing and evaluating documents. Three main kinds of documents are personal documents (personal recordings of experiences, actions and beliefs), public records (official records of an organisation) and physical evidence (artifacts of the study context) (O'Leary, 2017). In this research, I used all three types of documents. First type is teachers' lesson plans (personal document). The second type of document is public records such as the Vietnamese Government Decision on applying technology in education, or the Guideline of Vietnamese Ministry of Education and Training on applying technology for teaching. The third type of document I also used in this research is physical evidence that includes guidelines of the schools for teachers to use technologies to teach and the tasks that they include in their lessons.

There are two reasons for using document analysis in this research. First, "documents can provide background information on the context within which research participants operate…which can indicate the conditions that impinge upon the phenomena under investigation" (Bowen, 2009, pp.29-39). This means that in this research, using Vietnamese government and ministry documents would give a comprehensive picture of Vietnamese education context and requirements towards Industrial 4.0. Additionally, school guidelines and

lesson plans by teachers would provide more details of a part of the implementation at schools and in classes.

Then, the second reason is that documents can support and give contextualisation and further insights into the participants' perceptions (Bowen, 2009). In this research it was important to analyse policy documents and teachers' lesson plans to have an insight and better understanding of the teachers' perceptions, and how their beliefs were turned into their lesson plans.

Table 6*: Method, purpose and implementation for collecting data*

Data collection methods	**Research questions**	**Objectives**	**Implementation**
Questionnaire	Q1	To explore teachers' awareness and attitudes towards and implementation of educational technologies in their language teaching practice. Also, help inform the interview questions and prompts	Questionnaire was handed to teachers in hard copies in envelopes. Participants: 130 primary-school language teachers. 127 responses back.
Semi-structured interviews	Q2	To understand teachers' perceptions in different contexts To explore the possible relationship between contextual factors and teachers' beliefs.	Individual interviews were conducted Participants were 6 principals, 6 school senior managers, 10 teachers from each school context. 4 group interviews (each group had 5 teachers) All interviews were audio recorded.

Document analysis	Q2	To explore the policy discourse and their influences in constituting the perceptions of primary school language teachers on using educational technologies in teaching languages at primary schools in Vietnam. This method helps a researcher unpack meaning, improve understanding, and discover insights relevant to the research problem (Merriam, 1988).	Three types of documents were analysed. Policy documents were from the Vietnamese government, VMOET and DOETs. The documents were freely obtainable on the government's, VMOET's and DOET's websites. School curriculum were gathered from the VMOET's and schools' websites. Lesson plans were collected from participant teachers.

3.5.3 Research procedures

Piloting

A pilot study is a small-scale research project which is carried out before the main project (Ismail et al., 2017). These authors suggested pilot studies are useful for phenomenological research which uses both individual interviews and group interviews as tools to collect data. First, a pilot study can lessen risks of issues or errors as it helps recognise and solve any potential issues or matters leading to errors. Then, though being a part of the culture, a researcher still needs to investigate more about participants 'culture. And for novice researchers, the pilot study helps them to be flexible which means that they should expect that the questions of the tools can be slightly changed. For these benefits of pilot studies, Thabane et al. (2010) stressed that pilot studies should be clearly designed with achievable aims, a clear plan and criteria for any decision of changing.

In this research, the two main purposes of the pilot were identifying any problems that may have been included in the content or wording and in administering the questions in the survey and interviews to see if they would be carried the same as in the same way as in the main study. The second purpose would give me the opportunity to discard any inappropriate questions, add more

questions, rephrase questions, and record the time for answering questionnaire and interview and decide if all these changes were reasonable.

This procedure was as followed: Initially, I contacted 12 primary-school language teachers who I knew and through them some of their colleagues. They are all female teachers. For the first contact, I gave some briefing about myself and this research. Then, I asked them to sign in if they agreed to participate on the pilot study.

Table 7 gives information of participants in the pilot phase. Looking at the table from the left column to the right column, there are for types of information presented. The first column is codes of 12 participants' name from P1 to P12, not their real names. The second column is the age range which shows that they belonged to three age groups which are 20-29, 30-39, and 40-49. Column 3 illustrates their number of years using ET in their teaching. The numbers are various from two years to 17 years. Last column shows the language that they teach and the type of school that they are teaching at. There are four English teachers and the rest are Vietnamese language teachers.

Table 7*: Information about participants in pilot phase*

Participant (P)	Age range	Years of experience	Language subject/School type
P1	20-29	2 years	English/private
P2	20-29	4 years	Vietnamese/private
P3	30-39	8 years	English/private
P4	30-39	6 years	Vietnamese/public
P5	30-39	10 years	Vietnamese/public
P6	30-39	10 years	English/private
P7	40-49	5 years	Vietnamese/public
P8	40-49	5 years	Vietnamese/public
P9	40-49	2 years	Vietnamese/public
P10	40-49	5 years	English/public
P11	40-49	5 years	Vietnamese/public
P12	40-49	17 years	Vietnamese/public

I got their emails from the teachers who I knew and sent them information sheets and consent forms via the email addresses. After receiving their informed consent, I sent them the questionnaire in Google form. Their responses were automatically generated by Google form. After receiving all responses, I analysed the result and reviewed the questions.

Meanwhile, there were some issues with the questions and the followings are how I adjusted them and made some changes. One problem was that the report had to be presented in English but Google form did not automatically transfer the report from Vietnamese to English. After consulting with my supervisors, I accepted that I might have to translate the transcript manually from Vietnamese to English, but it would take time. Another problem was some questions did not really help to answer research questions such as: “How long have you been teaching language?”, “What is your highest education qualification?”, “Do you have internet access at home?” So, while I retained this demographic information from the survey, I discarded all irrelevant questions and added some questions into the interview. Moreover, there were some common ideas in section three and four, so I merged section three and four into one section named “Your perspective about using ET to teach languages”. As a result, it reduced from five sections to four sections. Then, to get better answers and avoid leading questions, some question types were changed from multiple-choice to open-ended. Moreover, the order of some questions was changed to better categorise answers. Also, some translations were reworded for getting better answer. Lastly, some questions were added for more information,

After getting questionnaire responses, I made appointments with the teachers to interview individually and in groups. In this way I piloted the whole research design with all the phases including the group interview.

All the interviews of this pilot stage were carried out through Facebook Messenger, an instant messaging service owned by Facebook, with function for one-on-one and group video calls (Moreau, 2019). The reason for using Facebook Messenger is that, at the time I collected data, this was the most popular messaging app in Vietnam (Pham, 2019). To manage data safety and privacy, I did ensure the transparency from the beginning to all participants and did point out that they had opportunities to opt out.

During the interviews, I took note on all the parts I need to change such as wording, questions need to be discarded or added, and time. As a result, I made the following changes for interview

parts. I discarded some questions because the questions do not really help to answer research questions as I thought. Then, I shortened the time for interviewing because of tight schedule of schools and teachers. The individual interviews would not be expected to take more than 30 minutes each.

Finally, after piloting I addressed some issues relating to questionnaire delivering method, questions' content and wording. I also merged parts of questionnaire and changed the order of some questions in both questionnaire and interview questions.

Questionnaire

The original English questionnaire was translated into Vietnamese by me and was checked by Dr. Thu Ngo, my colleague, a lecturer in language and literacy at Australian Catholic University, Sydney, Australia.

Then, the Vietnamese questionnaire were printed and handed out to the teachers. I initially planned to send the questionnaire via Google form, yet, in the talks with the principals, I realised that for some schools, Google Drive was not popular among the teachers. Thus, it might take time and might not get as many responses as I expected, so I decided to hand out hard copies of the questionnaire in most of the schools. For the rest of the schools, I used Google form as the teachers were familiar with it.

After that, each teacher received a hard copy of the questionnaire in an envelope. After completing the questionnaire, the teachers left the hard copies in the sealed anonymous envelopes to an administrative officer of the school. Then, I collected them from the administrators.

Interview

I conducted three sets of semi-structured interview for teachers (individual and group), leaders of schools and school technology coordinators, the teachers in charge of using IT for teaching. For teacher interview, there are 12 questions. For the interview with schools' leaders, there are seven questions. For the interview with school technology coordinators, there are eight questions.

This phase aims at gaining a deeper understanding of what teachers perceive as barriers and enablers of the educational technologies application in teaching to answer question 1 and 2. Yin (2012) suggested that semi-structured interviews would help to gain important insights into a

situation from respondents. Thus, I carried out semi-structured interview with 20 individual teachers and four groups of teachers. The interviews with the six principals, and the six school technology coordinators were to help address research question 2: that is, they helped to identify the contextual factors might motivate or demotivate teachers to use ET to teach languages.

In each school, I carried out all the interviews on the same day. The order of the interviews was flexible depending on the arrangement of the principals. All the interviews took place in a separate room. The duration of individual interviews with teachers, principals and IT teachers were 30 minutes. The group interviews last from 30 minutes. All the interviews were recorded by Samsung Voice Recorder app of researcher's smartphone Samsung A7.

3.5.4 Data analysis

The heading 'data analysis' in this research should be understood as the systematic organising, analysing and identifying of patterns in the data to assist my aim to "investigation of the constituents of a phenomenon while keeping the context of the whole" (Hycner, 1985, p. 300).

Quantitative data

In this research, the quantitative data were derived from 11 Likert scale items of 127 questionnaire responses. They were analysed using the software named Statistical Package for the Social Sciences (SPSS). The result from the data would provide the portion of teachers who have their own experiences and thinking about using educational technologies in teaching languages. The data would also show demographic statistics of the teachers like their age, gender, year of teaching experiences, and their school types. It is important to have these details, as they would provide a clearer context or clarity for the description of the teachers' experiences. Moreover, they would inform my reflection process..

Qualitative data

All qualitative data from interviews with the language teachers, principals, and school technology coordinators were recorded by The researcher's personal smart phone SAMSUNG A7. Then, I transcribed all the recordings in Vietnamese. Data analysis software NVivo was used to process the interview transcripts. I transcribed in Vietnamese first because I wanted to keep the original text, and avoid missing any nuances in the responses or important information. After

that, the data went through six phases of thematic analysis adapted from Braun and Clarke (2006).

Table 8 illustrates six steps of thematic analysis. At first, I read again from the beginning to end all the transcripts in Vietnamese. While reading, I took note any initial ideas coming from the transcript. In the second step, I coded all significant aspects of the data. Having finished the coding, I translated all the codes into English. In the third step, I put the aspects into themes. The fourth step was reviewing the themes, which included checking if the themes worked in relation to the coded extract and the entire data set. I then generated a mind map of the analysis to have an overview of the ideas. Moving to step five, I continued refining the specifics of each theme, named them, defined each theme and got the overall story of the analysis. In the last step, I selected vivid, compelling examples, analysis of selected extracts. Then, I aligned them to the research question and literature, producing a report of the analysis.

Table 8*: Phases of thematic analysis*

Phase	Name	Description
1	Familiarise with data	Read the data, note down initial idea
2	Generate initial code	Code interesting features of the data
3	Search for themes	Collate code into potential themes, gather all data relevant to each potential theme
4	Review themes	Check if the themes work, in relation to the coded extract and the entire data set, generate a thematic 'map' of the analysis
5	Define and name theme	Ongoing analysis to refine the specifics of each theme, generate clear definitions and names for each theme, and get the overall story the analysis tells,
6	Produce the report	Selection of vivid, compelling extract examples, analysis of selected extracts, relating back to the research question and literature, producing a report of the analysis

Note: Adapted from Braun and Clarke (2006)

The documents outlined in Table 1 and school-policy documents as well as teachers' lesson plans were also analysed using the same approach.

Document analysis

Government documents about using ICT in teaching at primary schools were used to understand the general directions and the Vietnamese education context. Also, schools' documents such as official websites, directions from the principals, lesson plans were analysed to identify if these contextual factors have any relations with teachers' perceptions.

3.6 Ethical considerations

This research's ethical application was approved by the Human Research Ethics Committee, The University of Waikato in May 2018. All ethical issues relating to this research have been contemplated following Ethical Conduct in Human Research and Related Activities Regulations (https://calendar.waikato.ac.nz/assessment/ethicalConduct.html) including: (1) access to participants; (2) informed consent of participants; (3) archiving of data, privacy, storage and use of information; and (4) protection from potential harm to participant**s**. Further details of these issues are discussed in relation to this research.

Access to participants: As researching in a hierarchical society, I had to navigate the research process as normal practice in Vietnam. At first, I got introduction letters from the Vice Director General of Primary Education Department of Vietnam Ministry of Education and Training. Then, I phoned or met them directly to get appointment. After that, face-to-face meetings with the Principals were organised to obtain their written consent form for conducting data collection in their schools including surveying language teachers and interviewing the principals, IT senior teachers and language teachers. After that, the school administrator sent letter of information with the questionnaire paper to prospective teachers. The teachers who agreed to join the interviews were scheduled to meet me on the same day. All interview teachers had opportunities to ask questions about the study and could withdraw at any stage of the interview.

Informed consent of participants: I developed a Letter to Principal of information and a Consent form based on recommended items by Bailey (1996, p.11). Specifically, the letter of information was composed of researcher's information, the research topic and purpose, the procedures of the study, the procedures to protect confidentiality and anonymity.

Together with the information sheet was the consent form to make sure that participants were fully informed and understood what the research involved and their participants are voluntary. They were advised that they could have the right to not answer particular questions and they could withdraw from the study at any stage. For these purposes, the following parts were included in the Consent Form: research topic, the voluntary nature of research participation, participants' right to decline to participate in the research or any portion of the research activities, participant's signature and date of agreement.

All participants were given the Letter of information and Consent form, and their consent was obtained prior to data collection.

Archiving of data, privacy, storage and use of information: All personal information of participants and non-identifying (e.g., data sets and transcripts) and identifying data (such as consent form, audio file) collected are stored in secured place/devices with password protection and will be kept for, at least, five years. Only my supervisors and I can get access to the information.

Protection from potential harm to participants: To minimise the risk of potential harm, prior to all the interviews, I set aside time to discuss any concerns that participants might have about the research. I have no association with the participants, it was important to communicate explicitly to the participants my personal motivation for conducting the research. Also, I tried to protect the participants from potential negative effects to the participants' career when their perceptions were revealed. When I reported data, pseudonyms were used throughout including participants' names and school names. Therefore, the participants will hardly be identified by any references made in this study. Additionally, I tried to report the findings constructively to minimise possible harm to schools and participants' professional reputation but still maintained the integrity of the study.

3.7 Chapter summary

The chapter has provided detailed description and explanation for the research design together with careful considerations of ethical issues. The phenomenon and the two research questions are affirmed. Then, the chapter carefully explains the lens for the whole research and two theoretical frameworks for the first research question. After that, my role as a researcher is clearly presented

with my own positioning from my worldview. Next, the design of this research is elaborated in details including the selection of participants, the instruments to collect data, the phases of conducting the research, and the three ways of data analysis. Finally, four ethical issues are carefully taken into consideration. The next chapter will report the quantitative findings as a way to set the scene for this research.

CHAPTER 4
SETTING THE SCENE: SURVEY FINDINGS

4.1 Introduction

The previous chapters provided background information about education in Vietnam and in the global context, as well as the methodology of this research. Of the three following chapters, Chapter 4 describes the findings from the quantitative data which was derived from a survey; and Chapter 5 and Chapter 6 describe findings from the qualitative data, from the interviews and the documents from the government and schools.

This Chapter-Chapter 4-analyses the results of the survey with 127 teachers in six primary schools of Hanoi, the capital of Vietnam. The survey was used as an initial source of data in this research because of three key reasons, which are: understanding the participants' characteristics and contexts so as to gain insights into and better understanding of their lived experiences; identifying the most relevant phenomenological experiences to be further explored through the interviews; and informing the choice of the participants to be interviewed.

In order to understand the participants' characteristics and contexts, this research used a combination of purposive, and criterion sampling as suggested by Peoples (2020). The demographic information from the survey illustrated characteristics of the participants including their gender, age groups, school types, and languages of teaching. This information is relevant because recent research showed that teachers of different gender had varied experiences of using ET in the classroom. Gebhardt et al. (2019), for example, explored that female and male teachers' level of confidence in applying education technology was diverse. Responses to my survey indicated that they had higher ICT self-efficacy than those reported by female teachers. Then, teachers of different age groups had various years of experience in the use of ET in language teaching, which included professional development experience and pedagogical decision making in classrooms. After that, schools (public or non-public) with different policies on technology investment and professional training affected the teachers' use of ET in teaching and their ET training experiences. Next, language teachers of native language (Vietnamese) and foreign languages (English or French) received training and had knowledge of the language subject, which impacted the teachers' views on using ET in their teaching.

The survey also helped to detect pertinent phenomena to be further explored, which better focused on the elements central to the participants' lived experience. Johnson et al. (2007) suggested that: "There should be adoption of a quantitative preliminary phase in order to identify the most relevant phenomenological experience to be explored using hermeneutic phenomenological methods" (p.79). That is why, in the survey, there were questions about the teachers' experiences on using ET and ET professional development, which were then analysed and the prominent features identified. Based on the prominent features, I found the need to include more prompts in the interviews, to gain better insights and understanding of the teachers' perspectives and interpretations of their experiences on having ET integrated in their teaching. These prompts included questions relating to the prominent phenomena identified.

In addition, as a part of the explanatory sequential mixed method (Creswell & Creswell, 2017), the survey's results informed the type of participants to be chosen for the interview phase. In order to meet the purposive and criterion sampling for inviting potential interview participants, the survey was used to gather the demographic information that would allow for that selection of potential participants. The criteria used to select participants included age, school types, and languages of teaching. The interview data would help to answer the two research questions:

1. How do Vietnamese primary language teachers experience using educational technologies (ETs) to teach languages?
2. How do Vietnamese primary language teachers experience the ET teacher professional development activities?

4.2 Demographic information about the language teachers

The types and range of participants that were deemed appropriate for the main hermeneutic phenomenological aspect of the research included the language teachers' gender, school types, their age groups, years of experience, and languages that they were teaching. I did request the school principals' agreement in order to gain access to the teachers with the above criteria, but due to the availability on the day of the teachers, the number of teachers in each criterion varied.

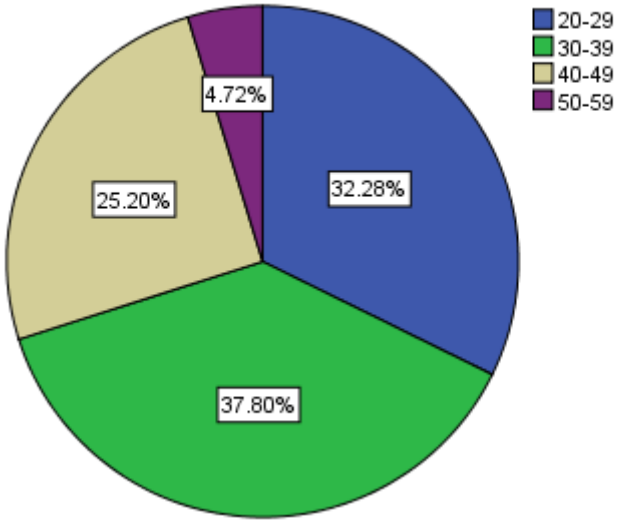
In terms of gender, all the language teachers that responded to this survey were female. This ratio reflects the high numbers of female teachers in Hanoi primary schools in general, which was 91.35% in 2019 (Tổng cục thống kê Việt Nam, 2016). So, given this very high proportion of female teachers in the population, it is reasonable to assume that having only female participants

respond to the survey should not significantly affect the overall insights gained into language teachers' perspectives. Hence, while it is important to acknowledge this limitation, gender should not be a significant factor that influenced the ET using experiences of the teachers in this research.

Regarding school types, the teachers working in two school types public and non-public schools. In the 127 surveyed teachers, there were 84 teachers from public schools, and 43 were from non-public schools. These numbers were due to the number of volunteer in these schools at the time of the survey.

Age groups of the participants were spread over four groups 20-29, 30-39, 40-49, and 50-59. Most of the teachers in this survey were young. The number of teachers who were in 30-39 age group was the highest with 37.80%. The number of teachers who were in 20-29 age group was a little lower 32.28%. The number of teachers who were 40-49 years old ranked the third in four age groups at 25.20%. While there was only 4.72% of the teachers who were in the 50-59 age group, a nearly retirement age, according to the Vietnam Labor Code, article 169, which indicated that the retirement age was 60 for male, and 55 for female (Nguyễn, 2019). Figure 7 below shows the number of participants belonging to the four age groups.

Figure 7*: Age group of the teachers surveyed*



Different age groups may be an important influencing factor that causes a variation in experiences of using ET in language teaching due to the introduction of the "Master plan for information technology in education from the period of 2001-2005" in 2000 (Nguyễn, 2000). The difference could be the frequency of using traditional and ET-based options of teaching methods. Younger teachers (20-29 and 30-39), who started their teaching career when the Master plan was implemented in 2005 and guidelines for the application of ET in teaching were issued annually by the VMOET, would be more familiar with ET-based teaching methods. The older teachers (40-49 and 50-59), who began their teaching career before the implementation of ET practices, had the experience of using both traditional and ET-based practices.

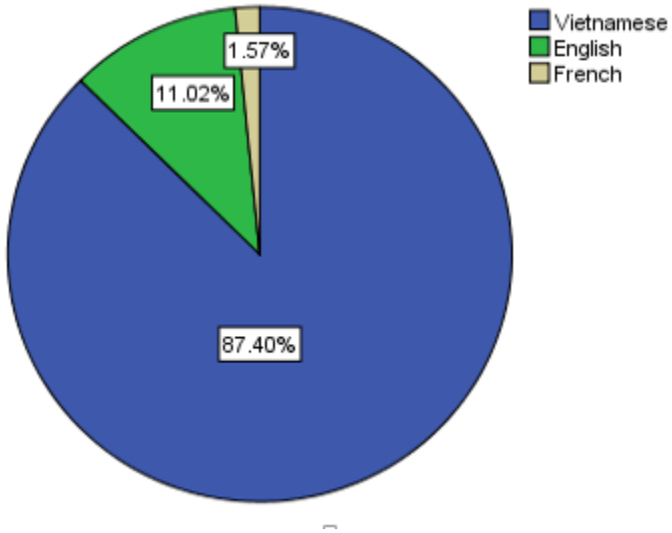
Another factor that may also influence these language teachers' experiences of the use of ET in teaching is related to the number of years that the teachers have used ET in their teaching. Table 9 below shows the length of time using ET in classroom teaching of the teachers. The number of teachers who were new to ET or had less than five years of experience made up the highest proportion (56 out of 127 teachers), in which fifty participants having 1-5 years-experience of teaching using ET were aged 20-39; four older teachers in their age range of 40-49; and two teachers in the age range 50-59. The second highest number of teachers (52) were those who had 6-10 years of experience. There were five younger teachers who also had 6-10 years of experience, while there were three nearly retired teachers in this group as well. After that, the third group that had 11-15 years of experience included only 15 teachers of whom there was one older teacher aged between 50-59. Finally, the group with 16-20 years of experience was the smallest with four teachers, three of whom were in 40-49-year-old group, which meant these four teachers had used ET from the time they started teaching. This information suggested that in the interview, I would prompt the teacher interviewees to find out if the age and years of experiences were factors that influenced the teachers' experience of using ET to teach languages and in what ways.

Table 9*: Years of experience in using ET to teach vs. age groups of the participants*

		Years of experience in using ET to teach				Total
		1-5 years	6-10 years	11-15 years	16-20 years	
Age groups of participants	20-29	36	5	0	0	41
	30-39	14	24	9	1	48
	40-49	4	20	5	3	32
	50-59	2	3	1	0	6
Total		56	52	15	4	127

One more feature of the participants in this research was the number of different languages these teachers taught, shown in Figure 8 below.

Figure 8*: Languages taught by the teachers*



It was clear that the group of Vietnamese language teachers were dominant with a ratio of 87.40%. English language teachers made up just one eighth of the Vietnamese language teachers who completed the survey, which accounted for 11.02%. The rest, even much less, 1.57%, were French language teachers.

This dominance of Vietnamese language teachers in comparison with English and French language teachers is because Vietnamese is the L1 in Vietnam primary schools, while English and French were foreign languages in the primary school curriculum. As the L1 in Vietnam primary school, the Vietnamese language subject takes the majority of time in the school curriculum. Whereas, English and French language subjects, of which English is typically more popular than French, usually have only two lessons of 40' per week (M. H. Nguyễn, 2005). Therefore, it is no surprise that the number of foreign language teachers in each school was much smaller than the number of Vietnamese language teachers.

This dominance in the number of Vietnamese language teachers compared to foreign language teachers was assumed to affect the teachers' lived experience and hence their comments or responses. That is because the teachers of foreign languages like English and French received additional training courses because the Ministry had a project for the renovation of foreign language teaching and learning in Vietnam, namely Foreign Language Project 2020, and Foreign Language Project 2017-2025. In the project, the IT training for foreign language teachers at primary schools were prioritised (Nguyen, 2008). So, as selecting participants for interview, it was necessary to have teachers of both foreign languages and Vietnamese language.

In short, the language teachers in this research had four demographic features. First, they were all female teachers. Second, about two thirds of them were teaching in public schools, the others were in non-public schools. Third, most of the teachers were young, from 20-39 years old, the minority were older, from 40-55 years old. Finally, almost all of the teachers were teaching Vietnamese language, only a small number of them were English and French language teachers. As the ontology of the interpretive phenomenology proposes reality is constructed based on context and individual reference frames as each person lives in the world (Mayoh & Onwuegbuzie, 2015). Thus, as contextual and individual factors, these will influence the teachers interviewed in this research and help make meaning of their experiences of using ET to teach languages in primary schools in Vietnam. The next section continues exploring the teachers' experiences on using ET in their teaching practice using the survey evidence beyond the demographic information.

4.3 Language teachers' experiences of using ET

In order to explore the teachers' experiences in general, the survey asked the teachers to report the types of ET they experienced using, then their overall attitudes towards the use of ET in language teaching, their time spent on preparing language lessons with ET aid, their frequency of using ET in language teaching lessons, and their experience of ET professional development activities. The section presents the analysis of survey responses to describe these collective experiences in some detail.

4.3.1 ETs used in language teaching

When the participants were asked what type of ET they usually used to teach languages in classrooms, they reported that they used two Microsoft Office apps and eight kinds of ET equipment. The two Microsoft Office apps were Word and PowerPoint. All teachers in this research responded that they were using Word and PowerPoint every day and in every lesson. Word was used to prepare their lesson plans. PowerPoint was used to demonstrate lesson content.

> Aa: We started using Word to prepare lesson plans long time ago, since 2005. Some years later, when classrooms were installed with overhead projectors, we were required to present our lessons in PowerPoint. It was a requirement from the Ministry of Education and Training.

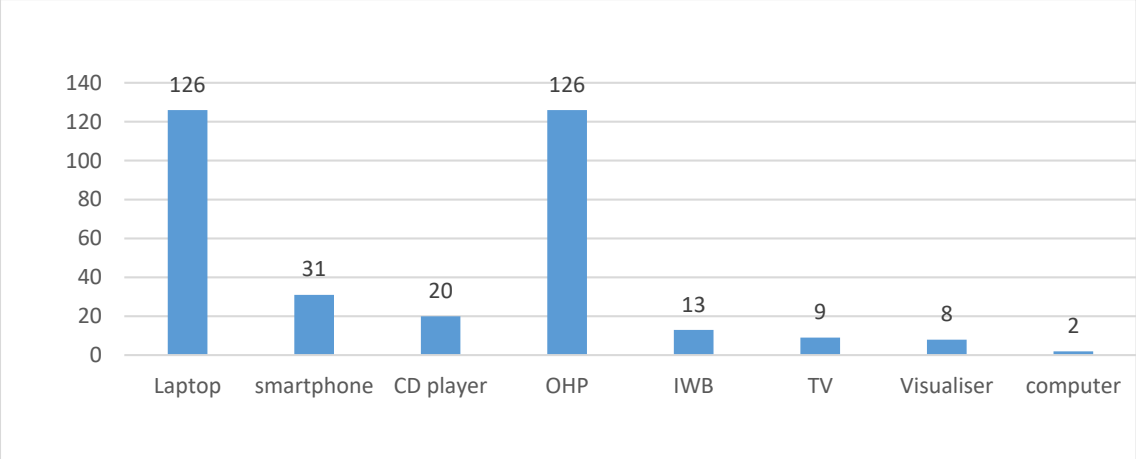
> Ba: We were required by the Ministry of Education and Training to use Word instead of pen and paper to prepare lesson plans about 10 years ago. Lessons must be presented in PowerPoint some years ago.

Word was used by the teachers before PowerPoint which came later when the classes were equipped with overhead projectors (OHPs). These were requirements from the Vietnam Ministry of Education and Training since 2005.

Besides Microsoft Office apps, the teachers used eight tools which are categorised here into two groups—personal tools and school-owned tools. Personal tools were laptops and smartphones, and school-owned tools were CD players, overhead projectors (OHPs), interactive whiteboards (IWBs), televisions (TVs), visualisers, and computers. Figure 9 shows the popular types of ETs

and the number of teachers who used this type. One teacher might use one or more ETs to teach languages.

Figure 9*: Common types of ET used in language classrooms*



From the chart in Figure 9, it can be seen that almost all of the teachers, 126 out of 127, used the laptops (personal devices) and OHPs (school-owned device) together. The second most popular types of ETs used in classrooms were personal smartphones (31 users). Other school-owned ETs such as CD players and IWBs, TVs, visualisers, and computers were used by fewer teachers. In brief, what stands out in the chart was the number of teachers who used laptops, OHP and smartphones. It would be important if possible to include some teachers who use their personal smartphones in the sample of participants for the interviews and to include questions and prompts regarding how and why they use the devices they do during interviews.

In short, there were both personal and school-owned ETs that the language teachers in the survey used laptops, OHPs, and smartphones were the most widely used kind of ET. While other tools like visualisers, IWBs, CD players, and TV, which were all available at all the schools seemed to be less used. This phenomenon was further explored during interviews in terms of what influential factors on the teachers' ET usage, what language components that ETs were helpful and how the teachers delivered their lesson with the aid of ETs. The findings will be reported in Chapter 5.

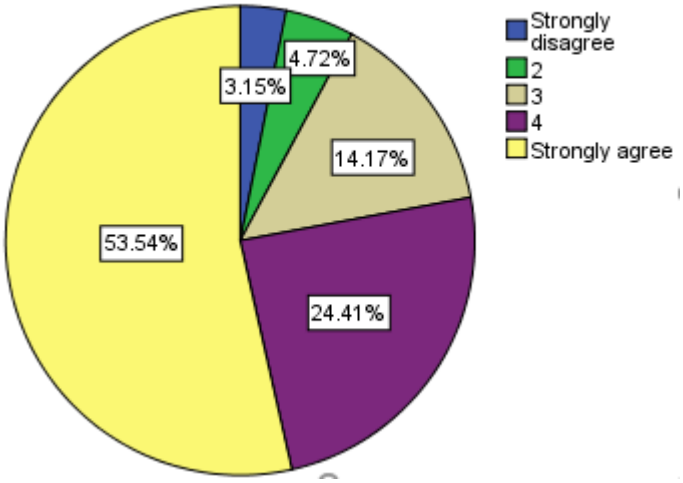
The next section of the survey analysis focused on the indication of the teacher professional development (TPD) activities that they received and these teachers' comments on this TPD. On

the basis of the survey information I included some prompts in the interviews related to what kind of TPD activities that the language teachers received formally and informally and how effective the TPD activities were.

4.3.2 General attitude on using ET of language teachers

Figure 10 shows general preference of the teachers for using ET in teaching compared to not using ET.

Figure 10*: Teachers preferred to use ETs*



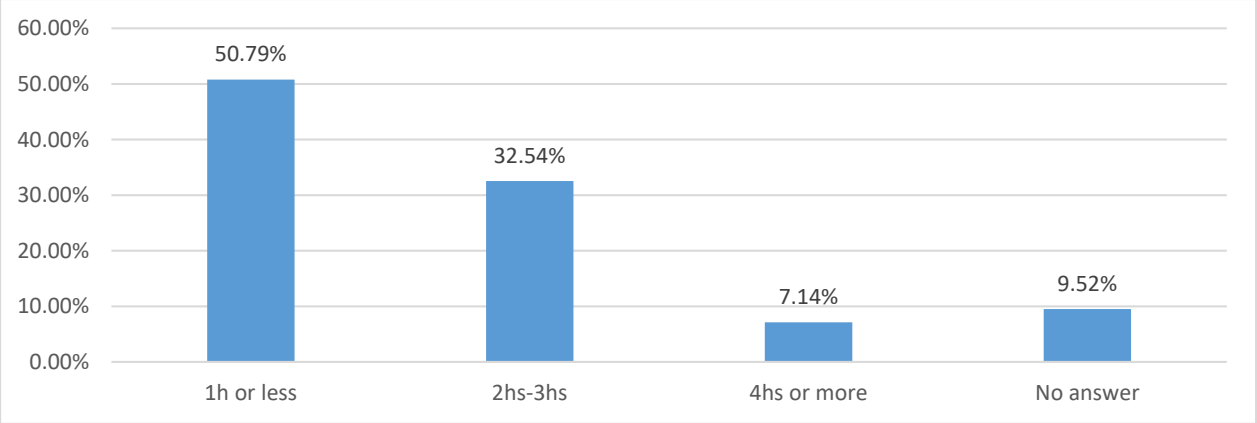
Overall, the majority of teachers expressed a preference to use ET in teaching languages rather than traditional tools, such as printed materials or chalk and boards. The yellow and purple parts dominate the pie chart, which shows more than three-quarters of the teachers preferred using ET and of which more than half (53.54%) strongly preferred. Nearly one fourth of the teachers surveyed had equal preference for both ET and traditional tools (the grey segment). About 8% of the teachers did not like using ET in language teaching (blue and green segment). They still preferred using tradition tools like chalk and boards to teach. This finding provides a positive picture of the teachers' attitude towards using ET in language teaching. As a phenomenon, this was further explored in the interviews and will be described in the next chapter.

4.3.3 Time spent on planning e-lessons with ET support

There are two terms to clarify in this section: e-lesson and e-lesson planning with ET support. Firstly, the term "e-lesson" in this research was understood as the teaching lesson using ET such as a lesson presented using PowerPoint. Secondly, the term "planning e-lessons with ET support" means a lesson is planned using ET (e.g., Microsoft Word and/or internet to locate resources).

The teachers in this research were asked to write the amount of time they spent on preparing e-lessons when they used ETs. Their responses were shown in Figure 11.

Figure 11: *Teacher time using educational technology to prepare an e-lesson*



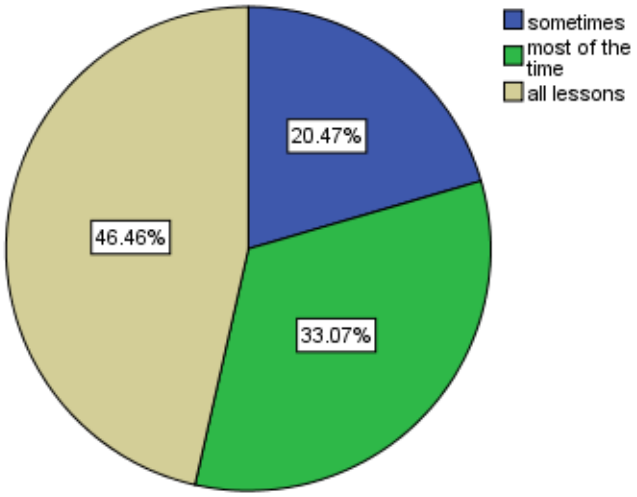
The graph in Figure 11 shows the ranges of time that 127 respondents indicated that they spent to prepare one e-lesson with the aid of ETs. More than half (50.79%) of the teachers reported that they spent one hour or less to prepare an e-lesson using ETs. Approximately one third (32.54%) of the teachers spent two to three hours. Other teachers (7.14%) spent more than four hours. One teacher reported that she used 10 hours, another teacher spent 15 hours, and even one teacher said she spent several days to prepare one e-lesson using educational technology. While half of the teachers in this survey spent less than one hour to prepare e-lesson, quite a large number of participants (nearly 40%) spent more time preparing the e-lesson (up to three times more) than the time to teach a lesson. Lessons are typically 35 minutes long at these schools (Phung, 2018). This phenomenon suggests the need for more in depth understanding of the teachers' workload aspects as well as the context of professional development and supports that the teacher received, to be sought through interviews.

The next section now moves to findings on the frequency of using ET in classrooms.

4.3.4 Frequency of using ETs to teach languages in classrooms

Figure 12 shows the teachers' responses to the survey question on how often they used ET to teach each week.

Figure 12: *Frequency of using ETs to teach each week*



To understand the data, it is necessary to understand the terms. "Sometimes" means less than 50% of the lesson time in a week. "Most of the time" means more than 50% of the lesson time in a week. "All lessons" means they used ET in every language lesson that they were teaching.

From the pie chart of Figure 12, it can be seen that nearly half of the teachers (46.46%) reported that they used ETs all the time they teach language subjects. About one third (29.13%) of them used ET most of the time they taught. Approximately one fifth of them (20.47%) used ET several times per week. Overall, more than three quarter of the language teachers used ET to teach frequently, more than half of their teaching time. Further insights on teachers' lived experience of making decisions on how and when to use ET to support their teaching were sought during the interviews.

In short, section 4.3 has identified the language teachers' experiences on the following aspects: the ETs used, their preference to ET using, time spent on lesson planning, and frequency of using ET in language teaching. In the first place, the teachers experienced using eight types of personal

and school-owned ETs to teach languages, of which the laptop (a personal tool) and OHP (school-owned tool) were the most frequently employed tools, while other school-owned tools such as visualisers, IWBs, CD players, and TV were less used. Besides recognising the ETs frequently used in teaching, the teachers acknowledged the encouragement on ET usage by language teachers of all levels of management from the ministry level, schools' board of management. However, the ICT training provided by the ministry and by the schools was not frequent enough for the language teachers in this research. All of the teachers expected to attend one or two ET training courses every year. In addition, the support for resolving technical issues from the IT staff was not responsive enough. The survey also showed that half of the teachers spent a lot of time to prepare one e-lesson, while the other half of the teachers spent less than an hour. In general, despite the challenges they might face when using ET to teach or prepare e-lessons, all the teachers in this research applied ET in teaching frequently, and the majority of them preferred to use of ET in language teaching.

From the above one aspect of language-teachers' ET usage phenomena was identified for further exploration in Chapter 5:

> The language teachers' pedagogical decision making in using ETs: why the teachers decided to use/not use the ETs, for what language skills/components of language learning did the teachers found ETs helpful, and how often and how they used the tools in classroom

The next section focuses on indications of encouragement, support and these teachers' comments on teacher ET training or professional development.

4.4 Language teachers' experiences of encouragement, support, and training

These teachers received encouragement verbally and practically from different levels of management and their colleagues in using ET to assist teaching practices. Below is the description of three aspects of this support influencing the teachers' experiences: the encouragement from management (government, principals, and school technology coordinators), the technical support from IT staff, and the frequency of ICT training.

4.4.1 Encouragement to use ET in language teaching from the management

In order to gain more insight into their experience, the survey required the teachers to rank their perception of the degree of encouragement they received for using ET in their teaching from

three agents: The Vietnamese Government, the school principals, and the ICT-coordinators. The encouragement was generally understood by the teachers as verbal and in a willingness to provide support as needed.

Figure 13*: Encouragement to use ET in teaching to the language teachers by group*

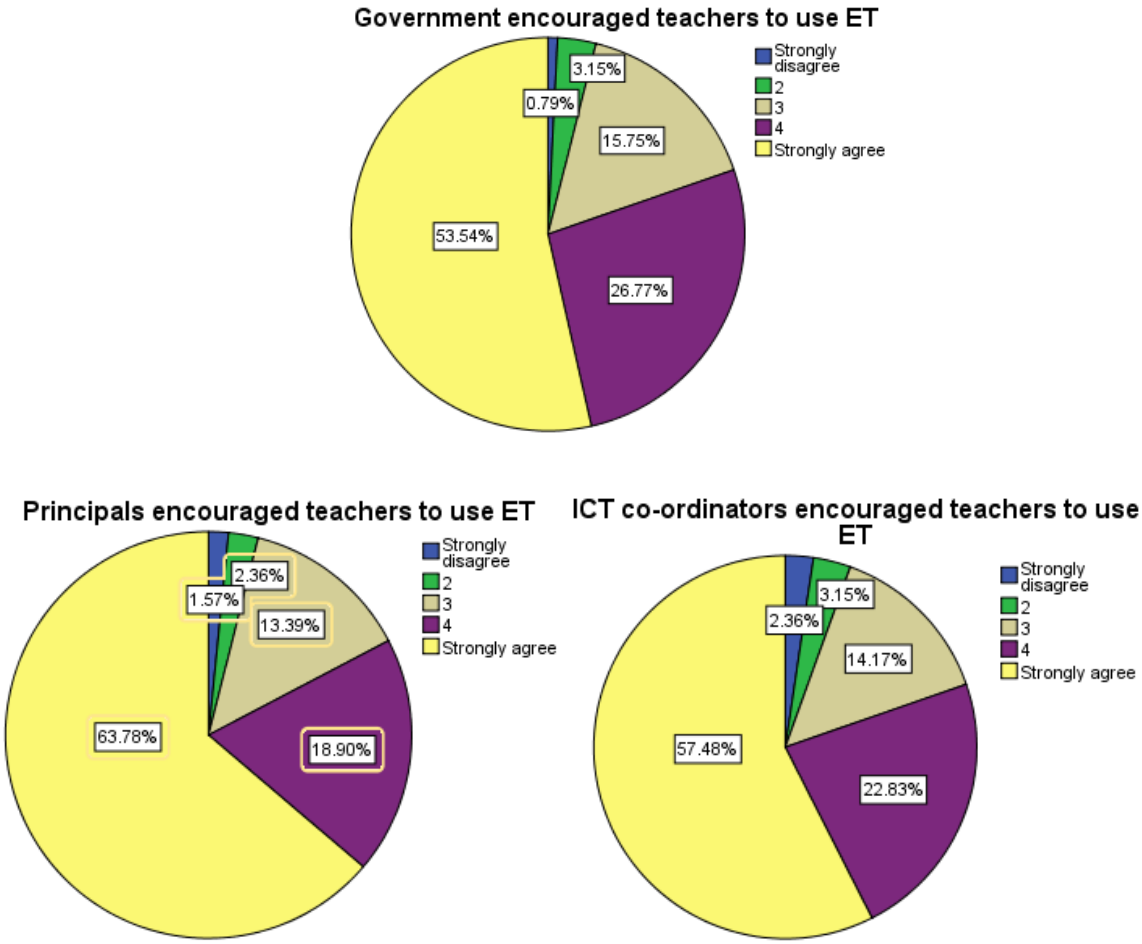


Figure 13 illustrates the number of teachers rating the level of encouragement they received from different levels of management. The yellow and purple segments account for 80% in sum, indicating that the teachers agreed (purple) or strongly agreed (yellow) that they had got encouragement from all three different levels of management. The grey segments, which were those who neither agreed nor disagreed, took from 13-15% of the response. The green and blue segments, which showed the number of teachers who disagreed and strongly disagreed respectively only accounted from 3-6%. In general, more than three quarters of the teacher

participants reported that they were encouraged by the government, their principals, and the ICT-coordinators in using ET to teach languages.

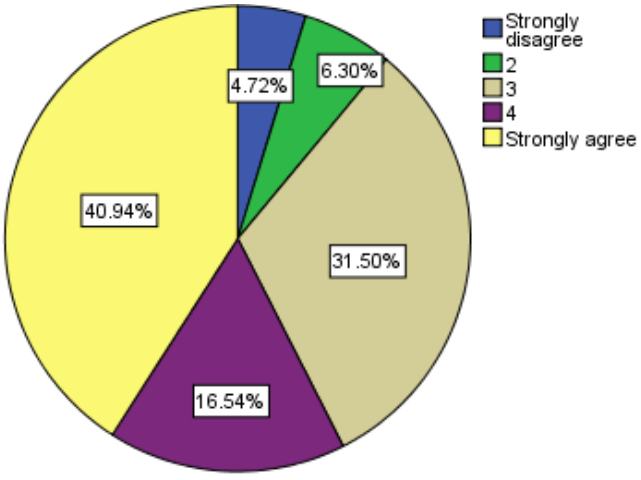
Overall, these results suggested that the majority of the teachers participated in the survey recognised that various levels of educational leadership were promoting ET usage of the language teachers. From these responses I included prompts in the interviews to ask in what ways different levels of management provided encouragement and how language teachers were supported or provided with ET training. Encouragement from management is also potentially important for language teachers as it may have influence on the teachers' level of confidence in classroom teaching using ET.

After identifying how the teachers acknowledge the encouragement of the managers, we now turn to how the teachers experienced the onsite support from the schools' IT staff when they face technological problems.

4.4.2 Support from IT technical staff

In the survey, the teachers were asked to indicate the extent and type of technical support they had had received whenever they had any problems with using ET and whether support was "on time". "On time technical support" in the survey of this research was defined as timely and useful assistance to any problems relates to the hardware or software which would otherwise make it hard or impossible to perform the planned teaching action.

Figure 14*: On time IT support for language teachers*

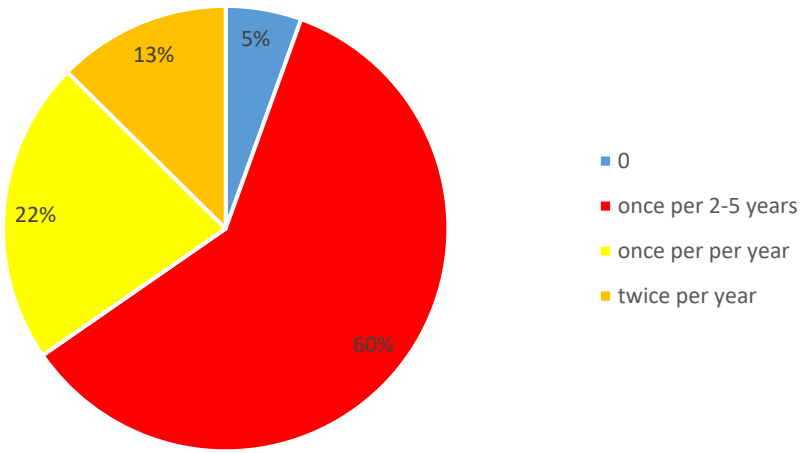


In Figure 14, the yellow and purple sections in sum indicated more than half (57.48%) of the respondents agreed or strongly agreed that they got on time technical support from the IT staff. The grey section, which was the ratio of those who neither agree nor disagree, was the second largest (31.50%). While the blue section, which showed the ratio of teachers disagreed and strongly disagreed in sum, was the smallest (11.02%). In short, though more than a half of teachers reported that they were supported on time when they had IT problems, quite a large number of the teachers reported that they could not agree nor disagree they received on time technical support from the IT staff. This gives indication on how the technical support in the schools was and how this influence the teachers' experience of making pedagogical decision making. In brief, while the support or the encouragement from the management was perceived by most of the teachers, the training and technical support were not at all optimal. To continue, the next section presents the finding on experience of the teachers on the frequency of the ET training that they received.

4.4.3 ET training frequency

The teachers responding to the survey were asked how often they received ICT training. The results are shown in Figure 15.

Figure 15*: Frequency of official ICT training for teachers*



The pie chart in Figure 15 shows the frequency of official ICT training course that the teachers reported that they were offered. Almost two third (60%) of the teachers surveyed, reported that they got limited training, one training course every two to five years, and 5% of them indicated that they had no training at all. While only 22% of the teachers received ICT training frequently, that is one time per year. The ratio of teachers who received ICT training twice per year was less, 13%. Therefore, most (65%) of the 127 language teachers in six primary schools in the city where the study was undertaken who responded to the survey did not receive ICT training annually, however 35% indicated that they received training once or twice a year.

To understand better the teachers' expectations on ICT training frequency from the schools or the ministry, the teachers surveyed were asked to note down their ideas of how often the formal ET training should be. The pie chart in Figure 16 illustrates the ICT training frequency that the teachers would like to receive.

Figure 16*: Expectations of frequency of ICT training suggested by language teachers surveyed*

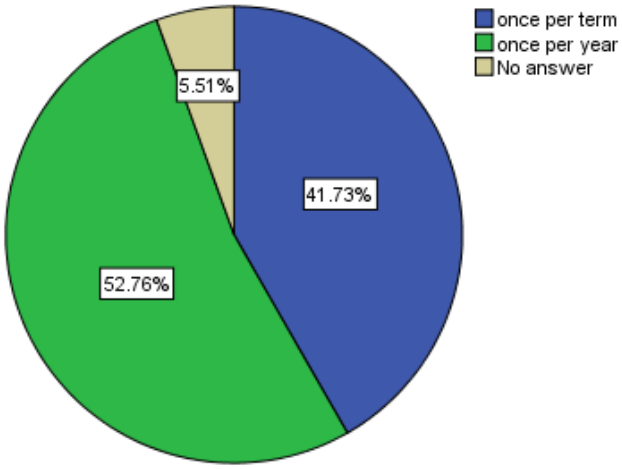


Figure 16 shows that more than half (52.76%) of the teachers suggested that there should be a training course annually. Nearly half of them (41.73%) would like to have ICT training more frequently, which was once per term, or twice per year. While 5.51% of them gave no response. No other ICT training frequency was suggested. It is clear that almost all the language teachers in this research expected to have more frequent ICT training, once or twice per year.

From the teachers' report on the ICT frequency they received and their ideas on how frequent of ICT training they expected, further investigation of aims and nature of training policy and provision is needed along with the nature of the kind of training that teachers are looking for.

4.5 Chapter summary

In summary, this chapter has shown some special features of the participants and has identified two aspects of using ET in language teaching that needs further exploring. The teachers in this research were all female, were diverse in age, worked in two different types of primary schools, and had various durations of experience of using ET in their teaching. These features helped I to have a better understanding of the teachers' world views and interpretation by sharing their lived experience in the interviews.

Then, the chapter continues to describe two aspects of the teachers' experiences: one is their experience of using ET in language teaching, two is their experience about ET professional development activities. Firstly, their experience about using ET including different ETs they used in teaching, their overall preference on using ET to teach languages, time spent on e-lesson planning with ET, and frequency of integrating ET in teaching. Though the teachers mentioned eight ETs which were personal and school-owned, almost all of them only used projectors (school-owned tools) and laptops (personal tools). In terms of ET professional development, while all management levels encouraged the usage of ET in teaching, the training opportunities for the teachers were not equally provided and the IT support in their schools were not responsive enough. Besides, all the teachers used ET in preparing e-lessons and in teaching. However, the time the teachers invested to prepare e-lessons were various. Half of the teachers surveyed spent from two to five hours to prepare an e-lesson, while the rest spent less than one hour. Most of them used ET recurrently in their language classroom the whole week. In general, the participant teachers desired to use ET in language teaching.

The above findings from the survey has revealed two aspects that need to be further explored in the future interviews. The first aspect is the language teachers' pedagogical decision making and the second one is the professional development activities that the language teachers received. The detailed analysis of the two aspects will be reported in Chapter 5.

CHAPTER 5
LANGUAGE TEACHERS' EXPERIENCES OF USING EDUCATIONAL TECHNOLOGY IN TEACHING

5.1 Introduction

Chapter 4 reported the findings from the survey in relations to details of the teacher participants' demographic characteristics and the context of their teaching. In Chapter 4, I have identified two relevant phenomena relating to the context when the primary school teachers used educational technology (ET) in their language teaching. These are their perceptions of their experiences of using ET in language teaching and their perceptions of their experience about the ET professional development activities that they received.

Chapter 5 and 6 report the findings from the qualitative data on two phenomena. Chapter 5 presents the findings on the language teachers' experiences of using ET in terms of the influential factors on their using or not using ET to teach, and their pedagogical decision making related to the use of ET. Chapter 6 continues with the findings on the teachers' experiences of ET professional development activities that they received. All the findings are supported by responses from the interviews and documents, including lesson plans and e-lesson/PowerPoint lessons that the teachers provided.

Now, the next section reports the findings related to the influential factors for language teachers in ET usage and the teachers' pedagogical decision making.

5.2 Influential factors for language teachers in decision making on ET usage

Data from both individual and group teacher interviews shows two influential factors which are enabling factors and demotivating factors as follows.

5.2.1 Enabling factors

Overall, the primary-school language teachers in this research perceived the use of ET in their teaching positively. They feel that they were keen to use ET in teaching because of the benefits for both teachers and students, which were convenience, multi-media capabilities, learner engagement, reducing teachers' workload and improving teachers' confidence in professional

development. The following section s will describe each of these benefits or enabling factors, and use the teachers' lived experience to illustrate the key themes.

Convenience

The first theme emerging from the teacher participants centred on the convenience of the ET, which means the state of being suitable for the teachers' purposes and being able to proceed with little effort or difficulty. In the teachers' viewpoints, the convenience includes the portability, the accessibility at schools, the ease of use, the ease of access to teaching resources, and helping to reduce their time and effort in teaching.

Regarding the portability of ET, the majority of the teachers mentioned that ET were handy to use, especially the portability was mentioned as motivation for them to use such ET like laptops. For example:

> La: it's convenient and portable. I can bring to school or bring home. I can preview lessons.
>
> Ma: A laptop is very light. Taking it everywhere is easy. At home, I can work on it in any room. Then, I bring it to school easily. Sometimes, I stopped on the way to school and went to a café with my laptop to work on my lesson…

La and Ma mentioned that they could bring their laptops to any places from home to school. In addition, teachers in group two mentioned that they can store large documents or files on their laptops

> G2T2: I can work on my laptop at home, then easily bring the laptop to school with all documents I need. Unlike in the past, I had to work on the desktop at school or at home, transferred the file to a drive, which was more complicated. (All teachers in the group agreed with this idea)

Teachers in Group three added that the portability of the laptops helped them to easily collaborate with other teachers everywhere:

> G3T2: It is light to take a laptop wherever I go. I like it because a laptop is as light as a book and I can bring it to staff room to show something to other

> teachers when I want to discuss about a lesson with them. (All teachers in the group agreed with this idea).

As laptops were easily transportable, the teachers could take them anywhere with lessons and teaching materials stored in the laptops, presenting the materials to their colleagues or discussing with other teachers to create a lesson plan. All the teachers in the examples above mentioned they could work from anywhere with their laptops either individually or with group.

Additionally, the teachers mentioned the ease of access to the ET in classroom was the reason for her to use of ET:

> Ja: Currently, school has projectors and computers, so I often use them".

> G1T1: There is a computer and a projector in my classroom, I can use them anytime. Loudspeakers are installed in four corners of the class; the sound is very good. (All the teachers in the group agreed)

Other teachers shared the same idea as Ja and G1 teachers when they said that they tried to utilise all the ET available in the school. When the teachers needed, the ET were there handy to use. The ET that were available in their school were easily accessed by the teachers.

The ease of use in different situations was another convenience factor that enhanced the teachers to use ET to teach languages. This was often related to the affordances of the ET. For instance, the text displayed to students could be easily adjusted to be bigger or smaller for students to see the most clearly.

> Ab: with the help of OHP, the text is displayed on screen so 100% of students can follow the text; the image is enlarged, very convenient**.**

> Ca: With a visualiser, I can zoom in or zoom out parts of an object easily. Students could see very clearly the object as I showed them.

The OHP and visualiser allowed the teacher to meet the different learning requirements in various situations. In addition, teachers in this research reported that they could be flexible in their choice of teaching materials. For example, Ba commented on the ease of using visualisers:

> Ba: Visualiser allows me to use my paper materials. I sometimes had student writing examples on papers, I just used the visualiser to show these illustrations for the whole class. I do not use computer or chalk and board all the time.

By using different ETs, the teachers could change the way to display their lessons' contents. They could use more materials like students' original works in writing, not just chalk and board in traditional method.

The ease of access to online teaching resources was often viewed as a positive feature by these teachers. Ea and Ra talked about how convenient it was to get access to teaching materials on the internet. For instance:

> Ea: Because my smartphone can access the internet, it is very convenient for us. There is e-book for teaching English. So I use it in the device directly, by Vietnam Education Publisher. It's handy and easy to interact directly.

> Ra: Because lessons are available there and there is internet connection so if I want to show additional objects to students, it is convenient.

Ea spoke of her own smartphone with internet connection. She could get access to her teaching materials like e-books easily with that smartphone in any of her classes. Also, Ra could access the internet anytime with a computer equipped in her classroom if she would like to use extra materials to support her lessons. Both teachers identified the convenience of having their personal devices connected to the internet.

Finally, ETs helped the teachers reduce time and effort in preparing lessons and in class management. In preparing teaching materials, ET helped the teachers to save time because they could reuse the materials. For example:

> G3T4: In reading lessons (telling story), I can record [the story] by smartphone. I don't have to talk more if I need to replay or teach the lesson in another class.

> G4T2: Before ICT being used, teachers had to prepare pictures which were a lot. Now, thanks to projectors, teachers' jobs are reduced.

As mentioned by teacher four in group three, she just recorded her voice reading a story as a demonstration for students once, and then she could use for the same lesson in another class. Teacher two in group four gave another illustration of visual teaching materials which could be stored electronically without taking as much of the teacher's time and as much space to store the hard copies as in the past. Their workload was reduced significantly.

> G3T1: ET helps to reduce our workload when we used ET in our language lessons. For example, in the past, we had to speak and write a lot, but now, just by images can transfer ideas and motivate students.

This teacher illustrated that ET saved her physical effort such as speaking and writing when she was teaching with ET in her classroom. In the past, she had to speak and write during class time, but that time with the aid of ET, she could alternate by using visual aid such as OHP, or speaker aid such as audio files. In general, these responses indicated that ET assisted teachers to work more efficiently with less effort. As integrating ET, teachers could save time for preparing and storing teaching materials, and decreased their physical efforts such as speaking and writing during class time.

In summary, the teachers in this research appreciated the convenience of ET due to the easy mobility, the ease of accessibility, the ability of adapting and adjusting in operating, the ease of accessing to online resources, and lessening their time and effort in lesson planning and physical work such as speaking and writing.

Multi-media capabilities

The second theme emerging from the teacher participants is that they recognised the constructive features of the ET's multi-media capabilities, which included the visual and audio aspects. Firstly, the teachers said that using screens to display images of items when teaching new vocabulary was effective. They believed that the use of images reinforced the students' understanding of the vocabulary meaning. As the following teachers said:

> Ab: When I verbally explained one word to the students, they could not imagine [what I was describing]. I used ETs to display images on screen, which helps students to understand the word's meaning easily.

> Ha: In English class, teachers do not have to explain but show images. By looking at images, students can guess the meaning.
>
> Sa: Some words are explained better by seeing images on screen of projectors. To illustrate some old words that were not frequently used currently, I just showed the images so the students could understand instantly.

According to Ab, Ha and Sa, images displayed on screen supported student learning of vocabulary meaning. To illustrate, Ha gave an example of how she explained the word "rice" for her students who were born and living in the city and most of whom had never ever seen rice plant and seeds. She showed them the image of a rice plant and a grain of rice by using the projector. Her students could see every detail of the rice plant, like roots, leaves, and every single rice seed. In her opinion, "*images spoke louder than words*". To help students comprehend the words that they never experienced, ETs with visual function were effective alternatives.

Visual functions were also helpful for teaching essay-writing subjects. The teachers reported that such ET like visualiser helped to present the writing work of both teachers and students to the whole class to learn. Teachers Na, a Vietnamese language teacher and Oa, an English language teacher commented:

> Na: In the past, when there was no visualisers, I could only give feedback on students' writing individually, on each student's work, or by reading a good writing sample for the whole class, or by writing a sample on the whiteboard. But now, I just use a visualiser to show any authentic materials to the whole class. Students can learn more from more writing samples.
>
> Oa: Good sentence writing or incorrect writing could be displayed by a visualiser, so my students know where their mistakes are and know how to correct the mistakes. They could also see multiple authentic examples of their classmates' writing.

In their class, they recognised that the visualiser helped to display real examples of students' work, or samples from others. Within the same teaching time, more samples could be shown to the whole class. So, students could learn more form their classmates, unlike without visualiser, chalk and board limited the number of samples shown to students and students could only learn

from their own mistakes. The teachers agreed that using visualisers was more efficient than other traditional presentation ways like writing on board or reading out loud.

In short, visual functions of ET were perceived as very helpful in assisting the teachers in teaching vocabulary and essay writing in comparison with non-ET tools of chalk and board or verbal explanation.

Next, audio aids such as speakers attached to a projector also assisted the language teachers in this research in teaching listening and writing components. The loudspeakers were always used in Ha's listening lessons.

> Ha: In the past, there were only a CD player on teacher's table. It was hard for students who were sitting far from the player to listen. Nowadays, there are four loudspeakers in four corners of each classroom, so students in any place of the room can listen to the audio file with equal quality. This helps to increase the quality of Listening lessons. I am glad that our classes are better equipped with such ET.

As Ha said, the classrooms were better equipped at that time with loudspeakers around the class to ensure the quality of listening. This helps teachers feel more confident as they teach listening lessons.

Besides, Oa suggested another way of using the audio function of ET for practice writing essay:

> Oa: [In] practice writing an essay, for example, I showed image and audio of the rain, students could see and hear the rain, then they could describe in their own words.

In this example given by Oa, audio assistance was effective because it aided student memories and stimulated their imagination by the sound of the rain and the rain's rhythm. By providing students with a sample of rain falling using appropriate sound effects, students could describe in writing the rain and how it was falling. In general, audio functions of ET were perceived being effective for teaching listening and writing lessons

To summarise, all the above ideas showed the language teachers 'experiences on t the visual and audio functions of ET in teaching three subjects of vocabulary, writing and listening. Their

perceptions showed that they used their technological pedagogical knowledge (TPK) as they were integrating ET. This enthusiasm of using ET relates to the third benefit of ET relating to learning engagement.

Student engagement

The third theme emerging from the teacher participants revealed that they were keen on adopting ET in their teaching because they found out that ET helped student engagement by enhancing students' passion for learning, increasing their class participation, and improving students' learning capabilities.

In terms of students' passion for studying, the teachers recognised that students in their classes were motivated when ET were used in language lessons:

> Ra: My students loved the lessons that I used ET very much because they could learn by watching on screen. It is different from looking at a blackboard. They are more motivated.
>
> Ta: My students are looking forward to learning with ICT. They were always excited. Each time, just simply, they saw a picture shown on screen, they were eager.
>
> Ia: The major advantage is that students are interested in the lesson with ET. They were very motivated. In all lessons, when teachers started the projector, the students were very happy because they were taught differently. They could see images and colors.

As describing how students were in ET integrating language lessons, such words like: "loved", "motivated", "excited", "eager", "happy" were frequently used. Ra explained that her students were encouraged to learn as they saw real images which were shown on the screen. According to Ta and Ia, their students were keen on the language lessons with images or video shown on screen. Their students felt excited in the lessons illustrated by colorful photos. Learning with ET's aids were considered as an alternative learning method instead of blackboards and lecturing, and was welcomed by the primary school students.

In terms of students' participation, the teachers observed that students were more involved and more focused on the lessons when ET were used in lessons. These teachers identified that they could involve all students in their lesson as they use ET to give feedback, instruction or explanation.

> Ja: Since having a computer and a projector in my classroom, each time I gave feedback for students' writing, all of my students could see my feedback on the screen. All of them took part in the process of giving feedback. Everyone could learn from each other's work. Unlike in the past, each student knew their own feedback, sometimes their peer's feedback but not the whole class when there was ET assistance.

Ja found it necessary to use a computer with a projector in practice-writing lessons because as she showed a student's work on the screen, all students in the class could see an authentic writing and understand the teacher's feedback on the work. While without such visual aid, she could only give individual feedback in writing one at a time, and other students had little chance to learn from their friends' work.

> Ea: …for small children, it [using ET] is very effective because it draws their attention. They are very eager to see images on the screen.

Ea thought that showing the lessons with images on screen was an effective way to attract the young students' attention. ET helped her to maintain the young learners' focus time.

Changing the ways of teaching using ET made the students "*more fun*" and "*more relaxed*". Furthermore, these teachers observed that as they used computers and projectors to teach the lessons the time students retained their motivation on the lesson tasks increased:

> Ha: when teaching with ET, the class' atmosphere is more relaxed, the time with student engagement is longer. The lessons run smoothly and more images. Students have more fun.

Da shared the same views and reported that students' concentration on the lessons was longer when she presented her lessons using a projector or an OHP.

And in terms of students' learning capabilities in the classroom, the teachers observed that using ET could facilitate students' comprehension and acquisition of new language knowledge in a shorter time and more effectively. QA explained:

> Qa: Students can comprehend the lesson quicker and better… The method teachers use to deliver lesson help students to learn better and quicker.

As Qa used a computer and a projector in her lesson, she found that her students acquire more amount of language knowledge within a shorter time. She also thought that could understand and achieve better result in their language

Furthermore, these teachers acknowledged that ET promoted autonomous learning. Students were observed to be more curious and to learn by themselves when ET were used in the lessons:

> Ua: ETs encourage their curiosity. In class, they raised their hands and asked me more questions.
>
> Ca: It helps students to self-study.
>
> Ha: ET help the lessons more dynamic, teachers have less work. Students work more. Students are more active.

Ua could see that when she used projectors in her lessons, her students more frequently asked their classmates and the teachers about the lesson content, which was a signal of curiosity. *Ca* noted her students started to explore more about the language by themselves in class and at home as they could access the internet on their own. For example, she instructed them how to search for a word meaning by using Google only one time, then students were always able to search for new words' meaning by themselves and only asked her about the word's meaning if there were difficult lexical items.

In brief, the teachers identified that teaching with ET improved engagement in three aspects. Firstly, students were found to be more interested in the lessons with ET support. Secondly, they were more actively participating in the lessons. Thirdly, they were quicker in comprehending new language knowledge as the knowledge shown on screen in different ways. Besides, the teachers also experienced their workload was lessening, which will be described in the next section.

Teacher confidence in self-professional development

The fifth theme emerging from the interviews with the teacher participants was their belief that using ET in teaching language made them more confident and more aware of the benefits of continuous self-professional improvement. They felt more confident in terms of feeling that they were more up-to-date, more creative and more informed with regards to using ET in their language teaching. These feelings were apparent in the following responses:

> Da: ICT helps me to improve my professional and I am updated with modern technologies.

> Ra: Teachers who use ICT are creative artists. They know how to make lessons lively by using colours, photos, and animations. The first time use gives experience for the second time using. When I use ICT, there are many new things, I can learn more.

> Ta: As a teacher, I can learn from many sources as preparing e-lessons. I learn from YouTube, from Google. I can ask for experience sharing from colleagues in Facebook groups for primary school teachers, for English language teachers.

In addition, one teacher from group three proudly shared that she felt that she had a higher status than the traditional teachers who did not use or could not use much ET to teach language lessons.

> G3T1: For [ET-using] teachers, I think they are more active, more up-to-date, especially in 20th century, the age of Industry 4.0. In the past, I was unconfident as I could not use ET, but now I am proud of myself as I can use them more effectively in compare with other teachers.

One more advantage indicated by teacher Ra was the lifelong learning awareness of teachers as they used ET:

> Ra: The first time use gives experience for the second time using. When I use ET, there are many new things I can learn. When students are motivated, teachers like teaching. When I can teach many things, I feel I am more creative and want to explore more. If I want to teach students well, I have to self-explore and never cease learning.

Her explanation was an indication of her recognition that ET was a motivating factor to help her keep learning by herself to improve teaching quality. Therefore, she also became more creative in her teaching.

In summary, the four themes emerged from the analysis shows that the primary-school language teachers in this research showed their enthusiasm to use ET in their teaching. The convenience and multi-media capabilities are two dominant factors. In addition, there are two elements relating to the positive influences of ET on student's engagement, reducing teachers' amount of work workload and their self-assurance about their own professional development. Despite their positive attitudes towards the use of ET to teach, the teachers still identified some barriers that hindered them from using ET in their language lessons. The following section is the description of five broad themes emerged as the barriers for the teachers' use of ETs in their teaching.

5.2.2 Demotivating factors

There are three themes emerging from the interviews as the teachers' perceived issues of using ET in language teaching. The three themes are technical issues, negative effects on students, and the insufficiency of the ETs. These factors are described and clarified below.

Technical issues

The first theme emerging from the teacher participants' interviews is their concerns about technical issues. In this research, the terms "technical issue" mean a software or hardware issue.

Lack of technological knowledge and skills

The first issue was the uneven technological knowledge among the language teachers in the schools of how to use the ETs available, which resulted in the decreased quality of the ETs. Not all teachers had the same knowledge about how to use the ETs, from simple to complicated one, which might reduce the quality of the ET. Teacher Fa explained:

> Fa: … teachers need to be trained well so that everyone gets to the same level of using the ET because …subjects are taught by different teachers. So one class has many teachers in and out, if they don't know how to use the tools on the right way, the tools will get worse quickly".

From teacher Fa viewpoint, not all teachers of her schools knew how to use ETs available in

class comprehensively, such as how to start or end a projector, how long between each time end and restart a computer, or what to do when the computer was out of order. Different teachers solved problems in different way, which resulted in the low quality of the ET equipment.

Lack of confidence in acquiring new technological skills

The second issue raised by the older teachers in this research was that they were not confident in integrating ET in their teaching. They found it hard to acquire ET using skills at their age, so they were reluctant to use ET in their lessons.

> La: In the past, traditional methods did not use much ET. Using ET, the lessons are lively, the description is rich and students understand better. The disadvantage is from us, teachers. Using ET needs skills, we are now old, and it is difficult to learn these skills. I am quite slow at designing a lesson. I do not know how as many functions of PP as young teachers do. I also cannot search online materials as fast and effective as young teachers do.

La was in her 50s, she mentioned that old age might prevent her from acquiring ET skills. She compared herself with younger teachers and recognised that she was not as effective as the younger teachers in using ET to design PowerPoint lessons. She also said that, in comparison with younger teachers, she was slower in online information searching skills.

Teacher Sa, also in her 50s, shared another issue:

> Sa: The younger teachers acquire new technological skills faster than me. As learning new skill, it takes younger teacher only a few minutes to apply the new skill, but it may take me hours to be able to do. But then, I forget easily, while young teachers remember longer and do quickly. That's why I prefer using chalk and board.

Teacher Sa mentioned the problem of time to acquire new technological skills and remember how to use the skills. According to her, old age made it hard to learn a new skill and to pertain the skill to apply next time. As a result, it took much of her time, which made her unwilling to use ET and prefer using traditional tools such as chalk and board.

In brief, for the older teachers, though they realised the benefits of ET, they still felt unconfident and anxious as using ET because firstly, they did not know if they solve technical issues in the

right way as other younger teachers did; secondly, they felt difficult in learning and easy to forget new ET skills.

Lack of skills to manage and deal with technical issues

The third issue emerging from the teacher participants' interviews is a considerable amount of time to prepare lessons and deal with technical problems in class. From their experience, the time to plan a lesson using ET was considerably longer than the time using traditional methods. They frequently used the phrases "takes more time", "takes a lot of time", "time consuming", "time…is longer", "too much time for…".

> G2T1: it takes me double or triple the time to prepare lesson using ET than printed because there are more IT skills required.
>
> Ja: it takes a lot of time to prepare a PowerPoint lesson, two or three times more than writing.

The teachers meant using PowerPoint software to prepare a lesson required more technological skills, which would take more time than preparing traditional lessons by handwritten, without ET. Moreover, the teachers also reported that any problems like poor-quality or out-of-order equipment, incompatible devices, or unstable internet connection would also take their time for solving during teaching time.

> Ra: Once I used them, there were technical problems that I could not solve, it took a lot of time, can be nearly the whole lesson. When students were watching, the projector was out of order, I had to fix by myself and then seek for help, it took me half or most of the time of my lesson
>
> Fa: the first disadvantage is that they are incompatible: One kind of cable head for this class, and my computer use another cable head…It is necessary to invest the whole set. The internet is unstable. Getting accessed to websites is always slow, which slow down my lesson.

Ra experienced having technical issues with the ET in her class, with it at times breaking down; it took away much of her teaching time to figure out the problem by herself and look for IT support. Fa identified it took much time because the equipment provided were incompatible with

each other. She did not know this until she used it, and she had to find an alternative, which consumed much of her teaching time.

More time spent on helping students in the classroom to use ET is also a factor that hinders the teachers from integrating ET in their language lessons. For instance, teacher Ra explained:

> Ra: There are many ET applications, they are interesting but require students' interaction with computers, smartphones… However, some students can do, some students cannot do. It takes me time and effort to help the weaker students to use the ET so the lesson's objectives are sometimes not achieved.

In Ra's opinion, the unequal level of students' ability with using ET skills in a class might have negative effects on the quality of the language lesson. The teachers might have to spend more time on technical issues which were perceived as reducing the quality of the lesson as the lesson's objectives were not fully achieved. In short, a considerable more amount of time spent on preparing lessons and on helping students in class with technical issues was perceived by the teachers as a problem that made them hesitate to integrate ET in teaching.

To sum up, the language teachers in this research raised three technological-related issues as adopting ET in preparing lessons and teaching in class. The first issues related to technological knowledge which was not sufficiently provided to all language teachers. As a result, the teachers worried that they may harm the ET, so they hesitated to use ET in their teaching. The second technological-related issue was that the older teachers recognised that they found it hard to acquire and remember technological knowledge, which prevented them from applying ET frequently. The last technical issue was that due to lack of technological knowledge and skills, the teachers found out that ET integrating took a considerable amount of time in lesson preparation and class management. It can be seen that the three technical issues are all consequences of lacking knowledge and skill of ET.

Moreover, the teachers in this research identified some negative influences on their students, such as students' study skills and other senses may not be fully developed as they used ET in their language lessons. The next section will describe the effects in more detail.

Student-related issues

The third theme emerging from the teacher participants' interviews is two drawbacks on students as the teachers used ET in their classrooms.

Limiting students' study skills and senses

The teachers commented that using too much ET with visual and audio aspects may prevent students from developing their reading interest, learning by senses and experiment. Teacher Ea and Ma identified that students' interest in reading printed stories or books was reduced, they were keen on watching videos, listening to audios and seeing images.

> Ea: I observed that my students were not patient enough to read a printed story. They just read because they were requested to do so by the teachers. They could stay long to watch video without any request.
>
> Ma: My students are now loosing patience. I can hardly find any students concentrating on reading a text or a story. Most of them tried to read quickly to answer questions and got it done. While they prefer lessons with videos and images.

From teachers Ea and Ma experience, in their reading lessons, their students could spend longer hours with ET with eager, but they could not stay long with a story in the textbook to read. The students could not concentrate for long to read printed stories, but they could stay from beginning to end of a lesson with videos and images. In other words, the students lost their interest and patience in reading printed stories or books

The teachers also perceived that, students' ability to self sense a literature work in the subject named "Making sense of literature" in Vietnamese language class could be constrained. "Making sense of literature" is a Vietnamese language subject that requires students to talk and write about their own feelings after reading a literature work like a poem or a story. Without spending time to read, think and imagine, students cannot produce effectively verbally or in written form. Teachers Ma and Va reported:

> Ma: Whenever I asked my students to stand up and answer reading comprehension questions, most of them could only give answers in short and

> simple sentences, but could not produce long answers with complex sentences and variety of words. They found it hard to express themselves.
>
> Va: I found out that my students could not write as long as we did in the past, and their vocabulary is not as wide as our generation. They wrote simple sentences and simple words. Only a few students could write long sentences with less common words.

Teachers Ma showed her concerns about students's speaking skill, and Va concerned about her students' writing skill. Both teachers mentioned about student's weaker ability to produce complex sentences and to use a wide range of vocabulary.

Another concern of the teachers, which is, when students got used to watching video and images, they were less physically active, teachers in group one noticed:

> G1T3: My students tend to stay at their seats to watch videos and images. They hesitated to move or to do other tasks.
>
> G1 other teachers: Yes, it's true.

Students tended to stay still to learn. Furthermore, with ET, students did not have a chance to experiment like touching, holding, smelling things, as teacher Ab commented when ET was <u>all</u> they did in a lesson.

> Ab: Using ET in teaching, we just help to improve students' seeing and hearing senses while the other senses are not developed.

In short, the teacher participants perceived that since they used ET in their language lessons, they observed that there were some negative influences on students reading, speaking, writing, and sensing skills. They perceived that not only students' mental abilities were negatively affected, but also their physical health was negatively influenced.

Being harmful to students' physical health

Secondly, the teachers' concerned about students' health, especially problems related to their eyes. According to them, using too much ET in teaching may make students' eyes short-sighted. Some illustrations of their perceptions in this regard are:

> Da: ET is both good and harmful. It is harmful because of long time looking at computers and screens worsen students' vision. That's what we concern the most.
>
> G1T3: Having ET may harm to Ss' eyes. From 30% of the students in my school are short-sighted. (All other teachers agreed)
>
> G3T4: Sometimes, young teachers overuse ET such as using too many videos, games, which does harm to students' eyes. The ratio of short-sighted students is high now in primary schools.

The teachers recognised that the number of students wearing short-sighted glasses was high and was increasing. In their viewpoint, they assumed that it was because the students look at the screen to watch video or to play game in class as a whole too much.

In general, some teachers limited the use of ET due to the possible harm to students' eyes. Moreover, other teachers commented that they had limited times to use ET because of the insufficiency of some types of ET at the schools, which is shown below.

Equipment-provision-related issues

The third theme emerging from the teacher participants' interviews is the teachers' comment of the insufficiency of some types of ETs. The interviewed teachers mentioned that there were always lack of two ETs-Interactive whiteboard (IWB) and visualisers. In order to have chance to teach and learn language with such costly equipment like the IWB, which was only available in some rooms, both teachers and students had to move to the room equipped with IWB, teacher *Ca* reported. This hindered her from using IWB to teach her language lessons. visualiser

> Ra: My school has only one IWB in a special room. In order to use that room, we have to book long time before hand but each teacher can use the room with IWB only one time a week.

In Ra's school, there was only one IWB for the whole school. Teachers could only use IWB once per week.

> Qa: I rarely use visualiser because my class does not have. It is expensive. If I want to use, it takes time to borrow.

> Sa: In fact, my school does not have enough ETs. I keep the visualiser for my class. There are two visualisers for each year group. English classes are invested better, so the visualisers are always in these classes. Normal classes, teachers have to borrow. Out of the model teaching time, we can borrow more easily. During the model teaching time, after borrowing, we have to return right away so that other teachers can use.

In Qa's and Sa's cases, not all classes in their schools were equipped with visualisers, so teachers in the schools had to take turn to use, which were inconvenient for the teachers. That was why the teachers decided not to use this tool frequently.

In summary, the above three themes focus on factors hindering the teachers to use ET in their language teaching. These factors relate to technological, students and the equipment provision. Regarding technical issues, there are two barriers which are lack of technological skills and time consuming for lesson preparation and dealing with technological problems during in-class teaching time. Regarding students' learning, there are two perceptions of teachers about using ET that are limiting students' skills and senses in learning and causing them to become short-sighted. The idea that the equipment provision was insufficient in the schools also hindered the language teachers from using ET in teaching.

Besides recognising the factors that affected the use of ET in teaching, the language teachers also experienced how they made pedagogical decisions on ET usage, which will be described in detail in the next section.

5.3 Language teachers' technological pedagogical decision making

5.3.1 Replacing traditional technologies by ETs in teaching language components

From the teacher individual and group interviews, the responses showed that the teachers used ET instead of chalk and board to teach four language components because they perceived that ETs helped students learn the skills better. The components that the teachers used and commented positively were vocabulary, writing alphabet letters, writing essay, and listening.

In vocabulary lessons, the teachers prefer using OHP to white board to teach the words, as teachers Pa and Ra responded:

Pa: In the past, when there were just chalk and board, I explained new vocabulary by writing words on board and explained verbally to the whole class. Since there was the OHP, I just show the image of new vocabulary and students get the words' meaning. Students can learn quicker and more words in the same period of time.

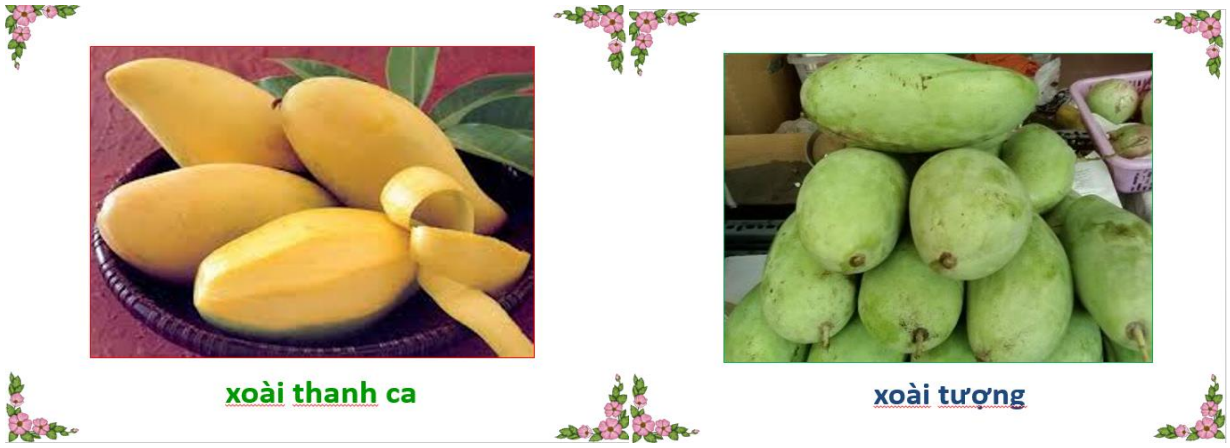
Ra: There are both white board and an OHP in my classroom. But I use OHP more because I do not have to write and talk much, just show the images of the words I want to teach and students can get the meaning.

G1T1: Since my classroom was equipped with an OHP, I use the OHP in all of my vocabulary lessons. It is more convenient than writing words on board and explaining verbally. [others agreed]

It can be seen that the teachers still teach vocabulary by presenting words to the whole class. They just use ET, different mean of presentation, to alternate chalk and board.

The images in Figure 17 show three Vietnamese types of mango (xoài) that one teacher used to explain the word meaning, which helped the young students learn the words quickly.

Figure 17: *E-lesson slides to explain types of mango (xoài)*



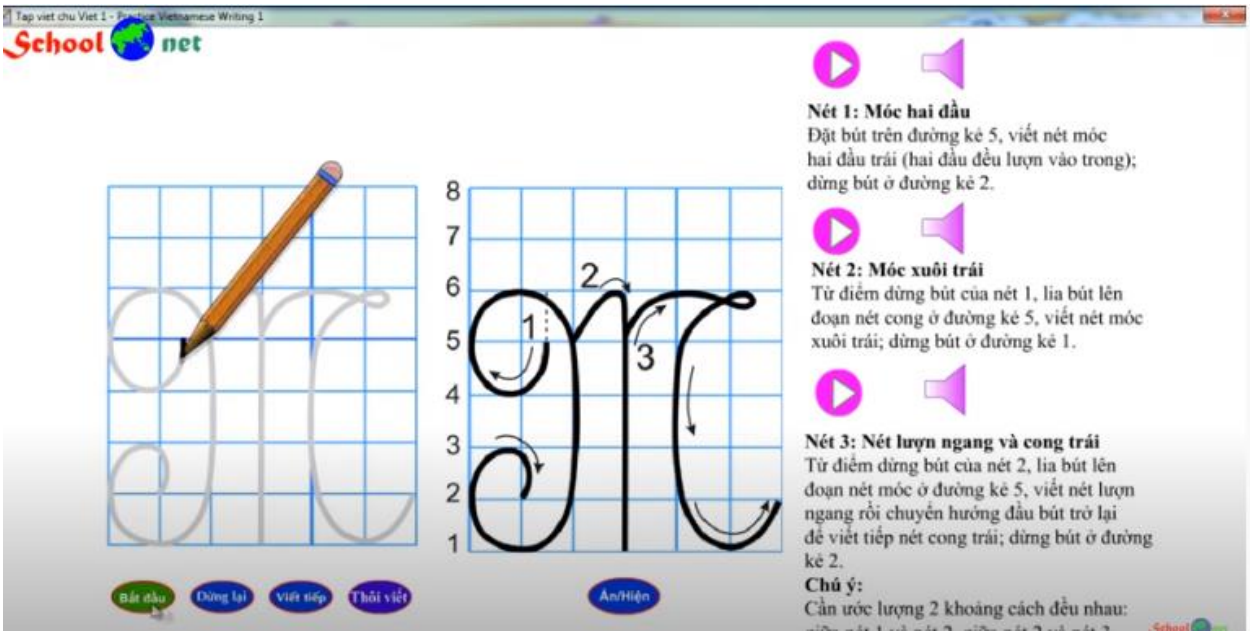
The teachers perceived such images displayed by an OHP supported students' comprehension better. OHP is better alternation for traditional teaching tools like chalk and board. Teachers are still the main source of information, just the way to illustrate information was different.

Besides, in writing lessons, the language teachers believed that ETs were supportive because ETs helped visualise authentic writing samples. The teachers illustrated that they used ET to demonstrate a writing task, or to present the writing work of both teachers and students to the whole class. For example, in Grade 1 and Grade 2, students learn how to write Vietnamese characters of the alphabet. Instead of using chalk and boards to illustrate how to write a character, the teachers used a software programme with guided steps which can be shown to all students in a class. Teacher Ra explained:

> Ra: For writing characters, there is a helpful software to teach because it shows to the whole class how to write a letter. Writing on board is not as clear as the software does, as it shows how to move hands from where to where. Moreover, I can replay the lesson at any stage of the writing if students are not clear about how to do.

Using the software with the demonstration of writing each letter (see Figure 18) enabled Ra to illustrate each hand movement to her whole class, which she believed more effective than using chalk and boards.

Figure 18*: Software demonstration of how to write letter M*



Note: Used with permission. Sourced from https://www.youtube.com/watch?v=DJCoIJfHM0g

Moreover, in teaching another writing aspect, essay writing, teachers in this research believed that they used ET to show the authentic work of their students so that all students could learn from their friends' work. For example, good sentence writing or incorrect writing could be displayed on the screen:

> Oa: …so they know where the mistakes are and know how to correct the mistakes.

In contrast to teaching without ET, when students' writing mistakes as well as good work could only be seen by individual student, with ET aids, the whole class can learn from each other.

Besides, the teachers also suggested using video to help students in writing descriptive essay:

> Ma: In practice writing a descriptive essay, for example, I show video of a storm, all students in class can see and hear the sound of the storm, then they can describe in their own words regardless they have prior experience of a storm or not.

In the example given by Ma, video shown helped all students to have the same experience of the storm. By providing students with the same sample of a storm with sound effects, the teacher could enable students to describe the same storm in their own words.

In listening lessons, the teachers used the speakers attached to computer and projector more frequently than CD players as Ha explained:

> Ha: I used loudspeakers in all listening lessons. There are four loudspeakers in four ceiling corners of the class. The quality of the sound is very high, like the real sound. If I used CD player, not all students (there are 50 students) could hear the sound as well as the ones close to the player. The loudspeakers help all students improve their listening skill.

Since each classroom has about 40-50 students, Ha decided not to use the CD player but speakers which were installed in four ceiling corners. She believed that it would help all students in any table of the class could listen to the listening script with the same sound quality. As a result, the quality of the listening lesson would be better as all students could hear well. Ma commented:

> Ma: I've been teaching for 15 years. When the loudspeakers were not installed in the classroom, students sometimes complained their listening comprehension was low because they could not listen clearly in class time. Since the loudspeakers were installed, I heard no such complain from the students. Their English listening ability is improved.

Ma's experience in her 15-years of teaching has added an idea that the availability of loudspeakers in the classroom not only increased the student chances to listen to the same sound quality but also improved the quality of the listening lesson.

In short, based on their TK, CK of each language components, and PCK, the teachers in this research alternated traditional technologies by available ETs to teach their students. They employed both audio and visual functions of the ETs in teaching mainly four language components which were vocabulary and writing Vietnamese letters, writing, and listening. ETs were also employed in other language components such as reading, grammar but less often. In

other words, the ETs including laptops, projectors, visualisers, and writing software were used as direct substitutes with their original functions.

Besides deciding to use ET as substitutes, the language teachers had typical ways of using ETs to interact with students-teacher led or teacher-centred approach. The next section is going to describe in detail this approach.

5.3.2 Teacher-centred approach in ET integrated language lessons

The lesson plans and PowerPoint slides of e-lessons were prepared and designed by the teachers in this research. The e-lesson format showed that the language teachers used ET to mainly present the lessons and to check students' understanding of the lessons. A typical format of presenting a language lesson was the lesson's title, content, and instructions. Firstly, the title of the lesson was displayed on screen of OHP to introduce to the students. Figure 19 is an example of an introductory slide of a Vietnamese essay writing lesson for Grade 5, which includes the name of the component in red which means "Essay writing", specific topic of the lesson which is "describing natural scene", and subtopic-How to write an introduction and a conclusion paragraph-in brackets at the bottom of the slide

Figure 19*: An e-lesson slide with the title of an essay writing lesson*

Then, the next slides present the main content of the lesson for the whole class.

Figure 20*: An e-lesson slide with writing samples*

Figure 20 illustrates two samples of introductory paragraphs which were copied from an exercise in Grade 5 essay writing course book. The content of the slide is: Exercise 1/83: The two paragraphs below describe the way to school from your house. Read and let us know: Which paragraph is a direct introduction; which paragraph is indirect one? Explain how to write the two types of introduction paragraphs. a) and b) are two sample paragraphs.

Figure 21*: An e-lesson slide about one class activity*

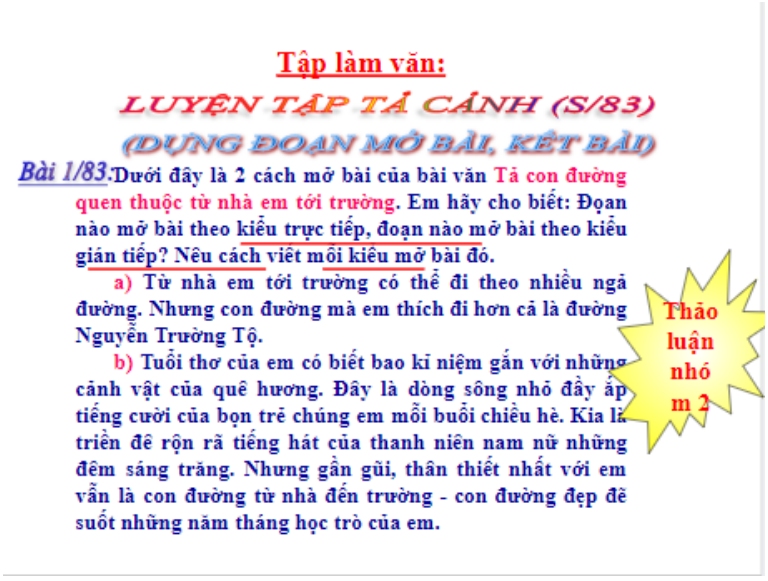
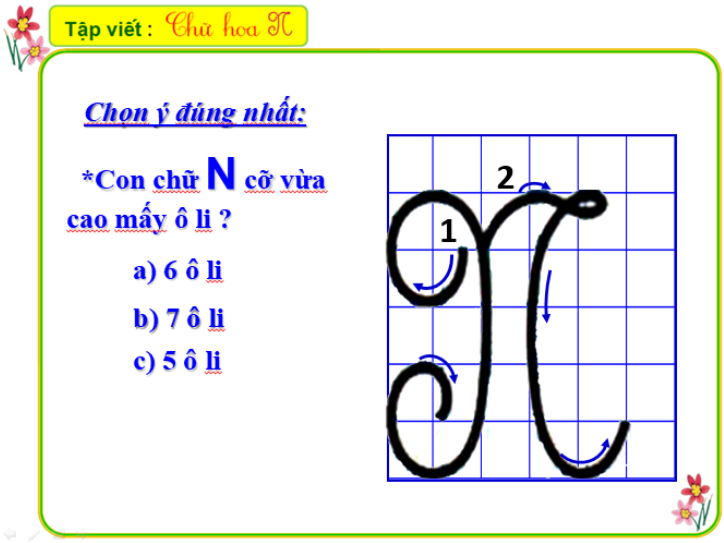


Figure 21 is a slide with underlined phrases and a yellow bubble on the right side of the slide, which guide students what to do next. There are three underlined phrases which highlight the

main content of the request. The yellow bubble in the right side of the slide means “discuss in pair”. Within three minutes, students are going to discuss with a friend to answer the request “let us know: Which paragraph is a direct introduction; which paragraph is an indirect one. Explain how to write the two types of introduction paragraphs.

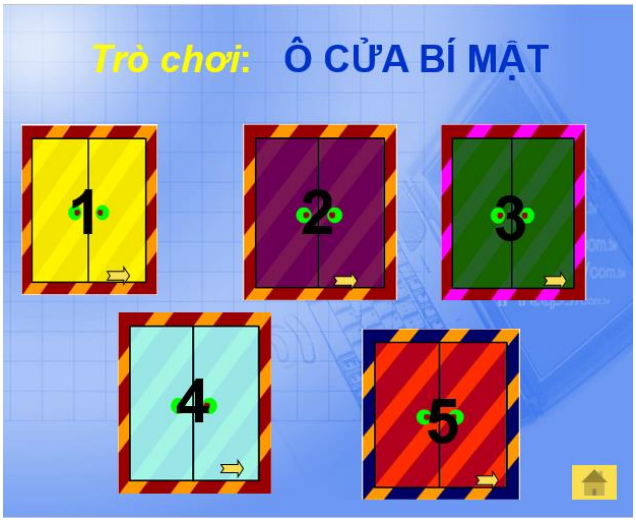
Additionally, the language teachers used slides in an e-lesson to check students’ understanding of the lessons. The teachers designed quizzes and games on the slides. Figure 22 is an example of a multiple-choice question on how to write the creative letter N. The question shown in Figure 22 was given to students to think about for a minute, and then the image was brought in by using the transition function of PowerPoint, so the students could check whether their answers were correct.

Figure 22*: An e-lesson slide with a multiple-choice question*



Another example of a review activity is the Game "Secret windows" used in a vocabulary lesson. This is shown in Figure 23.

Figure 23*: An e-lesson's slide with game "Secret windows"*



The slide in Figure 23 illustrates the game which was used to help students review the new words and phrases introduced in the lesson. It took about eight to ten minutes to play the game. The teacher asked questions, the students answered, and then, the teacher clicked on the function to open the windows so the students could check their answers. This game was used at the end of the lesson.

It can be seen that the teachers led the whole process when they used ET in their teaching. The interactions were designed and presented by the teachers. Students were told what to do and they listened and responded as required. In other words, the teachers were in active roles while students were in passive roles when incorporating ET to teach.

In short, this section has described the teachers' experience of making pedagogical decisions on ET using frequency, what language skills and components that ET could be helpful, and how ET were used to teach in their classrooms. The language teachers played an active role in their pedagogical decision making. Their decision was based on their knowledge of the curriculum, teaching content, and basic functions of ET.

5.4 Chapter summary

Overall, this chapter has provided a comprehensive picture of the language teachers' experience of their ET usage in teaching.

In terms of their experience of ET usage, these teachers recognised both benefits (which empowered them to use ET in teaching) of using ET and the issues (which deterred them from using ET in teaching) of integrating ET in teaching. The five key benefits of using ET in teaching languages were convenience, multi-media capabilities, learning engagement, reducing teachers' workload, and improving the confidence of teachers in their performance practice.

Firstly, the teachers commented that using ET was convenient because the tools were always accessible, user friendly, and allowed the teachers to easily and quickly access a variety of online teaching resources. Therefore, they always tried to utilise the ET available at their schools. Secondly, the teachers appreciated the visual and audio capabilities as these helped them to teach the three language components: vocabulary, writing and listening. Thirdly, the teachers perceived that students were more engaged in language lessons with ET aids. The learning engagement was indicated by students' increasing preference for studying languages, greater participation in class and development in students' learning competence. Fourthly, at the same time as the ETs were improving student's learning engagement, the lessons using ET were perceived to lessen the teachers' workload by reducing their time to prepare lessons. Laptops with internet connection aided them to quickly access resources and store their lessons in digital form. They no longer had to seek for a physical place to store their teaching materials. Finally, the teachers felt more confident about their teaching practice as they were using up-to-date method. They believed that they were in a higher status as they could use the technologies. They also found themselves more innovative in their teaching because of the ideas gathered as they accessed resources on the internet. In addition, they realised that they were enriched with more knowledge of how to use modern ETs in their teaching.

On the other hand, there were issues that made the teachers hesitate to use ET to teach languages, which were lack of technological skills of both teachers and students, time required for technical issues, a reduction of the skills and senses of students, being harmful to students' physical health, and the shortage of ET at school. The teachers noticed that both teachers and students did not have enough ET skills to run the language lessons on time. The time spent for dealing with technical issues might take their teaching time and the time spent for preparing lessons with ET skills was also longer than without using ET which made them reluctant to use ET to teach. In addition, the teachers worried that ET could weaken students' learning skills. Their reading skills

were believed to be weaken as more time were spent on screen. The skills required other senses than seeing were not developed as well. Furthermore, some of them believed that the visual aid functions could cause students' eyes problems. They gave the example that 50% of the students in their class were short sighted which might be the result of looking at screen for too long. The last factor that limited the use of ET in language lesson is the limited number of some expensive ETs at the schools. The ETs were not available for the teachers to use when they needed them.

In terms of the teachers' experience of technological pedagogical decision making, their ET frequency of use, the language components which they taught, and their ways of delivering lessons with ET support revealed that the teachers were knowledgeable about the curriculum, teaching content, and basic functions of ET. They did not overuse ET in teaching but noticeably and purposely used less in term 1 of Grade 1 and Grade 5, when the focus of the curriculum was on practice or examination. They used more ET as a substitute in Grade 2, Grade 3, and Grade 4 as the focus of the curriculum was in language knowledge. Moreover, when they used ET, they were selective. They found that ET were particularly helpful in language components like vocabulary, letter writing, essay writing, and listening.

CHAPTER 6
PROFESSIONAL DEVELOPMENT ON THE USE OF EDUCATION TECHNOLOGY IN LANGUAGE TEACHING

6.1 Introduction

Chapter 6 report the findings from the qualitative data related to the language teachers' perception on their experiences of the teacher professional development (TPD) on ET integration activities that they received.

This chapter describes the sources of TPD available for the teachers in this research and how the teachers perceived the effectiveness of the TPD activities. This section contributes to answers for the second research question: "How do primary language teachers experience the educational technologies professional development activities in Vietnam?"

The themes in this section emerged from all the interviews with teachers, school technology coordinators, school principals, and from analysis of documents of Ministry of Education and of the schools.

This chapter is divided into two parts: the first part reports the language teachers' experiences on formal ET TPD activities, the second part reports their experiences on informal activities.

6.2 ET TPD provided by the DOET

From the responses to interview question six of six school principals and six school technology coordinators, it is agreed that there are two ways that the DOET organised ET TPD training, which were organising training courses and implementing "Teacher conferences".

The first way was to provide ICT training courses for teachers from schools within zones (i.e.schools belongs to the same district) one time per year. Each school nominated up to three key teachers who were senior or senior-to-be (i.e., teachers who will be appointed to be senior teachers in the future) to participate in these annual DOET-run courses. The teachers were funded by the DOET to participate in these courses. The courses took place in an education institution in the zone or area with training provided by experts from universities or other educational institutions. The duration of these annual courses ranged from one week to one

month, full-time. These courses were attended by a large number of teachers in zone. Trainers delivered lessons in lecture style together with individual or group work activities.

Generally, the senior or senior-to-be teachers who participated the ET TPD training courses, commented that the training topics were updated but theoretical and quite general, not as practical as they expected:

> Ba: I used to attend two courses. The content was contemporary but when it came to practice, there were not much that I could use in my language teaching.
>
> Ea: The topics covered in the training courses were about current issues or trends of using ET in teaching. I liked them; however, there should be more lessons to practice new technologies or programmes so that I could be more confident to apply in my teaching.

From Ba and Ea response, it can be seen that the TPD training was lack of specific practical topics and short of time for practicing for the participants. As they mentioned, the topics were about current technologies in the world, but they were not close to their daily teaching at schools, so they were not applicable. Moreover, the teachers thought that they needed more hands-on lessons to improve their skills of using the ET.

Most teachers commented about training methods of the TPD courses as follows:

> Ca: I think the classes were quite crowded. Trainers most of the time lectured to the whole class. We had little time to interact with trainers and practice. At the end of the course, I knew a lot more about ET using but I could not apply much.
>
> Ka: My class had around 60 teachers from different schools. Normally, we listened to trainers and did exercises. Sometimes I practised and I could not do the exercises, I wanted to asked trainers for help but they were busy with other participants as well.

Ca and Ka shared the same ideas with other interviewees that the class size in TPD training courses were so large that they had little chances to interact with experts. As a result, they were not very confident about what they learnt and there was not much that they could apply in their daily teaching.

In short, the first way that the DOET organised TPD was perceived as lack of practical skills and individual support from trainers. The content was more general and theoretical than specific and did not meet the participants' needs.

The second way that the DOET organised TPD was holding events called a "Teacher conference" (Hội thảo chuyên đề) in which representative teachers from each school within the same zone delivered an in-class lesson using PowerPoint. This lesson was observed and given feedback by a delegation of specialists from the DOET and representative leaders of different schools. They observed the lessons to judge and decide who presented the best. The event normally took place over one month during school time. Participation in the competition by teachers is voluntary and open to senior and senior-to-be teachers.

Some teachers in this research who used to participate in the teacher conference reported that they improved their performance of delivering lessons in their classrooms through preparing for the competition. Ma and Oa said:

> Ma: I prepared several months before each competition. But after each time delivering lessons in the competitions, I presented better in my daily practice. My lessons are better presented with more ways to illustrate the lessons' content.
>
> Oa: It took me a month or two to prepare for the presentation. But I have learned some more skills of presenting my lessons.

As Oa mentioned, to prepare for the presentation during the teacher conference, she had taken a lot of time beforehand to design her PowerPoint slides in which she had to include different teaching materials like images, videos, and texts. Preparing for the competition in this way meant that after the competitions, the teachers who presented lessons had acquired further ET skills and judged themselves teaching better in daily practice.

However, the teachers who never participated in such conference did not have opportunity to learn from the presentation. They did not learn from the competition as Ja, Sa and Ua reported:

> Ja: There were some competitions organised by the DOET, but I have never attended. I just heard about them.

> Sa: I have never participated in such competition. I just heard from my colleagues who won or not did not get a prize.
>
> Ua: I know each year there was competitions to select the most excellent teachers, but I have never had a chance to participate. I wish they could have shared with us after they won.

Teachers Ja, Sa, Ua had junior status in their school. They did not have any opportunity to participate like the senior or senior-to-be teachers. Moreover, school policy does not include the opportunity to share with teaching colleagues the presentations for the competition either before as part of a teacher's preparation or afterwards.

In short, the second way of organising TPD training courses by DOET helped the participants improve their teaching skills with ET support. However, only those attended got benefits, those who did not have any chance to attend conferences were not shared ET teaching experiences by their colleagues. Only some teachers were shared individually when they asked in person.

Overall, there are three themes relating to ET TPD accessibility, collaboration, and practicality of the TPD training courses organised by the DOET. First, the two ways that the DOET provided TPD for teachers were not accessible for all language teachers but just some of them. Second, there was little collaboration among teachers in the same school because those who participated in TPD training courses and teacher conferences did not officially share what they had learnt with other colleagues. Third, the TPD training content was reported that not practical and specific enough to meet the teachers' needs. Additionally, there was not enough interaction between trainers and participants so the participants felt that they did not get enough support from trainers, which made them not confident about applying what they learnt in their daily practice.

6.3 ET PD provided by the schools' board of management

Besides the ET PD training courses organised by the DOET, another formal TPD training courses held by the board of management (BoM) of the schools. In this research, the courses were organised annually for teachers of all subjects including the language teachers of this research. In Vietnamese context, these course were typically called Information Communication Technology (ICT) courses. The courses, normally held in one week during the summer holiday

break (in July or August), were compulsory TPD activities for all teachers at the school. Trainers were outside experts from universities or an educational institute. All participants were funded by the school to participate.

Commenting on the efficacy of the BoM TPD courses, most of the ideas of teachers in individual and group interviews said that the practicality of the courses was not as high as they had expected.

> Ba: When I attend ICT training courses I just listened and cannot apply what is being taught. There were many teachers in the class, the trainer could not care for all.
>
> Pa: The training method is not effective because time is limited. Teacher is...in general, I think for this ICT training, it should be one-to-one coaching or small group coaching. One facilitator and many teachers training is not effective.
>
> Na: There's theory lessons about ET only, not specific lessons. They show the theory and let teacher trainees self-explore. The course had dozens of participants in a big hall.
>
> Ga: Most of the training is just about theory of ET in general for a big group of teacher trainees. I think, for using ET, in order to be effective, there should be practice.

Teachers Ba, Na, Ga, and Pa mentioned about the large size of the BoM TPD classes that they experienced and that the practicality of the training content was limited. There were too many participants in one training course that made the teachers have little chance to interact with the trainers. The teachers found themselves passive in the courses and learnt a little. Moreover, Na and Ga mentioned that the courses they got were too general and theoretical about ET use. They needed more practice time and more specific examples so that they could apply using ET in their language teaching.

Followings are the only three positive feedbacks on these in-school training courses:

> Ea: The good point is there was experts, if we listen carefully, we will learn something such as designing lessons, audio file for listening lessons for students,

and how to use e-book. I applied right after being trained. For example, I was given an account, I applied and it helped.

Ja: Every year, there is a training course in summer, quite a long time. My colleagues in IT department share and answer questions by teachers who do not know how to solve. For examples, teachers may ask how to upload video or how to show images more effectively. I find this way of training is effective the most. One time, they train us how to create animations.

Oa: During summer holiday time, board of management invite IT experts to train us. When we were divided in groups, we can practice right away. I find it helpful.

Ea and Oa appreciated the chance to be trained by ET experts during the summer in-school TPD courses. They could learn well in smaller groups in the courses, and they could apply new knowledge on how to use ET in their teaching after being trained by the experts. In the summer training courses that Ja attended, her IT colleagues shared ideas and answered the teachers' questions.

In general, though there were some teachers perceived that the courses were effective, the majority of teachers in this research generally found school-based BoM TPD courses impractical because the training content was too theoretical and large class size that reduced chance to practice as well as to interact with trainers or experts. The next section will be the finding on how the teachers perceived the ET informal TPD activities.

6.4 Teachers' ET informal professional development activities

Alongside the official and annual ICT training courses held by the DOET and the schools' boards of management, the teachers in this research reported that they self-trained in order to improve their ability to use ET to teach their language lessons. There were a number of ways that these teachers undertook to improve their own knowledge and skills in using ET. Google, the world's most popular search engine, seemed to be the most popular tool these teachers used for seeking information. The following comments from Ba and Ra exemplify this preference:

> Da: I just googled and searched by typing such phrase like “How to use Screencast-O-Matic”. In some minutes, I know how to use the tool. I always help myself this way.
>
> Ra: I always self-explore. My colleagues and I know similar things. For anything difficult, internet helps better. I just used Google to search for information and materials. I could find tips to teach by utilise the ETs. It’s very convenient for me. I just need a laptop with internet connection to have the answers for my questions about using the ETs.

Clearly, teachers in this research proactively utilised Google and Internet resources to help themselves develop their own professional learning. Teacher Da used her information searching skill which is typing key phrases in Google search box to seek the way to use a specific ET to teach in classrooms. Ra also used her information searching skills to get techniques to integrate available ETs effectively in their teaching.

Another way that the teachers used for self-professional learning was Facebook. Facebook is the largest social network with 2.6 billion monthly active users worldwide as of the first quarter of 2020 (Clement, 2020). In Vietnam, Facebook is the most commonly used social media platform (Doan, 2020). Facebook offers the opportunities for users to join groups that share the common interests and concerns, and to gain skills and knowledge from other group members (Hall, 2019). Ma considered this a very useful tool for her professional development:

> Ma: I am a member of some Facebook groups for primary teachers and language teachers. Whenever I have a question, I've just posted on the page and many teachers commented and helped.

Other teachers interviewed in this research like Ba, Da, Sa also had joined groups and used the information from the group members who responded to their queries. As joining these groups, whenever they had any problems or questions relate to using ET to teach languages, they posted their questions in the group. Very quickly, there were many answers or comments from other group members who were also primary school teachers, which helped them to find out just-in-time answers or solutions.

Explaining how they used internet searching tools and Facebook to self-study, the teachers commented that they found self-learning the best way to improve their teaching:

> Ba: the most effective is self-training.…. I developed myself by search on internet. The materials I found were various and exactly what I need.
>
> Ca: I usually self-explore … Self-learning is effective. I can learn and get instructions anytime I need. Google is a great teacher. Its answers always satisfy me.
>
> Ia: …Learning from Facebook teachers in the Facebook groups for primary-school teachers. The teachers in the groups are enthusiastic. They provided detail answers and quickly. I find the groups effective.

Having access to self-study resources that these teachers needed through the internet or seeking for advice from colleagues in Facebook groups were two ways that teachers like Ia, Ba, and Ca applied individually to improve their professional learning in the area of ET. They found these two ways worked best for them as their specific need-to-know queries were answered comprehensively and in a timely way. More than formal TPD courses organised by the DOET or school BoM, it was self-learning, which met their needs and expectations for professional learning in the area of ET use for language teaching and learning.

In short, the teachers' experiences showed that the externally designed PD activities were more about theory than applicable skills. Some of the activities were beneficial for the language teachers. However, only some teachers found the training courses helpful, others found the courses too theoretical and not practical enough. Moreover, only a few and not all language teachers had chance to take part in the training courses provided by the DOET. Meanwhile, most of the teachers in this research shared the same idea that their professional was improved the best by informal TPD activities which were using Google searching tool and social media tool Facebook particularly Facebook groups. The tools helped them to acquire new knowledge and skills of using ET to teach on time and to meet their needs and expectations.

6.5 Chapter summary

This chapter has presented the following main findings about the language teachers' experiences about formal and informal ET TPD activities. The findings were gathered from the interviews with school principals, School technology coordinators, and language teachers and from documents analysis.

Regarding to formal ET TPD activities, three main themes were about the drawback of the training content, the collaboration among teachers in schools and the accessibility to the ET TPD courses. Firstly, the content of the training courses organised by both the DOET and the school BoM was too broad and theoretical. The teachers felt they did not receive practice exercises and there was shortage of practical content which they could apply on their daily practice. Secondly, the teachers' response revealed that there was no formal collaboration or experience sharing between the teachers who participated in DOET's ET TPD training courses or teacher conferences and the teachers who did not have chance to participate. Thirdly, the accessibility to ET TPD courses by the DOET was not equal for all teachers, just some teachers were assigned to participate and learnt from the ET TPD training courses. Fourthly, class size of both courses provided by the DOET and school BoM was over crowded, which reduced interacting between trainers and trainees.

Regarding the teachers' experiences on an informal way of ET TPD, all the teachers in this research commented similar ideas that their teaching knowledge and skills were enhanced significantly thanks to their own ways of learning. The ways included using Google searching tool and social media tool-Facebook, particularly Facebook groups. The tools helped them to acquire new knowledge and skills of using ET to teach on time and to meet their needs and expectations.

From the findings above, Chapter 7 continues to discuss them in line with the two research questions of this research.

CHAPTER 7
DISCUSSION

7.1 Introduction

This research was conducted in the Vietnamese context. Vietnam is a highly structured and hierarchical society with central government control. Citizens generally respect and support the government, and so do teachers in schools. The teachers in this research were from primary schools in a big city of Vietnam, they followed the government's and schools' instructions and guidelines of utilising ETs available in school in their language teaching (see Chapter 6). They even proactively bought their own laptops to serve their purpose of using ETs for teaching language lessons.

Internationally, the introduction of new technologies in educational settings is often rapid and technology used for education purposes receives attention from educational researchers. Models such as SAMR and TPACK (see section 2.3) have been developed to help describe and improve teachers' knowledge and practice with ET integration. Research looking at enablers and constraints in many contexts points to infrastructure and reliability issues concerned with the ET and professional development needs of teachers (Dong et al., 2020; Mahdum et al., 2019; Nikolopoulou, 2020; Xu & Zhu, 2020). In this research my focus was specifically on the experience of language teachers using technologies to teach languages to primary aged learners.

My experience as a facilitator of professional learning in the area of technology use for teaching and learning in a university setting for over three years led me to examine teachers' experiences of using educational technologies for teaching languages in Vietnamese primary schools and on their experience of support within school and professional development. Language teachers teaching L1 and foreign language classes participated in this research and provided the evidence analysed and presented in the previous three chapters. The aim of the research is to make recommendations to primary language teachers, primary school leaders, and policy makers.

This chapter discusses the findings presented in Chapter 4, Chapter 5 and Chapter 6 in light of the two research questions:

1. How do Vietnamese primary language teachers experience using educational technologies (ETs) to teach languages?
2. How do Vietnamese primary language teachers experience the ET teacher professional development activities?

To address these research questions, I will discuss the findings from the research undertaken in this project with regard to the Vietnam's information communication technologies (ICT) policies for education. This chapter consists of two main parts. The first part responds to the first research question. It begins with the teachers' productive experience of the available ET in the schools where they were teaching and how the teachers made judicious use of these ETs in their language teaching practice. This section closes with student and teacher factors that influenced the teachers' use of ETs for teaching languages. The second part addresses the second research question. This part is divided into the teachers' negative experiences of formal or formal ET teacher professional development and their positive experiences of informal teacher or informal teacher ET professional training that they engaged with. The chapter ends with a summary of all the discussion points.

Below is the discussion of the findings in response to the first research question.

7.2 Research Question 1: "How do Vietnamese primary language teachers experience using educational technologies (ETs) to teach languages?"

The teachers in this study utilised available ETs in their schools judiciously within their grammar-translation language teaching method and Computer Assisted Language Learning for predominantly substitution functions, substituting ETs for traditional tools. Also, these teachers recognised both beneficial and problematic factors or issues influencing their use of ET in their language teaching practice. These factors included teacher factors and student factors. The following section is going to discuss teachers' experiences with these two factors.

7.2.1 Teachers' judicious use of available educational technologies

The teachers participating in this research taught languages using essentially a grammar-translation method and utilising operational ET that were available to them. The ETs were used to substitute for traditional teaching tools. Most of their lessons (e.g., vocabulary, grammar, and comprehension) followed the same process or sequence of activities: teacher instruction, student

practice and then application of learning (see section 5.3.2). This theme agrees with previous studies that grammar-translation method is still in use in all levels of education, from primary schools (Wu & Wang, 2015), secondary school (Li , 2014) and tertiary levels (Bikowski, 2018) with such ET like OHPs and computer programmes, which promotes drilling and practice.

This method is still popular and seems to be effective because the nature of grammar-translation method concurs with the Confucian concept in the Vietnamese education system and context. To be more specific, grammar-translation method of language teaching, a teacher-centred method, is a deductive teaching method (Richard & Rodgers, 2014). Teachers provide students with rules and then let students practise the rules through drilling activities. This is an approach that comes under behaviourism learning theory and in this research, teachers used ET to provide drill and skills exercises (see section 2.2). This could be argued as an appropriate approach in a Vietnamese context for the following reasons. As mentioned in 1.2.1, Vietnamese people in general and Vietnamese teachers and students in particular have been influenced by Confucian concepts in which teachers are dominant and control all activities in classrooms, and students are obedient and just follow teachers' instructions. So, teacher-centred approach also follows this format.

Additionally, Vietnam education context including the assessment and the classroom setting also support the teacher-centred approach. Firstly, the primary language assessment is paper-based (section 1.2.3) which requires students to remember vocabulary, language structures and rules for tests, rather than for communicative purposes. Teaching for this type of test means that not many communicative classroom activities are needed. Teachers just need to provide students with structures and drill and skill exercises to practice in classrooms. Secondly, the primary-school classrooms' setting with fixed tables and chairs and limited space for moving around the class (see section 1.2.3) limits communicative activities such as group work and discussion. In this classroom (Figure 4), there was a "stage" in front of the class with a teacher table on one side and a board in the middle as an OHP screen to display e-lessons. Such an arrangement is ideal for lecturing style where teachers present and students listen. For the two reasons above, it is understandable that a teacher-centred approach is widely used among primary-school language teachers. Details of how the teachers utilised ETs are discussed below.

Utilising operational ET available

Most of the language teachers in this research frequently integrated a range of ET available, including hardware (laptops, smartphones, overhead projectors), and software (Word, and PowerPoint) across different language components in their lessons. The ETs were used to show video, games, and lesson contents. However, they did not frequently used some costly ETs like interactive whiteboard (IWB) and visualisers (See Chapter 4 and 5). The reasons for the teachers' frequently utilising of these ET were found in 5.2.1 including four factors, which were ET's convenience (portability, accessibility, ease of use, ease of access to resources, and reducing time and effort of teachers), ET's multi-media capabilities, student engagement, and teacher confidence their self-professional development.

On the one hand, most of the ET that the language teachers in this research used are similar to what teachers in other contexts used. For instance, Warschauer and Meskill (2000) observed that American teachers used OHPs as supplements for blackboards in their language teaching and considered the ET an excellent alternative in teacher-centred classrooms. In addition, primary school teachers in Turkey used PowerPoint in almost every aspect of language teaching (Özerol, 2009). The teachers also used computers with an internet connection to search for teaching materials. As well, comparable to the teachers in this research, the teachers in Turkey used OHP to display their lesson contents which were prepared in Word and PowerPoint. Similarly, primary school teachers in Bangladesh, a South Asian country, used comparable ET to teach four language skills (listening, speaking, reading, and writing), pronunciation, and vocabulary (Parvin & Salam, 2015).

On the other hand, other ETs, such as videos used in this study, were not used in the same way as in literature. Some of the content of the videos used by the Vietnamese language teachers in this research was not about authentic conversations or language situations as in studies by Morat & Abidin (2011) but about subjects or phenomenon such as a rain or a storm. This means the teachers provided language structures, and the videos were the contents about which the students would use the language structures provided to describe or to do a task. So, the use of videos in this study was not for authentic language as in literature. It might because Vietnamese is their mother tongue, so authentic language is available in their daily lives. As a result, videos just helped to provide students with more input for language use.

Moreover, the quantity of ET that the Vietnamese teachers in this research employed was limited compared to primary-school teachers across a broad range of international settings. As shown in 4.3.1, eight types of ET were available to the teachers in this research. They were laptops, smartphones, CD players, OHPs, IWBs, TVs, visualisers (or document cameras), and computers. Meanwhile, primary-school teachers in other countries used 21 types of ET in their classrooms including laptops (Shadiev & Yang, 2020). The 21 types of ET currently used in language classrooms internationally ranges from complicated machines or equipment to simple online programmes. Robots, VR, AR, and wearable devices are complicated machines or equipment. These machines and equipment are expensive as well. Besides, other ETs are less complicated and are online based programmes such as online games, online video, collaborate writing tools, corpus, automated feedback, websites, speech recognition, eBooks, eDictionary, intelligent tutoring system, voice recording, digital library, learning management system.

ET availability for language teaching is likely determined by the financial ability of the Vietnamese government, the school, and the teachers themselves. Vietnam is a lower-middle income country. Since 2016, the Vietnamese government has tried its best to provide schools with the basic ETs (computers, OHPs, and Wi-Fi access) to support technology enhanced teaching and learning in general, not specifically for language teaching (Phạm, 2016a). Some schools in this research have tried to equip their classrooms with expensive ET such as Interactive whiteboard and visualisers, but then once purchased, these (predominantly teacher use) ETs may not be used for long because the school could not afford the maintenance fee due to limited financial resources. As well as the centrally provided ETs or specific school-supplied ETs, almost all of the teachers in this research had personal devices such as laptops or smart phones that they used as part of their teaching at times (section 4.3.1). Usually, this use had come through considerable personal investment by the teachers themselves.

Regarding the teachers' ability to afford the ET, they have done their best to own a laptop to support their teaching within their limited income. Though the monthly income of primary school teachers ranges from USD 152 to USD 438 (Phạm, 2021), and the average price for the most popular laptop such as HP laptop at the time of this research in 2018 in Vietnam was $450 (Adedokun-Shittu & Shittu, 2014), the teachers in this research still bought one for themselves. The fact that each teacher bought a laptop that cost more than the highest range of their monthly

income means that the Vietnamese language teachers in this research made a personal and professional investment best to enhance their ET capacity for their teaching with their classes and to provide quality language teaching to support the direction of the Vietnamese government.

Overall, although the teachers in this research had access to limited types of ET, they still utilised the ET in most of their lessons most of the time. This reveals two positive aspects relating to the teachers and the Vietnamese government. Firstly, the teachers in this research supported the government's direction on using ET to teach languages and were proactive in ET use. Secondly, the Vietnamese government did their best to provide enough some types of ETs for schools and teachers. However, the Vietnamese government needs a longer vision and a more strategic plan when investing in an expensive ET like IWB and visualisers to avoid wasting money and time. It can be seen that the teachers utilised most of the time all available cheaper ETs. To continue, the next part discusses the teachers' lived experience on utilising the available ETs as a substitute for traditional tools.

Using ET as a substitute for traditional tools

The teachers in this research utilised the basic functions of available ET as a substitute for other methods. They used ET to prepare lessons and deliver their language lessons in classrooms (see 5.3.1). Specifically, they used their laptops to store all teaching materials such as lesson plans, audio files, video files, and photos, instead of finding physical places to store all their teaching materials which were real objects or printed documents. Then, they used Word processing for planning their language lessons, unlike in the past, when they used pen and paper media to write their lesson plans. Furthermore, they used OHP to show their language lessons prepared in PowerPoint. Instead of using printed textbooks, they copied language lessons into PowerPoint slides and showed them the whole class. Besides, they also used visualisers to display the content of their lessons or to show the real pictures of objects to the whole class instead of using chalk and board. In addition, the teachers also used Google to search for teaching materials, including images, audio files, and video files (see 6.4). Online teaching materials were used to replace traditional materials such as real objects and posters. In general, the teachers' level of ET application in this research is substitution according to SAMR model, which means "technology acts as a direct tool substitute, with no functional change." (Bagila et al., 2019; Dwiono et al., 2018; Parvin & Salam, 2015; Puentedura, 2010).

This finding, that the teachers used the ET with similar pedagogical practices as before having ET, is in agreement with previous studies which have also suggested that language teachers mainly used the basic functions of ETs in their teaching. For instance, in the study by Parvin and Salam (2015), language teachers of grade four in Bangladesh were observed to use laptops to store their audio and visual teaching materials. In addition, the teachers used projectors to show the e-content to the whole class. Or the study by Dwiono et al. (2018) found that most of the English language teachers in an Indonesian university were using ETs at substitution level. They used basic features of Word to type their lesson plans, and they used PowerPoint to prepare their lessons to present in class by OHP. These ways of integrating ET in the classroom are to substitute the use of blackboards and printed textbooks without any changing or improving the ET's functions. Another example is Bagila et al. (2019) study with elementary school teachers of Kazakhstan who taught Kazakhstan language in their schools. The language teachers in this research used basic functions of various types of ET without any functional change. They used many kinds of audio-visual technologies such as on-screen learning tools (film-strip, epi-objects), or sonic learning tools (disc, tape, tape recorder) in their language lessons to present lessons in their classrooms. The researchers concluded positively that the students' cognitive activity, creativeness and logical thinking were improved. So, it can be seen that, until recent, incorporating ET in language teaching as a substitution is quite popular in language lesson classes, particularly in similar countries to Vietnam, that is with strong central government control and or relatively low income.

One of the reasons that the teachers do not go beyond substitution level might be that this is a way to save time to meet the curriculum requirements. As mentioned in section 1.2.3, the curriculum of Vietnam primary education is textbook-driven (Hoàng, 2018b), which means textbooks are the main source of content for classroom teaching and learning. Language subjects including Vietnamese and foreign languages are not exceptional. Language assessment is summative in nature with paper-based tests including assessing vocabulary, grammar, reading comprehension, and listening (see section 1.2.3). In addition, the amount of language knowledge and skill required in a 35-minute lesson is significant. Furthermore, the language teachers in this research are full-time teaching and doing administration work. Hence, just copying the lesson on textbooks and pasting on PowerPoint slides to display for the whole class might be the most convenient way for them to save their time when they were still able to deliver all the language

knowledge and skills instruction required in a lesson. Creating more materials or activities for more active learning would take them much more time.

Since 2001, the VMOET centrally managed the e-lesson teaching resources by creating an e-lesson store for all primary schools teachers of all subjects (Nguyễn, 2001). This way of resource management did help to save teachers' time of lesson planning; however, e-lessons in the store were designed in lecturing style, which still results in the use of ET in their lessons at substitution level of SAMR model.

Having discussed the teachers' use of ETs as substitution for traditional tools, the next section is going to examine the teaching approach with ET integration that the teachers apply.

Using teacher-centred approach with ET integration

In terms of the teachers' experience on teaching approach with ET in language classroom, findings in 5.3 show that the teachers led the whole language lessons from the beginning to the end; in other words, the lessons were teacher-centred. The teachers used PowerPoint slides to present the lesson content for the whole class. The slides showed the tasks that students had to do, such as what questions to answer, and how to carry out a task-pair work or group work. Although these teachers made some use of pair or group activities there was limited use of scenarios and attempts at natural conversations as used in communicative language teaching (CLT) methods. However, these teachers did design some lessons to connect students emotionally and imaginatively with the language of study. For example, in writing lessons they used sound recording of rain to draw the students into the experience of rain for them to write about rainy weather.

The method that these language teachers used can be classified under the teacher-centred method and necessitates the use of ET because this practice experience resonates with studies about integrating ET in language teaching before 2015. Kirkland (2014) claimed that the SAMR model focused on the level of learner engagement in their studying. The lower the level, the less active students in each learning task with ET integration, the more teacher-centred in classroom teaching. For example, in Taiwanese primary schools, English language teachers were observed using ET for displaying information, instruction, and learning content. The interaction in class was between the teachers and the whole class rather than among students (Wu & Wang, 2015). This result was also confirmed in the research conducted by Xiao et al. (2011), and Li (2014) in

secondary schools in China. They found that the teachers in their studies used Word and PowerPoint to embed images, audio, and video files to prepare lessons and display their lessons in English language classes. Instructional delivery was mainly by teachers. They led the whole process by presenting the lesson contents, giving instructions to students, and telling their students what to do. The teachers in these studies were the main source of language input in classrooms.

However, the international education trend is shifting from teacher-centred approach to student-centred approach (Chua et al., 2021; Kennedy, 2006). Student-centred approach shifts the instruction focus from teachers to students, thus, teachers' role is as facilitators, students are more autonomous and actively participating in individual, pair or group work in classrooms (Jones, 2007). Following this trend, since 2008, the VMOET has been promoting student-centred learning in language teaching assisted with technologies (Vietnam Ministry of Education and Training, 2008). The above teaching approach contradicts the policy of VMOET in two aspects- the type classroom activities, and the roles of teachers and students.

According to the VMOET, students are the centre of classroom activities in four aspects: (i) organising communication activities, (ii) interaction models, (iii) teaching content, and (iv) teaching procedure. In organising communication activities, students are assigned to work individually, in pairs, and in groups. Interaction models in student-centred approaches are flexible and varied: students-documents (audio or video), students-teachers, and students-students. In teaching content, the lesson contents are co-constructed by both teachers and students. Teaching procedures are composed of three stages: pre-teaching organisation, during the teaching experience, and post-teaching. In all stages, students are to communicate with each other to carry out a task.

However, the classroom activities that the teachers in this research organised did not follow the four characteristics above. The activities in classroom were not organised in communicative approach with pair or group work, but mainly individual work. Students were given explicit instructions and they did what the teachers told them to do. For example, in a reading comprehension lesson, teachers let students read a text and then required them to answer questions relating to the text. Students think and answer by themselves, without discussing with their peers. This characteristic is opposed to the student-centred approach which requires

students have some input into the lesson and might work individually, in pairs, and in groups to construct their own knowledge. Next, the model of interaction in the language lessons of this study was limited to teachers-students and students-documents (textbooks or slides shown on OHPs). As well, lesson contents in this research were from textbooks and provided by the language teachers. Unlike student-centred approach, both teachers and students contribute the lesson contents during the lessons. Finally, the teaching procedure of the language teachers in this research were mainly teachers' presentation, students just responded passively, while in student-centred approach, teachers communicate with students regarding the nature of the lesson and students communicate with students at various stages throughout the lesson.

Regarding the roles of teachers and students in the student-centred approach as required by the VMOET policy (Hai & Nguyen, 2020) contradict the roles of teachers and students in this research. In a student-centred approach, teachers have two main roles: creating opportunities for students to communicate with their peers or their groups, and a participant in teaching-learning group who contribute ideas and provide suggestions or feedback for students in group (Hoàng, 2007). Hence, students in a student-centred class are active in the language learning. However, in this research, the roles of language teachers were the ones who request students do language exercises and the main source of knowledge in classrooms. The students stayed on their seats, listened to teachers' knowledge and instructions

There might be three reasons why the teachers in this research mainly apply teacher-centred method with ETs integration: historical reasons, the affordances of the available ET, and classroom factors. The historical reason is that the teachers taught the way they were taught. Their past experiences had an influential impact on their teaching style (Oleson & Hora, 2014). The teachers in this research range from 20-55 years old (see Chapter 4), which means they were born from 1970 to 1996. The teachers born in these times were educated by their teachers who were born in colonised time, before 1954, French colonisation period, and were heavily influenced by Confucian conception of education (see section 1.2.1). The teacher educators in this time were considered as "guru", the best source of knowledge who delivered knowledge and skills of the lesson by structural exercises. In other words, the teachers in this study were trained by teacher-centred method when they were at schools and universities. Their teachers delivered contents of the lesson and requested students to response. Students passively participate in the

lesson by taking note what teachers told them and followed the teachers' instructions. Thus, the teachers in this research might tend to apply the teacher-centred method in their language teaching practice with ET integration.

Teacher-centred classroom interactions come under the umbrella of behaviourism and a part of cognitivism learning theories (section 2.2). Although these teachers did not comment using theoretical terms, analysis of their lesson plans, e-lessons, and their interview response indicates their language teaching methods with ET integration are influenced by behaviourist and a part of cognitivist perspectives. More specifically, as mentioned in section 2.2, behaviourist believes that learning is caused by external stimuli and learning achievement can be scientifically observed. This helps explain why the teachers used ET as substitutions for traditional tools to present knowledge to students, and still dominated classroom activities.

Additionally, the teaching method applied by the participant teachers are partially impacted by cognitivist theory because the e-lessons that the teachers used shows that the teachers were aware of the mind's internal process that Piaget suggested "memory, thinking, reflection, abstraction, motivation and metacognition" (Alley, 2008, section 2.2-Cognitivism). In the learning process, students linked the new information to schema, or what they already knew. Based on this understanding, the teachers used ET to show more authentic materials such as images, videos, and spent some time for pair or group work for students to memorise, to think, to reflect, to self-imagine and to be motivated. Yet, the teaching method used does not reflect the metacognition stage because there are no activities for students to recognise their own thinking, just games to check students' memory or comprehension in each lesson (section 5.3.2).

Figure 24: Process of learners' internal minds

Note: (Ally, 2008)

Figure 24 illustrates a learning process suggested by constructivist learning theories. The blue arrows present the stages that the teachers' teaching activities were at. The orange arrow is the stage that has not been recognised from the teachers' experiences. This has implications for

future language teacher's practice, for school BOM, and policy makers, which I will come back to later in section 8.4.

In terms of the perceived ET affordances reason shown in finding 4.3.1 and 5.3, the teachers were aware of two types of affordances that ETs offer for language teaching and learning. Firstly, the ET available at the schools had aesthetic affordances. This meant that the attractive design and appearance of the interface satisfies and holds attention of primary school learners explicitly to particular components, such as writing alphabet and vocabulary. By utilising these affordances, language teachers could present their lessons' content for long and maintain students' engagement. Secondly, the ET had temporal affordances, which meant such ETs like laptops and smartphones with internet connection, could be used to access teaching resources anytime, anywhere and could record and playback any lesson. These temporal affordances saved teachers' time because they could reuse the lessons that they presented. These two types of ET affordances support well the classroom factors discussed below.

In terms of classroom factors that affected their teaching approaches with ET, there were the physical classroom arrangement, class size, and the curriculum requirements on language assessment. Regarding classroom arrangement, all classrooms in six schools of this research had pre-arranged tables and chairs with five to six rows, and each row had four tables and chairs. There were only limited access ways between rows and space designated like a "stage" in front of the class. In this space, there was an evidence of one black board, one OHP, one computer, and a screen placed in front of the class (see Figure 4). In this setting, there were some constraints regarding the lack of ease of movement.

Additionally, class size or the number of students in each classroom, which ranged up to 60 students per class (Bich, 2018), can also be a factor that contributes to the application of teacher-centred approach when the teachers used ET in language lessons. It could take much more time to carry out group work activities in comparison with presenting to the whole class, and assigning work to students. This class size is typical for Vietnamese primary schools in urban and crowded areas of Vietnam, but exceeds the policy recommendation of 35 students per class (V. H. Nguyễn, 2018). This represents a fundamental tension between policy and practice that, from the teachers' perspective, the crowded class size was limiting their practice and hence, implicitly, influencing the teaching method.

Though there is no consensus in the literature on the best class size for primary school, there is a wide agreement that the more students in a class, the less student-centred the pedagogy is, and the more teacher-centred it is (Blatchford, Russell, Bassett, Brown, & Martin, 2007). Blatchford et al., (2007) found out that UK primary teachers could hardly find any time to interact with their students individually or in small group in their large classes of over 30 students, but most of the time the teachers had to teach larger group or the whole class. In another study, Blatchford et. al (2008) found that the instructions were more teacher-directed in larger class and the lessons were more structured. These findings are in line with other studies which indicated that teaching method in larger class size was more teacher-centred than student-centred (Blatchford, 2003; Hirsh-Pasek et al., 2004; Smith & Glass, 1980). Furthermore, the final assessment for language subjects is paper-based without any communicative tasks, so presenting lesson content to the whole class would help students to prepare for their tests.

In brief, while in policy, Vietnamese teachers were expected to use communicative language teaching (CLT) and student-centred methods when using ET in language teaching (Phạm & Nguyễn, 2020), in reality, the teachers in this research used a teacher-centred approach. Their teaching approach was based on their previous experiences as learners, their restricted knowledge of the affordances of available ET, and their utilisation of current classrooms' settings. After investigating the teachers' experiences on utilising available ET wisely and proactively to support the Vietnam government's directions on using ET in teaching, it is crucial to continue discussing their perceptions of factors that had influence on their ET use in the next section.

7.2.2 Influential factors on the teacher's use of ET in language teaching

The teachers in this study also perceived that their use of ET in teaching was influenced by factors relating to students and to themselves. These factors could either motivate or demotivate their use of ET. The following section will examine the factors in two categories-student factors and teacher factors.

Student factors

The language teachers' experiences indicated three student factors impacted the teachers' ET use. The three factors, student engagement with learning when using ET, students' study skills,

and students' health issues, specifically concerns about eyesight, are going to be discussed below.

Student engagement

The teachers felt motivated to use ETs in their lessons because they understood that student engagement is enhanced. Students in their language classes were perceived to be happy learning and maintaining their focus longer. Subsequently, these students seemed to acquire and comprehended new language knowledge quicker when ETs were used. For example, the teachers reported that, with visual aids, the students understood the meaning of new vocabulary faster (see section 5.2.1.3). Also, the teachers perceived that the students could correct their writing mistakes more quickly because they were able to see and learn from their peers' work, which was displayed by a visualiser to the whole class. In general, the teachers in this research perceived some positive emotional engagement of their students as a motivating factor for them to adopt ET in teaching.

These teachers' perceptions focused on how students behaved, felt, and thought, which echoed some previous studies on students' positive engagement in English as a foreign language classrooms such as Houcine (2011) and Mullamaa (2010). The lecturers in these studies felt encouraged to integrate ET because they perceived their students were more motivated and engaged in learning the language.

There are three types of learner engagement which are behavioural, cognitive, and emotional (Zhang, 2020). Behavioural engagement is the active participation of students in the process of learning. Signs of behavioural engagement include that they are always on time, complete their homework, and prepare materials needed for their class. Behaviourally engaged students also follow their teachers' instructions and fully participate in class activities with their best effort. Cognitive engagement relates to students' attention and active queries in class. These students are focused in class lessons and try to learn as much as they can. Cognitively engaged students ask questions and do more than what teachers request them to do. Emotional engagement is when students behave toward teachers and their peers in a positive manner and with respect.

In this research, the students were observed to have behavioural engagement, which is following teachers' instructions all the time, receiving knowledge from teachers. The students in this research were in a passive role in language lessons with ET integration. While in Europe, the

students were found to have cognitive engagement, which is being active to question teachers and peers, to self-study, to collaborate with other students, and even become creative learners in their study (Isisag, 2012; Mullamaa, 2010).

Student engagement in these different contexts can be related to the level of use of ET by the teachers according to SAMR framework. On the one hand (discussed in 7.2.2.1 and 7.2.2.2), primary school language teachers in this research used ET as a substitute for traditional methods with no changes to the function in language teaching and learning. For example, the teachers used an OHP or visualiser instead of using printed textbooks or 'chalk and board' to present the lesson. Additionally, their approach of teaching with ET remains teacher-directed, which means the teacher's role in the class is a lecturer, who leads the whole process of learning in the classroom. In the teacher-centred classroom, the students' role is to be compliant, directed and receive information. The student in the language classes in this research were instructed what to do and what knowledge they would learn. That is why the students were observed by teachers as being in a passive role. On the other hand, ET used in higher education in Europe was at modification level of the SAMR model (Mullamaa, 2010), which means there was notable task redesign in order for students to have a chance to work in groups, and collaborate with their classmates to construct their own learning. The students in a teacher's class who is using ET at the modification level of the SAMR model play an active role in the lesson. The teacher's role is the facilitator, who plans, gives guidance, and manages the class activities with ET use to achieve the lesson's goal.

Moreover, in other studies, the teachers reported that they were motivated to use ET when they observed the improvement of their students' cognitive engagement, which related to students' habits and skills (Fredricks et al., 2004). For illustration, Dang (2013), whose research involved Vietnamese tertiary language teachers, suggested that one of the enablers for teachers to use ETs was the improvement of students' autonomous learning. The teachers in his study tended to use ET more as they perceived their students having habits of self-learning and making their own decision in each class activity. The teachers were also motivated as seeing that their students having mastered skills to work individually, in pairs or in groups. This finding is in line with other studies with Greek and Indonesian tertiary teachers (Mahdum et al., 2019; Nikolopoulou,

2020). The teachers were eager to use ET in their language lessons as their students were found to be more active in such classes.

The difference in perceived engagement factors that motivate teachers' use of ET might be explained by the education level that the teachers working at. The teachers in this research taught languages to primary students whose engagement was more behavioural, while the teachers in reviewed literature taught higher level students including secondary and tertiary students whose engagement was more cognitive. In short, the experience of the teachers in this research reflects the active teacher-centred role of language teachers as using ET in classroom and their students' passive roles.

Students' study skill

The teachers in this research showed their concerns about students' skills of some language components, namely reading, speaking, writing. The teachers worried that their students lost interest and patience for reading stories or texts in printed books because they were more attracted to ETs such as videos and games (section 5.2.2). As students read less, watched and listened more, they had less range of vocabulary and less common words; thus, they could not use a wide range of vocabulary in their speaking and writing lessons. This add more knowledge to the literature, which showed that students' reading, speaking and writing skills were facilitated (Dillenbourg & Evans, 2011; Huang, 2021; Mills, 2010; Parker & Chao, 2007). Unlike the literature, ETs helps students at earlier stage of learning such as brainstorming and initiating ideas (Dillenbourg & Evans, 2011; Huang, 2021), the teachers in this research worried that ETs may have negative influence on students' ability to produce longer and more complex ideas in speaking and writing components due to getting used to passive listening to and watching lessons.

The concerns about students' skills are teachers' personal viewpoints. However, it is clear that though there are numerous studies on ETs' affordances or advantages on teaching a range of subjects in curriculum (Adkins, 2018; Calder et al., 2018; Calder & Murphy, 2018; Chen et al., 2019; Huang, 2021) (see section 2.4), there are hardly any studies about negative impacts of ETs on students regarding their reading interest and concentration, as well as their productive skills (speaking and writing) with longer and more complex expressions. The implication for practice will be mentioned in Chapter 8.

Students' health

Regarding student's health, the teachers recognised that the number of students wearing prescription glasses was high (50% of the students in their classes) and was increasing. All the teachers interviewed in this research assumed that it was because of the time the students looked at the screen to watch video or play game in class and at home was too much. In brief, as using ETs in their language lesson, the language teachers in this research cared about not only learning ability of the students but also students' health.

Although previous studies mentioned similar multiple factors hindering the teachers' ET usage, no studies indicated students' health factors as a hindrance in this research. For illustration, Nhu, Keong, and Wah (2018) carried out a research on using ET of primary-school teachers in schools which were located in the middle and highland of Vietnam. They identified three challenging factors towards the ET integration: teachers' low ET competency, limited availability of the ETs, and the shortage of IT support. Another research in Negara Brunei Darrussalam secondary education by Salleh and Laxman (2014) discovered that factors that influenced 1,891 Brunei secondary teachers' use of ET were their attitude, social norm and control factors. Attitude towards the behaviour factor is a personal factor related to a favourable or unfavourable judgement of the particular behaviour. Teachers' attitude towards technology has positive relationship with their intention to use ET. Subjective norm is a social factor that refers to a perceived social stress to show or not show a behaviour. Perceived behavioural control refers to the recognised simplicity or trouble of showing a behaviour. Dang (2011), in his study with Vietnamese university teachers, found the main barricade to the teachers' use of ICT was the lack of ETs, greater workload for teachers, and insufficient information about the rationale for employing ETs.

The downsides of technology use, including concerns for students health are increasingly the subject of research and media attention (Meates, 2021). This attention generally focuses on the impact of high screen use indicating that further research in educational settings is needed.

In short, three student factors namely their engagement, study skills, and health care were perceived as factors that encourage or discourage the teachers to use ETs in language teaching. While the students behaviour engagement were perceived to motivate the teachers to use ETs to

support their language teaching in classroom, students' skill maintenance or development and their healthcare issues were factors that could hinder teachers' ET integration.

Teacher factors

The teachers in this study not only perceived student factors as influencing their decision-making regarding ET use for their language lessons but also recognised that teachers themselves brought factors that impacted their ET integration.

Teachers' TPACK

Two components of teachers' TPACK, PCK and TK, are going to be discussed.

Teachers' PCK

As mentioned in section 2.3, PCK is specialised professional knowledge for teachers, which makes teachers teaching process experts rather than just content knowledge experts (Park & Oliver, 2008). More specifically, PCK is "the capacity of the teacher to transform the content knowledge he or she possesses into forms that are pedagogically powerful and yet adaptive to the variations in ability and backgrounds presented by the students" (Shulman, 1987, p. 15). Over time, PCK concepts have been extended covering teachers' knowledge of curriculum (what and when to teach); knowledge of assessment (why, what and how to assess); knowledge of students' understanding; and knowledge of instructional strategies.

In this research, the teachers had PCK of the language that they were teaching, for illustration, they displayed their vocabulary lesson content by visual function of the available ETs to the whole class because they recognised that the students seemed to be motivated and learn vocabulary more readily with high quality illustrations (see section 5). These Vietnamese teachers understood that language subjects were test oriented and the test was paper-based (see section 1.2.2), so they used ET games designed to reflect the paper-based language test in that they were in multiple-choice-question form for each student to check their own memories (see section 5.3.2), not for students to interact with others. In this way, the teachers sought to manage the amount of subject knowledge delivered to their students during limited class time. They used ET as substitution tools to present knowledge only and they employed a teacher-centred approach in their language classes, not a more student centred CLT approach. A strong influencing factor on these language teachers' decisions about the substitution level of ET

application in their classes was their knowledge of language acquisition, the language subject's assessment, and language pedagogy.

Teachers' TK

Technological knowledge (TK) is knowledge and skills about technologies from standard to advanced technologies (Mishra & Koehler, 2006). Teachers' technological knowledge is their general understanding of technologies and how to operate particular technologies such as how to operate a system, hardware, a web-browser, apps, and word processors. This knowledge also incorporates basic knowledge and skills on being up to date about new technologies, installing and improving hardware/software, and storing data.

The language teachers in this research raised three technological knowledge (TK) issues when adopting ET to teach in class. The first issue related to TK was that not all language teachers in this research had the basic knowledge of how to operate the new ET in their school (e.g., interactive whiteboards). As a result, those teachers indicated that they were worried that they may harm the expensive ET, and reduce the ET life. The second TK-related issue was that the older teachers recognised that they found it hard to acquire and retain the knowledge and skills of operating or functioning technology or apps. So, they were hesitant to integrate ET more fully into their teaching. The last TK related issue was that because of not being skillful in using the available ET, some teachers found out that ET integration took them a considerable amount of time in lesson planning and class management. It can be seen that, the three TK concerns including shortage of basic knowledge, teachers' experience, and familiarity with the ET were aspects that contributed to some teachers being more hesitant compared to others in their ET integration in their classrooms.

The three TK issues above echo previous studies. In terms of the lack of basic ET knowledge, Wu and Wang (2015) examined 22 English language teachers at Taiwanese primary school level to see what components influence these teachers' use of ET in teaching. Findings revealed that these teachers perceived TK as the weakest component among the seven components of TPACK (Wu & Wang, 2015). Hew and Brush (2007), in the study that analysed empirical studies of technology integration in K-12 schools of US and some other countries since 1997 to 2006 found that the lack of teachers' TK and lack of efficacy and competence led to the hesitation to use technology in the classroom. Similarly, the teachers' self-efficacy due to limited TK was also

concluded by Mac Callum and Jeffrey (2014), and Dong et al. (2020) as a significant factor that affected the adoption of new technologies in teaching.

Limited TK due to teachers' age was also a hindering factor of using ET for older teachers in Hsu et al.'s (2017) and Cheng's (2017) study. In these two studies, primary and secondary older teachers in Taiwanese schools perceived themselves having lower self-efficacy of TK (Hsu et al., 2017) and less confidence in dealing with technical issues of ET (Cheng, 2017). Time was also main perceived barrier to using ET for the teachers in the Mid-Atlantic region of the United States (Regan et al., 2019). According to the primary US teachers, to plan a creative lesson with the help of ET took more time and they could not plan such creative lessons. They also mentioned ET took time because there were so many resources online, they were overwhelmed which resulted in taking their time to select teaching materials for their lessons.

While some older teachers in this study perceived they had limited TK on how to operate and how to deal with ET's problem and that this was hindering them from using ET, teachers' TK on ET's multi-media affordances were perceived as an enhancing factor in their language teaching, specifically the teaching of different language components such as vocabulary, writing, and listening. The multi-media capabilities of ET include both visual and audio aspects. Similar to the finding in this research, Bostancıoğlu and Handley (2018) determined that multimedia technologies enabled images and sound usage which enhanced students vocabulary learning. For example, a word's pronunciation could be demonstrated by audio-visual speech synthesis or video 'talking heads' instead of teacher demonstrations and vowel charts. Students preferred working directly with ET to interacting only with teachers because they felt they were not judged as they were learning pronunciation (Handley, 2009). The teachers in this study were experiencing this positive benefit of ETs in their classrooms, so they used ET more in the lessons with language components such as vocabulary, writing, and listening.

Teachers' workload

The teachers in this research perceived workload as a factor that influenced their ET integration in teaching. The term "teachers' workload" refers to the amount of teachers' work or working time formally expected by the teachers' employers. According to the evidence in this research (finding in section 5.2), these language teachers presented two contradictory views. On the one hand, the teachers said they used ET frequently because ETs assisted them to work more

effectively with less effort. On the other hand, generally older teachers commented that they felt reluctant to integrate ET in their lesson because it was time-consuming to teach and prepare a lesson with ET integration.

Those teachers said that they used ET in their teaching because ET allowed them to work more effectively with less effort due to three ET features and affordances. One feature is the resource reusability of the ET. ETs assisted the teachers to record their lessons so that they could reuse resources, which helped them to save time and energy as they would only need to replay the file when they taught the lesson again. Another feature is that, ETs, such as web browsers, provide quick accessibility to resources, which allowed teachers to get access to various resources in different formats (image, audio, and video). Third feature in the effective management of resources and the ease of storage when the teachers utilised ET motivated the teachers to apply ET in their teaching. They did not have to find physical places to store their teaching materials as in the past. They just had to store all of their materials in the laptop. In general, their experience shows that the teachers' TK of positive features of available ET motivated them to use ET in their language teaching.

Older teachers in this research commented that they hesitated to use ET in teaching because it created more work for them and was time-consuming. When using ET in classroom, they were slow at using technologies, and whenever there were technical issues, it took them long time to seek help from IT staff. Then, in the articulated perceptions of some participants, it took them at least three times more than actual teaching time to prepare their e-lessons in which there were ETs used.

The idea that integrating ETs within teaching is time consuming matched those observations in earlier studies but were distinct due to the justification of the teachers. In the study by Orlando (2016), primary school teachers perceived that when they prepared lesson plans and taught language lessons with ET aid, it consumed much of their time. This was an extra challenge for the teachers as they integrated ET into their teaching. Also, primary school teachers in Saudi Arabia commented that incorporating ETs in their lesson wasted much of their time, so they lacked time for lesson planning and teaching in class (Al-Rashed, 2002). More specifically, Dang (2011) stated in his case study with Vietnamese tertiary language teachers, that, as the rule of

thumb, it required three to four times of the teaching time to prepare a language lesson with ET integration.

The reasons for class-time consumption in my research differ from the reasons in other research. In my study, the teachers mentioned that when they taught with ET support, they had to spend their teaching time dealing with problematic ETs, such as out-of-order ET or incompatible ETs (see section 5.2.2). Therefore, they did not have enough time to teach. Whereas, in other studies, the Bangladesh teachers mentioned ET required more technological knowledge with extra time to learn and practice, so they did not have time to prepare ET activities (Khan, Hossain, Hasan, & Clement, 2012). In addition, Chinese teachers explained that because they were too busy with their syllabi's goals, they did not have time to plan as well as incorporate ETs into their lessons (Dong et al., 2020). The two contrasting views above suggested that generally the teachers in this research were confident about their knowledge of the available ET equipment.

In short, teachers' workload was motivating factor for the teachers to use ETs in teaching because the teachers perceived that ET helped them to save time and effort in delivering lessons and storing teaching materials. However, for the older teachers, it was demotivating factors due to the huge amount of time they had to spend on dealing with technical issues as integrating ETs in their language teaching.

To sum up, the two above categories of factors which are student related factors and teacher related factors are those that language teachers in this study noted as having major influence on their use of ET in this research. From their perceived viewpoints, the language teachers in this study showed their care most about students learning and health when they applied ET in their language teaching. Their approaches of integrating ET reflected their aim that students could achieve their best academic goals and keep their students' physical health the best. At the same time, the teachers were always self-reflected about their knowledge and skills of technology and language teaching approaches, or TPACK, which shows that the language teachers in this study were open-minded and always willing to learn new technologies.

The answer for RQ1 can be summarised briefly that the Vietnam primary language teachers in this study experienced the ET integration in language teaching were positive. They utilised available ETs as substitutions for traditional methods and their language teaching approach was still mainly teacher-centred, unlike directions from the government which requires more student-

centred approach in language classrooms. From their experience, they perceived that students and teachers were two major factors that had crucial impacts on their use of ET, which illustrates that the teachers' TPACK helped them to use ET effectively and not too dependent on ET. To continue, the next section will answer RQ2 in relating to teacher professional development activities which assisted the teachers in their language teaching with ET support.

7.3 Research Question 2: "How do primary language teachers experience the ET teacher professional development activities?"

This section discusses how the teachers in this research experienced the ET teacher professional development (TPD) activities both formally and informally and explores congruence or incongruence with the policy to gain further insight into how policy and practice go together.

7.3.1 Externally designed ET TPD experience

As found in section 6.2, the language teachers in this research were quite critical about their experiences of the externally designed TPD provided by the DOET. They experienced external formal DOET TPD in large halls with many other teachers. They explained that they were unable to connect with the trainers or their peers because of the large class size and lecturing style. Most of the time, they sat back and took up information passively with little practice. The language teachers experienced that the training courses' content was overwhelmingly focused on theories, with a lack of hands-on practice during the course. Though the TPD's content was up-to-date, it was more theoretical and not always beneficial for the teachers. Another disappointment for these language teachers was regarding access to training events organised by the DOET as only a small number of teachers in schools were able to engage in those TPD programmes because the DOET just provided training for senior or senior-to-be teachers of the schools. Furthermore, these teachers experienced little organised opportunities for sharing within school from teachers who attended TPD or a teacher conference.

Having large classes and using a lecture-style of TPD organisation is common in Vietnam education system as suggested in the study by Tran, Nguyen, and Ngo (2020). That case study was carried out within the current education reform at a university in the centre of Vietnam. After analysing various qualitative data sources, these researchers stated that popular formal TPD activities were conferences, workshops and seminars. Although such courses maybe

popular to attend, the limited learning and sharing of learning that results from these experiences is a concern.

Based on my review of directives, decisions and guidelines of applying ET support in Vietnam Education System issued by Vietnam government and the VMOET, there are two aspects to be discussed relating to the content of the TPD programmes and the accessibility to the TPD programmes of the primary language teachers. In terms of the content of the TPD activities, there is a tension between policy and practice. In the documents, the content of the training for teachers should be based on the teachers' needs (Phạm, 2016b; Pham, 2000; Phạm, 2017). Whereas, in practice, the course content is designed using a top-down approach, and was not based on surveying teachers for their requirement and preferences. The top-down or teacher-centred approach was also applied in the lecturing style of the training course. The teacher participants, as learners, were passive and had few opportunities to practice and interact with trainers. This is a gap between policy and practice which needs to be addressed.

Regarding the accessibility to the TPD programmes by the DOET, there are no specific guidelines on how all teachers can get technological pedagogical knowledge and skills from the TPD programmes. Instructions in policy are just general ones such as "…improve ICT applying skills for teachers at all levels" (Pham, 2000, p. 5). "…implementing effectively the TPD system" (Nguyễn, 2001, p. 8) without any specific implementation guidelines to achieve the goal that all teachers benefit from the TPD programmes. As a result, school principals and school technology coordinators receive no specific guidance resulting in no systematic or school organised way of teachers collaborating to learn from each other after participating in the professional development courses. The teachers participating such courses did not share what they had learnt with other teachers in their schools. This is the second gap between policy and practice that needs the attention of the policy makers and school leaders. They may consider a plan to create a community of practice for teachers supporting each other and capitalise on the learning from TPD of those who were able to attend for the professional learning benefit of those who did not.

In contrast, studies on formal TPD programmes in other countries showed that they all had programmes organised by the government and their ministries of education, which were comprehensive, collaborative, and even individualised to each teacher. An illustration for a

comprehensive TPD is the Philippines. The country has Philippine Professional Standard of Teachers (PPST), which had clear expectations to assess teacher performance (Roberto & Madrigal, 2018). Then, in implementation, there were documents that guided how mentors worked with small groups from the conception of competencies to target, target outputs, target goals, and the expected time frame, and how to formally report TPD results to the managers of different levels. This TPD programme was carried out with detailed instructions of how it should be implemented, which have not been found in TPD policy documents of Vietnam.

A further good example of a collaborative approach to TPD is Japan, where under the guidance of the VMOET, new teachers were mentored by senior ones. They collaborated for at least two years from lesson planning, observing, practicing, and reflecting (Doig & Groves, 2011). Such long term TPD has not been found in Vietnam context and could be used to encourage technological pedagogical knowledge and skills.

Another illustration regarding individualisation of formal TPD is a programme carried out in the USA. The online training was organised by the state department of education to assist teachers. There was a training series where teachers monitored their own progress doing programmed activities set by an external entity.

This study identifies two key areas for potential improvement aligning MOET policy for student-centred education with learner-centred professional development for teachers and capitalising on the investment in TPD by organising peer sharing of learning and collaboration around TPD amongst teachers in primary schools. There are the models of mentoring, use of small groups and teacher self-monitoring found in literature from other countries that offer possibilities for consideration by the Vietnam Government and MOET.

7.3.2 Teachers' informal ET PD experience

Informally, the teachers in this research experienced that their professional knowledge and practice were improved the best by informal ET TPD activities. First, they experienced timely responses to questions and needs as they used Google or joined Facebook groups (see section 6.3). From their viewpoints, these tools helped them acquire new knowledge and skills of using ET to teach as the need arose. Then, they experienced collegiality and collaboration through being part of a group that supports each other. The assistance they received was on time ("just-

in-time"), and met their needs and expectations as they arose in their relevant teaching and learning context.

For instance, Facebook groups evolved so that teachers could share resources and interact with each other about the use of ETs in their teaching. Self-learning by the Facebook group was the informal TPD activity that the language teachers in this research primarily used to improve their knowledge, skills, and practice of how to integrate ET in teaching. These language teachers learnt about technology skills and use, as well as gathered specific ideas for language teaching and learning activities by joining or creating social networks (e.g., Facebook groups). In these networks, many other language teachers around Vietnam were willing to assist them with just-in-time help and give advice when they posted their questions. Facebook offered opportunities for users to join groups that share common interests or concerns as well as gain skills and knowledge from other group members (Hall, 2019).

Building an online community of practice in Facebook group has been identified in research in Vietnam and other countries since 2009 (Long, 2016). In Vietnam, a study on how English as a foreign language tertiary teachers used Facebook group as online communities of practice showed that the teachers mainly used Facebook group to share resources, online PD opportunities, and research development in higher education contexts (Mai et al., 2020). Besides these benefits, the teachers reported that Facebook groups can be used to share with other associations in other nations. For example, in India, Hur and Brush (2009) found out that there were forums generated by Indian K-12 teachers in social platforms, which were more beneficial professional development training courses than formal ones because they were used to share feelings of teachers, to tackle teacher isolation, to investigate ideas, and to experience a perception of fellowship. Moreover, Facebook group was a platform where teachers in developing countries could exchange professional-related matters, at a minimal cost or even zero fee. This was also the case of Kuwait primary schools' teachers, who claimed that they self-learnt technology skills by using a Facebook group to learn teaching techniques from other teachers because they themselves had little or no formal training (Alharbi, 2011). Kenya teachers joined a Facebook group named "Teacher of English" in a recent study by Bett and Makewa (2020). They found the group helped to enhance their continuing professional development. The most significant way that improved their professional practice was collaboration. The teachers in

the group shared questions, comments, advice, or even jokes relating to their profession, and took advantage of the sharing very much the same way as colleague informal face-to-face meeting in their staffrooms.

Besides Facebook, Twitter has also been studied as another channel to develop teachers' professional practice. Carpenter and Krutka (2015) in their study about educators' perceptions on the use of Twitter for professional development, observed that social media such as Twitter was a participatory, grassroots TPD platform to support teachers in improving their teaching knowledge and skills.

The findings of my study related to the use of Facebook groups for teacher PD in this research are mostly in line with the studies in literature and with the government policy encouraging informal TPD and to self-improve their skills of using ETs in their teaching (Nguyễn, 2000; Nguyễn, 2017). The additional aspect from my research was that these teachers belonged to local social media groups suggesting that social media groups that the teachers join or create may include only local or national teachers only such as Vietnamese teachers, so that the teachers with similar teaching contexts can provide better support to each other.

To sum up, there is a gap between policy and implementation regarding ET TPD activities. The VMOET aims for student-centred teaching and active learning with ET support but provided ET TPD is teacher-centred and does not survey teacher needs or use learner-centred activities, which would better role model active learning. Also, although in policy, teachers are encouraged to self-initiate their professional teaching development, there are no guidelines for teachers on how to self-initiate or what might meet government expectations. One way to build teacher collaboration might include formal ET TPD, with content about guidelines for teachers on how to search for needed information online, how to use social media to join teachers' communities and to seek for help from other teachers. Another way could be through formally organised opportunities for those teachers who attend external TPD to share with their teaching colleagues.

7.4 Chapter summary

This Chapter discussed the findings from the survey, the interviews, and documents reported in Chapter 4, 5, and 6 with reference to the two research questions of this study. The chapter is composed of two section s to answer the questions.

The first section is to address research question one: “How do Vietnamese primary language teachers experience using educational technologies (ET) to teach languages?”. The answer for this question includes two experiences, which are the teachers’ judicious use of available ETs and perceived factors influence their ET use.

The first answer to the research question is that these teachers used the available ET wisely as shown by the fact that they utilised all available ETs in most of their language lessons according to the purpose of the lessons. In addition to the available ETs, the teachers bought their own laptops adding to the ETs equipped at the schools. Moreover, the teachers decided to use the ETs as substitution for traditional tools, which helped them save time to prepare lessons as well as motivate students to learn their language lessons. As a result, the teachers mainly applied teacher-centred approach as integrating ET in their teaching practice.

The second answer to the first research question is that the teachers perceived two major factors impacted their use of ET: student factors and teacher factors. Student factors considered when the teachers used ETs to teach language lessons include enhanced engagement, an impact on study skills, and health concerns. Teacher factors involved their technological and curriculum knowledge (TK) and their workloads.

In general, although the primary language teachers in this study were positive and proactive in their use of ET in their teaching, and they used their subject content expertise to make us of ET in line with the language learning purpose of lessons, this use was not within a student-centred approach. These teachers content knowledge and their embodied understanding, as Vietnamese teachers, of the importance of exam success, along with their own experiences of Vietnamese education and a lack of experiencing student-centred approaches themselves as learners even in their latest professional development contribute to their maintenance of a teacher-centred approach.

There are also other factors supporting the approach of these language teachers that are highlighted in this study. The ET available in their schools, such as overhead projectors and visualisers, are most obviously for teacher use rather than student use. The large number of students in their classes and the physical layout of classrooms would also make student-centred approaches of student-student interaction, peer collaboration and group work more difficult.

It becomes apparent that the VMOET faces huge challenges in achieving its policy aims of student-centred learning with the support of ET use in teaching and learning.

The VMOET also faces the financial challenge of resourcing schools with more classrooms and staff to reduce class sizes, and provision of schools with more ET in order to capitalise on the affordances of learner-centred ET such as mobile and individual devices like laptops, tablets, IPads or chrome books.

In respond to research question two: "How do Vietnamese primary language teachers experience the ET teacher professional development activities?", the answer comprises of teachers' both negative and positive experiences of formal and informal teacher professional development (TPD) activities. The teachers' experience of formal TPD were that not all the teachers could access the formal training courses provided by the VMOET or by the Hanoi DOET. Only the teachers who were nominated to attend the "teacher-conferences", second type of externally designed TPD found the activities were practical for them and they could benefit from that (see section 6.3). However, those who did not have chance to attend the conferences and TPD courses did not get any benefits and wished the knowledge and skills to be shared by those who attended. In addition, there was also tension of TPD organised by the schools' board of management. The training programmes were not based on the teachers' needs but were more top-down approach. This is the mismatch between policy and practice. In policy, all the teachers were expected to be well trained and apply student-centred practices with ET use, but in fact, not all of them got the training as well as did not apply student-centred approach in their language teaching with ET aid.

While formal TPD seem not as effective as it was supposed to be, informal TPD including teacher use of Google search and Facebook group was commented to be just-in-time learning and effective. All the teachers in this research found that they could have an answer quickly for their queries relating to their needed knowledge for teaching by "asking" Google. Joining a Facebook group for primary school teachers also helped the teachers to get practical ideas for their teaching by asking their colleagues in other schools. Facebook group is a good way to build community of practice for the language teachers. In addition, the teachers in this research found these informal/informal TPD did help them in their teaching practice. These findings mirror all government document's guidance that always encourages teachers to self-improve their skills of using ETs in their teaching (Nguyễn, 2000; Nguyễn, 2017).

After addressing the two research questions with discussions about the tensions emerged, the following chapter, Chapter 8, moves on to draw out conclusions with implications for practice.

CHAPTER 8
CONCLUSION

8.1 Introduction

This final chapter draws together the whole research project by synthesising the major findings and providing concluding insights and remarks. The chapter comprises six main section s. The first section summarises the purpose and the method of the study. The second section summarises the main findings, and the implications of these findings. The third section presents this research's contribution to the field of language teaching in Vietnam and also to broader settings. The fourth section outlines the limitations of this research. Building on these, and potential gaps identified in the literature review, the fifth section proposes some possible directions for future research. The last section is my concluding personal remarks with a reflection on my doctoral journey.

8.2 Summary of the purpose and the approach of this research

The purpose of this research was to explore how language teachers in Vietnamese primary schools experience the integration of ET in their language teaching and their experience of any relevant ET TPD that they received. The initial motivation originated from my experience over three years of educating Vietnamese school teachers to use information communication technologies in their language teaching. Based on the feedback I received during these years from primary-school teachers about their use of ET at schools after the training, and about the effectiveness of the training courses they received, my interest was stimulated regarding teacher perceptions and decision-making around ET use for teaching in their language classrooms and the effectiveness of TPD programmes that they participated in. The teachers' viewpoints motivated me to carry out research with Vietnamese primary school teachers to understand more about their experience and to contribute ideas towards improving the quality of TPD in the area of ET uses.

Although there have been many studies internationally on teachers and the implementation of technologies for teaching and learning, there has been less research conducted in Vietnam's primary schools and little focused on the experiences of specific language subject teachers. This gap identified in the relevant literature helped clarify the context of the study, the specific

research questions and the research approach. In particular, the lack of up-to-date research on the primary-school language teachers on the ET use in teaching induced me to choose language teachers in Vietnam's primary schools as invited participants and the context of this research to address two research questions:

1. How do Vietnamese primary language teachers experience using educational technologies (ET) to teach languages?
2. How do Vietnamese primary language teachers experience the ET teacher professional development activities?

The need to address the complex nature of people's experience caused me to choose hermeneutic phenomenology for this research. Hermeneutic phenomenology seeks to understand the meaning of people's experiences (Becker, 1992) and this can be achieved by generating rich, in-depth data and analysing it through looking for themes and interpreting the evidence. Hermeneutic, also referred to as interpretive, phenomenology was the most appropriate methodological approach for this research because it entails the participants' existence and their relation to the environment in which they exist (Sloan & Bowe, 2014). The aim of my research was to explore the lived experiences of Vietnamese primary language teachers in relation to their use of ETs in teaching and the TPD activities that they received.

8.3 Key findings

The main subjects of the study are these teachers who were essentially primary language teachers and technology users. Their decisions about the use of ET were based on their expertise (knowledge and skills) in language teaching curriculum and pedagogy and familiarity with the technology they had available to them. In relation to the two research questions key findings were presented as their experiences of the use of available ET (Chapter 5) and the available ET teacher professional development (TPD) activities (Chapter 6).

One key finding is that most of the teachers participating in this research were proactive in integrating ET into their language teaching. They each equipped themselves with a laptop without waiting for the schools or the government to supply these, despite the fact that the price of a laptop was higher than their monthly income of a full-time teacher. Another key finding is that although the available ET resources in the schools were limited, most of these teachers had a

positive attitude towards the use of ET in language teaching. They recognised both the advantages and disadvantages of using ET; however, they did not display many negative attitudes towards using ET or highlight the disadvantages.

One more key finding is that the teachers tried to utilise all the ET available in their schools at substitution level of SAMR. They used ET frequently in their teaching yet they used ET judiciously for specific purposes related to language teaching. They saw ET use as particularly advantageous for vocabulary learning, for example. These teachers made "fit-for-purpose" decisions regarding ET use in their planning and class activities. Some also indicated their worry that too much exposure to ET could have a negative effect on students' health and on the development of students' learning skills particularly their sustained attention when reading and levels of imagination.

Although, they saw ET use as giving individual teachers status in terms of being up-to-date and modern, the use of ET was not the focus for these teachers. The focus for these participants remained their students and the teaching of languages. They made decisions not to use ET for all possible learning activities due to concerns for the overall development of the whole child, specifically their eyesight and study skills. As some perceived that ET did harm to their students' eyesight or study skills, they would use less or not use ET. However, these teachers also perceived that if student engagement such as their learning passion, their class participation, and learning capabilities were enhanced by use of ET, they would integrate ET frequently in language teaching and learning activities. The proactive behaviour of the teachers in this research is recognition of their positive attitudes towards ET use and their subject expertise.

The teachers were also proactive in their own professional development. They sought help through Google search and joined professional networks in Facebook groups, instead of waiting for formal ET TPD which happened once or twice per year. They used Google to find articles or videos to teach themselves how to use a specific ET tool in their language lessons. This informal mode of TPD met the teachers' needs in a timely manner. Joining professional groups in social network such as "Chúng tôi là giáo viên tiểu học" (We are primary-school teachers), or "Hội giáo viên tiếng Anh Tiểu học 4.0" (Group of 4.0 English primary-school teachers) helped these teachers improve knowledge and skills about integrating ET in teaching. In their experience, by joining the groups, they could not only learn from their colleagues' experiences, but also their

professional-related questions could be answered when needed. These two ways of informal teacher learning (joining professional networks and seeking online resources) adopted by the teachers may provide policy makers and facilitators of TPD with ideas on incorporating more "fishing tools" such as how to effectively use Google and social networks as content in TPD courses to improve teachers' professional knowledge and skills.

In general, these teachers were, at the time of the research in 2018, not currently under pressure to implement the use of new ETs. Without the pressure of externally driven change, these teachers were free to explore and develop their pedagogy at their own pace and for their own needs. They spent their own money and personal time in order to continue to develop their knowledge and skills for the purpose of the specific needs of the language learners in their classes.

However, these teachers did maintain a teacher-centred approach to their teaching due to factors that are largely beyond their control: the need to manage large class size; constraints of the physical layout of classroom spaces; and the largely teacher-centred affordances of the provided ET. Also, these teachers had limited experience of student-centred approaches as a learner even in their recent professional development activities.

8.4 Contribution to the field

With advantages of being a bilingual researcher in this study and in practice, I could gather richer data information and have deeper understanding of participants' stories of experiences. Therefore, this research's findingsenhance the existing body of knowledge by capturing teachers' knowledge, experiences, and practicesof ET integrating in all subjects in general as well as their experiences of TPD activities provided. This research also contributes insights into the decision-making of those involved in TPD and policy in the areas of language teaching and implementation of ETs. Although the scope and nature of the hermeneutic phenomenology constrains the ability to generalise the findings to international contexts, this research gives insights and understanding of this particular context. It, therefore, enhances the overall understanding of the field and contribute by enriching our understanding within the Vietnam context and also of the overall worldwide context.

Contrary to much of the early literature and models of technology implementation in teaching and learning that suggest some levels of teachers' resistance to ET use and focus attention on

availability of infrastructure and devices, the results of this research show a proactive and positive approach by these Vietnamese primary teachers who make judicious use of the ET available to them. What is also clear is that teacher decision-making regarding ET use with classes is enormously influenced by their expertise in their curriculum subject—in this research language teaching—as well as their understandings about learner engagement and potential health issues from the overuse of devices. By focusing on language teachers' experiences rather than on technology use a more nuanced picture of the decisions that teachers make regarding ET use for teaching and learning emerged. The following are implications for practice that have emerged through the research.

For primary-school language teachers

In terms of teaching practice with ET support, the findings show that language teachers with such ETs like in Vietnam primary schools should balance the time using ET to teach language components and the time not using ET to teach but create more physical or outdoor activities. The physical and outdoor activities should encourage students to read physical books with longer concentration time and interest. Thus, students' language skills, especially productive skills (speaking and writing) could be improved.

In terms of TPD, the research's findings suggest that most of the teachers in this research are dynamic and confident in their individual language teaching practice with ETs and ET TPD, but not strong in formal collaboration among colleagues, which resulted in the hesitance of some teachers as adopting ETs in teaching and some disappointment comments of the teachers who were not formally trained and learned from their colleagues' sharing.

To be more specific, this research's findings provide recognition and encouragement of teachers' own proactive ET professional learning activities for enhancing the teaching and learning of their subject and supporting students' learning. The outcomes also highlight the importance of subject knowledge and pedagogy in teacher decision making about ET use in classroom activities. Language teachers consider their decision making in language teaching practice with ET integration such as asking themselves what components of language learning could have ET assistance.

The research also provides a research-based source of information for Vietnamese primary school language teachers on their colleagues' SAMR level of applying ET in their teaching (see

section 7.2.1). They can reflect on their own teaching and what level of implementation of ET they are at. Primary school teachers can also learn about how other teachers develop their professional learning anytime, anywhere with material and collegial resources accessed through the Internet. In short, the teachers' experience of their ET use in this research can be a good example for other teachers in other contexts when school technological resources are limited and formal professional learning sources are not meeting their needs.

Johnson (2006) suggested that teachers could develop their profession when they engaged in self-initiated and collaborative learning. The research's outcome implies that most of the teachers in this research engaged in self-directed learning but not collaborative learning. So, they should think about ways to collaborate with their colleagues officially to acquire new knowledge and skills of using ETs in their teaching practice. The ways can be either face-to-face or in online mode.

For primary-school leaders

Primary school leaders like principals, vice-principals, school technology coordinators may use the findings to understand their teachers' thinking and to act accordingly. One action can be taken relates to ET equipment and technical support. The school leaders may not be able to equip teachers with more and better ETs, but they could have a strategy to better support their teachers in terms of technical issues. Each school has just one school technology coordinator, so it would be overloaded for the staff when many teachers seek their help. The school BoM can have a regular training programme specialised in resolving technical issues, in which school technology coordinators can train language teachers and other teachers how to deal with frequently met technical issues. These programmes help each teacher to be more confident when they use ET in classrooms and reduce all ET technical issues for both teachers and school technology coordinator.

Another implication relates to organising ET TPD activities. By including teachers' voice into the design and delivery mode of TPD, it should better meet the needs and pedagogical approaches of teachers. This will in turn better facilitate change in their practice and hence potentially the learning and understanding of their students. They may think of carrying out needs analysis to identify better their teachers' needs and then, design appropriate content for in-school TPD courses. Furthermore, schools' BoM should create more formal professional sharing

opportunities for teachers within schools, in which teachers with more experience or teachers who are trained in other courses by the VMOET or the DOET or attend teacher conferences on using ET can share their practical knowledge and skills with other teachers within schools. The sharing can be in different scales-a whole school workshop or collaboration among group of teachers who teach the same subject or component. The workshops can be held either face-to-face or online. One more implication is that ongoing and regular assessment that identifies teachers' experiences of applying ET in teaching should be conducted to better inform the process of designing in-school TPD programmes.

For policy makers

In order to put into practice learner-centred teaching approach at primary level when using ET in language teaching as directed by VMOET (Hai & Nguyen, 2020), policy makers should think of a programme with balance between knowledge and time. By doing so, language teachers can design their lesson plans with time for students to enhance their metacognition, or time to think about their learning, understanding their learning to better achieve high academic results with more active role in their own studying.

Regarding TPD programmes, policy makers, particularly Vietnamese ones, who are responsible for TPD, especially for language teachers in primary schools, may use the results of this research to be better informed. They may have information on the teachers' viewpoints about what types of ET are being used in language teaching. Teachers in this research were positive and proactive about ET use even with limited technologies available in their schools. On the basis of this research provision of ET to schools can confidently continue in the knowledge that teachers will make "fit for purpose" use of what technologies are available to them and be informed that the focus or emphasis should be on teacher technological pedagogical content knowledge (TPACK) as well as the subject knowledge on which expert decisions about ET use for teaching and learning are made.

In addition, policy makers are also informed about how the primary school language teachers used ET to teach language subject in class. On the basis of this research, policy makers can be encouraged to talk to teachers and gather their subject expertise, which will help them in giving directions or guidelines on approaches of teaching with ET integration in order to achieve the

goals set by the VMOET, specific to Vietnam. Policy makers should also note teacher concerns about the overuse of technologies on student health, particularly their eyesight, and study skills.

Moreover, from the findings about teachers' experience on formal TPD and informal teacher initiated TPD activities, the policy makers, may have more ideas on how to design better teacher professional development programmes. This might include having a broader spread of teachers involved in the VMOET teacher conferences or a stipulation that participants share their expertise with teachers in their schools. Thus, through sharing face to face or with online platforms, a more open approach to the dissemination of resources, knowledge and processes for using ET in language teaching may be achieved. More effective TPD programmes might include the professional learning methods that are more effective and model the VMOET desired student-centred approaches. Also, TPD providers may consider how to develop guidelines for teachers on using the internet especially Google and social networks to improve their own professional knowledge and skills.

Student-centred approaches with supporting use of ET as advocated by MOET policy, at least on the basis of this study, need more than teacher and school leaders' efforts. Attention to the challenges of large class sizes and resourcing individual ET devices for student use would be a positive way forward.

Finally, at the table where the policy and decision are made, it would be important to have representatives of teachers around the table to help in that decision-making because of two reasons. One reason is that policy makers and those with authority to make decisions on the provision of ET for schools could acknowledge the positive qualities of the language teachers in this research. One of these qualities is their proactiveness and positiveness in their use of ET for teaching. Another quality is that the teachers were able to make intentional and fit-for-purpose decisions about the use of any ET available to them according to their subject expertise and understanding of learner needs. Both qualities of the teachers can be taken into consideration as the policy makers are designing content for TPD programmes.

Another reason is that teachers could inform policy makers what they want and need for the application of ETs in their language classrooms. Since I submitted this thesis for examining, I have been invited to join the Vietnam's National Foreign Language Project as a teacher educator. So, I will actually be intending to include teachers' voice in the process of developing a

conceptual framework for professional learning to interprete and explain language teachers' PD for using ET in teaching. From the findings of this research, some elements will definitely in the framework: the situational element, the subject expertise element, and the social and network element both locally and virtually. Hopefully, the framework will contribute to the project's success.

8.5 Limitations

As with all studies, this research has certain limitations. The limitations presented here are in the formation of topic and research questions, scope of the sample, the self-reported questionnaire, and the translation of the interview data.

One limitation is that this research looked at the experience of teachers of both Vietnamese and foreign languages, which might be too broad. Since there are distinctions between teaching L1 as a subject and teaching foreign language as a subject, the analysis of data which combines viewpoints of both teachers of L1 components and foreign language components may not best represent any distinctions. Also, the answers to research questions of these language teachers may not be applied to teachers of other languages.

In terms of its scope of the sample, this research was confined to language teachers of six primary schools in a big city in Vietnam, while the number of primary schools in Vietnam is 12,961 in the school year of 2019-2020 (Vietnam Ministry of Education and Training, 2021). Thus, this can be said to be a relatively small sample and results might not be generalised to any other schools or groups of primary school language teachers in other contexts (e.g., language teachers in primary schools of mountainous areas of Vietnam) because the working conditions of different schools vary.

The use of the self-report questionnaire in this research is also a limitation of this research. Self-report questionnaires are based on participants' perceptions of the phenomenon under investigation. Participants' perceptions were critical to the intention of the research but there is a possibility that a teacher's reported perceptions might not reflect the actual situation or their lived experience. Therefore, the teachers in this research might not give full information because they might not remember all their past experiences about their ET integration and ET PD activities. They might also have responded to the questions in a way that they felt was acceptable

and safe socially and culturally, especially when they were asked to rate the encouragement of the government, principals, and ICT-coordinators in their schools. Although the anonymity and confidentiality elements of the study were emphasised and enacted, they may still have felt some reluctance to being too critical of Vietnamese authorities.

Finally, another limitation of this research relates to the translation of the group and individual interview data. I transcribed and then translated the data on my own, so researcher bias might affect the translation process. I attempted to follow meticulously steps during the process of translation and be as faithful to the teachers' original words in the interviews as much as possible. However, I cannot guarantee that the translated versions may not have fully captured the nuanced meanings in the original versions. Therefore, I acknowledge that to some extent this is my interpretation of the evidence.

8.6 Suggestions for further research

The findings and limitations of this research pinpoint some directions for future research:

One direction is that future studies can narrow down to teacher of a foreign language or an L1 teaching with ET support. This differentiation will help researchers to get further in-depth analysis on the phenomenon. As a result, other stakeholders such as principals, school technology coordinators can draw more quality lessons learnt for the specific component.

One more direction is that a future study may duplicate this research in other context with different groups of language teachers because this research investigated the topic of teachers' experience on using ET in language teaching in the set boundary of six Vietnamese primary schools in a big city, and among language teachers. The findings of the replicate studies will continue to enrich the understanding about teachers' viewpoints on the use of ET in language teaching, and to add to the larger comparable evidence base that is to inform context-specific policies on matters related to the promotion of using ET in language teaching.

Additionally, this research purely focused on the language teachers' experiences including their perceptions on integrating ET in language teaching. The data used was mainly self-reported. Thus, further research focusing on the observation of teaching or learning practices with the use of ETs would provide clearer insight on how language teachers adopt ETs in classrooms to better inform other language teachers, and policy makers. Further studies could also examine the

influence of subject expertise of teacher decision-making around ET use for teaching. As ET are developing at a rapid pace, and new innovations usually become cheaper over time, studies into using ET such as virtual technology, augmented technology and virtual meeting spaces in learning languages might also be applicable and probably necessary in the future.

Although this research managed to analyse perceived factors that influenced the ET adoption of language teachers in their lessons, it does not denote the end of the discussion. Therefore, further research on other factors such as economic factors, social factors, or geographical factors, which are beyond the scope of the current study might be helpful for understanding other unknown reasons of Vietnamese language teaching practices with ET.

Exploring Vietnamese primary teachers' perceptions and experiences of student-centred and active learning specifically would also be a potentially fruitful line of research inquiry given MOET policy.

8.7 Concluding personal remarks

Before bringing this thesis to a close, I want to deeply express my reflection on the whole PhD journey, as reflection is also the tenet of a hermeneutic phenomenological research. This reflection is my personal positioning which influences the way I think and interpret my data through my world view i.e., growing up and being a teacher and teacher educator in Vietnam. The PhD journey has shaped a part of me and thus influenced the interpretations that I have made in this thesis. I believe this reflection will help other PhD candidates to foresee the challenges they may have in their journey and better prepare for the success of their study. This will also provide PhD supervisors information about their students' challenges, so that they can provide practical and meaningful support for their students.

The first thing I want to note is that I am pleased with myself because this is the first time, I have written such a long academic work in English, in a foreign language. I mention this because my L1 is Vietnamese. I only used English when I pursued PhD in education in New Zealand from 2017. Previously, the longest document in English that I have written was 4 A4-paged long paper which was the test on applied linguistic in the Post Graduate Diploma Course in applied linguistic at Regional English Language Centre (RELC) in Singapore in 2008.

Additionally, there are many other challenges that as a PhD student I have overcome. My major challenge in this journey is that I played two full-time roles in pursuing a PhD, a researcher, and a "family leader". In my research, I am a decision-maker; and in my family residing as an international student in the country of study, I was the "leader" as my husband and two sons could not communicate well in English, which made them dependent on me during three and a half years residing in New Zealand.

I also faced financial and mental health issues in the first several months arriving in New Zealand. As my family stepped to Auckland airport arrival, we were fined NZD 400 for a forgotten boiled egg left in my son's lunch box. We did not know the rule that boiled egg are one of the prohibited items to New Zealand. After 21-hour flight and long transit, my husband and I, especially the two sons, who were just five and six years old, were exhausted but had to wait for another two hours sitting in the airport to pay the fine. I felt responsible.

In a foreign country people can be taken advantage of financially and based on prejudices and stereotypes. Renting accommodation is one area where my family faced financial disadvantage and racism. Then, COVID-19 first appeared in New Zealand in February 2020. COVID-19 stands for Coronavirus Disease of 2019. The first COVID-19 case was in Wuhan, China, in 2019, then COVID-19 became a pandemic all over the world. At the time of finishing this research, the whole world had more than 569,000,000 positive cases, more than 6,300,000 deaths (*Covid-19 coronavirus pandemic*, 2022) (which equals to the number of New Zealand population). The pandemic disrupted lives and negatively influenced the global economy. "Lockdown" periods created unemployment, poverty, hunger, and stress to people around the world. PhD students and their family like mine in New Zealand were also affected. From the first lockdown in New Zealand in March 2020, due to my experience during the SARS epidemic in Vietnam, I chose to study from home every day, withdrawing my two sons from attending school in person and my husband stayed home from work. In my house, I became three times busier than normal because I played my three full-time roles—a PhD student, a wife, and a mother—24/7.

Nevertheless, I still thank all the challenges that happened to me from the first time I arrived in New Zealand to the time COVID-19 first appeared in New Zealand, till the end of this journey. Through the challenges I have grown. Facing these challenges has made me independent, made

me stronger, and made me know how to put myself in other people's shoes, empathising with other people. I recognise that the end of my PhD journey has opened me to a "New Strong Me" with more open eyes, open mind, and open heart.

My experience in the PhD journey will help me make the shift from a student to a supervisor and an educator of primary school teachers. I realise I will need to know and understand their academic background, their family, their characteristics, and the current difficulties that they are facing, so I can guide them more effectively through the journey to reach their goals. It is taking into account that students are human beings with complex lives and lived experiences, including other roles that influence their perspectives and thinking whilst they are studying.

Furthermore, I have gained professional knowledge from the PhD journey, which will change my ways of working in the future. One key aspect that I have gained from this research is that there is an enormous potential to integrate ET effectively in primary schools in Vietnam due to the teachers' expertise. They are knowledgeable, proactive, flexible, and adaptive. In general, they strongly support the government policy on using ET in language education. However, teachers' perceptions indicated that they did not get sufficient and appropriate training due to the top-down policy that has been instigated. They did not get adequate opportunities for professional learning due to top-down policy, too. Critically, a key finding was that they did not have a voice in the nature and content of their TPD and therefore were not able to shape the TPD for their particular context, requirements and experience. As well, due to this lack of consultation, they did not experience learner-centred approaches.

So, when I am back as an ICT teacher educator or involved in teacher training programmes, I will start with needs analysis. This will enable me to identify the teachers' needs so I can design and implement appropriate programmes and targets. I am also planning to conduct projects with primary schools in Vietnam that move pedagogy from a teacher-centred to a more student-centred pedagogy to align with VMOET policy. The initial projects should involve language lessons using available ETs like mobile phones, iPads, AR, and free apps. This approach of keeping costs to a minimum would be the most promising for a lower middle income country like Vietnam.

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Appendices

Appendix 1: Structural framework of the Vietnam national education system

(Appended to the Prime Minister's Decision No. 1981/QD-TTg dated October 18, 2016)

Appendix 2: Letter to the principal of primary schools

Vu Thi Tuyet Nhung
Division of Education
The University of Waikato
Private Bag 3105
Hamilton 3240
New Zealand

DD/MM/2019

The Principal

……Primary School

Dear……,

Re: Request for permission to educational access to language teachers at the school.

I am currently enrolled as a doctoral student at The University of Waikato, New Zealand. I will be conducting my research project in Hanoi. The title of my research project is:

"*Teaching languages in primary schools using educational technologies: Experiences of primary-school language teachers in Vietnam".*

The aim of this research is to explore how primary-school language teachers perceive the use of educational technologies in language teaching. My study may provide primary school teachers with a chance to reflect on their use of educational technologies in language teaching. This research may also support the Vietnamese government's effort in enabling the use of educational technology in education.

For this research, I would like to obtain your permission to interview you as the principal and to approach a teacher who is in charge of IT in your school, as well as a number of language teachers at your school.

Additionally, I would like your permission to access some of your school's documents and policies that relate to using educational technologies, curriculum and teachers' lesson plans for language classes.

In order to achieve the aims of my study, I would like to carry out my study two phases. In the first phase, a hard copy of the questionnaire will be sent to the teachers. It will take approximately 10 minutes to answer this questionnaire. In the second phase, I will interview you

as the principal and the IT-in-charge teacher. These interviews will be expected to take approximately 30 minutes.

I will then invite fifteen teachers who have answered the questionnaire to participate in individual interviews, and invite another five teachers to participate in a group interview. Each individual interview should take less than 30 minutes. The group interview is expected to take approximately an hour. All interviews will be audio recorded for analysis, but the information from participants will be treated confidentially. Participants have the right to withdraw from the study at any time, except for withdrawing their contribution to the group interview.

This research has been approved by the Faculty of Education Human Research Educational Sub-committee of the University of Waikato. The outcomes of my study will be presented as a PhD thesis, in academic journals and at academic conferences. The completed PhD thesis will be made available internationally in Research Commons by the University of Waikato.

Thank you.

Yours faithfully,

Vu Thi Tuyet Nhung

Appendix 3: Information sheet for school technology coordinators

Vu Thi Tuyet Nhung
Division of Education
The University of Waikato
Private Bag 3105
Hamilton 3240
New Zealand

DD/MM/2019

Dear Mr. /Ms.……..,

This letter is to request your participation in my research.

I am currently enrolled as a doctoral student at The University of Waikato, New Zealand. I will be conducting my research project in Hanoi, Vietnam. The title of my research project is "*Teaching languages in primary schools using educational technologies: Experiences of primary-school language teachers in Vietnam"*. The aim of this research is to explore how primary school language teachers perceive the use of educational technologies in language teaching. My study may provide primary school teachers with a chance to reflect on their use of educational technologies in language teaching. This research may also support the Vietnamese government's effort in enabling the use of educational technology in education. This research has been approved by the Faculty of Education Human Research Ethics Sub-committee of the University of Waikato. The outcome of my study will be presented as a PhD thesis, in academic journals and at academic conferences. The completed PhD thesis will be made available internationally in Research Commons by the University of Waikato.

In order to achieve the aims of my study, I would like to invite you to participate in an individual interview which will take about 30 minutes. The interview will be audio recorded. All information of the interview will be treated confidentially, participants' names will be removed and will be coded to remain anonymous.

You have the right to withdraw at any time of the project.

If you would like to participate in my research study, please read and sign the consent form attached.

Thank you

Yours faithfully,

Vu Thi Tuyet Nhung

Appendix 4: Information sheet for language teachers

Vu Thi Tuyet Nhung
Division of Education
The University of Waikato
Private Bag 3105
Hamilton 3240
New Zealand

DD/MM/2019

Dear teachers,

This letter is to request your participation in my research.

I am currently enrolled as a doctoral student at The University of Waikato, New Zealand. I will be conducting my research project in Hanoi. The title of my research project is "*Teaching languages in primary schools using educational technologies: Experiences of primary-school language teachers in Vietnam"*. The aim of this research is to explore how primary school language teachers perceive the use of educational technologies in language teaching. My study may provide primary school teachers with a chance to reflect on their use of educational technologies in language teaching. This research may also support the Vietnamese government's effort in enabling the use of educational technology in education. This research has been approved by the Faculty of Education Human Research Ethics Sub-committee of the University of Waikato. The outcome of my study will be presented as a PhD thesis, in academic journals and at academic conferences. The completed PhD thesis will be made available internationally in Research Commons of the University of Waikato.

In order to achieve the aim of my study, I would like to invite you to (1) complete a questionnaire which will take you approximately 10 minutes to answer questions about your perceptions on the use of educational technologies in teaching language; (2) participate in a group interview which will have 5 language teachers and will take approximately 60 minutes of your time. In the interview, you are going to sign a consent form, and/or (3) participate in an individual interview which will take about 30 minutes. I will audio record the interview. All information of the interview will be treated confidentiality, participants' names will be removed and will be coded to remain anonymous.

You have the right to withdraw at any time of the project, except for the group interview.

If you would like to participate in my research study, please read and sign the consent form attached.

Thank you

Yours faithfully,

Vu Thi Tuyet Nhung

Appendix 5: Consent form for language teachers

Project title: Teaching languages in primary schools using educational technologies: Experiences of primary-school language teachers in Vietnam

Please tick in the boxes if you agree with the following:

- ☐ I have read and understood the information sheet that provides information and explanation of the nature and purpose of the research project.
- ☐ I volunteer to participate in this research.
- ☐ I understand that I may withdraw from the research project at any stage, except for the group interview data.
- ☐ If I decide to withdraw from the study, I agree that the information collected up to the analysis phase may continue to be processed.
- ☐ I understand that my participation in this research is confidential and that no material, which could identify me personally, will be used in any reports on this research.
- ☐ I understand that the interview will be audio recorded.

I would like to participate in (you can tick more than 1 box)

- ☐ the questionnaire
- ☐ the group interview
- ☐ the individual interview

Name of participant: …….

Signature……Date…….

Appendix 6: Consent form for school technology coordinator

Project title: Teaching languages in primary schools using educational technologies: Experiences of primary-school language teachers in Vietnam

Please tick in the boxes if you agree with the followings:

- ☐ I have read and understood the information sheet that provides information and explanation of the nature and purpose of the research project.
- ☐ I volunteer to participate in the individual interview of this research.
- ☐ I understand that I may withdraw from the research project at any stage.
- ☐ If I decide to withdraw from the study, I agree that the information collected up to the analysis phase may continue to be processed.
- ☐ I understand that my participation in this research is confidential and that no material, which could identify me personally, will be used in any reports on this research.
- ☐ I understand that the interview will be audio recorded.

Name of participant: …….

Signature……Date…….

Appendix 7: Consent form for school senior manager

Project title: Teaching languages in primary schools using educational technologies: Experiences of primary-school language teachers in Vietnam

Please tick in the boxes if you agree with the followings:

- ☐ I have read and understood the information sheet that provides information and explanation of the nature and purpose of the research project.
- ☐ I volunteer to participate in the individual interview of this research.
- ☐ I understand that I may withdraw from the research project at any stage.
- ☐ If I decide to withdraw from the study, I agree that the information collected up to the analysis phase may continue to be processed.
- ☐ I understand that my participation in this research is confidential and that no material, which could identify me personally, will be used in any reports on this research.
- ☐ I understand that the interview will be audio recorded.

Name of participant: …….

Signature……Date…….

Appendix 8: Questionnaire

This questionnaire is for my Ph.D. project titled: "*Teaching languages in primary schools using educational technologies: Experiences of primary-school language teachers in Vietnam*". The aim of this research is to explore teachers' experience of using educational technologies in language teaching at primary schools of a big city in Northern Vietnam.

Should you have any queries, please feel free to contact me:

Name: Vu Thi Tuyet Nhung

General information

(Please put a cross "x" in ☐ or write your answers in the space provided)

1. Your gender:
   ☐Male ☐Female ☐Not applicable

2. Your age group:
   ☐20-29 ☐40-49 ☐>60
   ☐30-39 ☐50-59

3. Your school type:
   ☐State-owned school
   ☐Non-state-owned school

4. What language(s) are you teaching?
   …… …….....

5. How long have you been using educational technologies (ET) to teach languages?

.....

Your experience with educational technologies

(Please put a cross "x" in ☐ or write your answers in the space provided)

6. How often do you receive an ICT training course?
7. How much time do you take to prepare lessons where you will use ICT?

.....

8. How often do you use ET to teach weekly?
   ☐sometimes

   ☐most of the time

   ☐all lesson

9. What ET do you use to teach? (*you can tick more than one box*)
   ☐Laptop

   ☐Smart phone

   ☐CD player/cassette

   ☐Projector

   ☐Interactive whiteboard

   ☐Others:…….

Your perceptions on having ET to teach languages

(Please circle one number to indicate how much you agree with that statement, 1: strongly disagree-5: strongly agree)

10. Using ET helps you save time in lesson planning.	1 2 3 4 5
11. Using ET is a factor that improves students' language performance.	1 2 3 4 5
12. The government encourages you to use ET in teaching.	1 2 3 4 5
13. The principal encourages you to use ET in teaching.	1 2 3 4 5
14. ICT-coordinator encourages you to use ET in teaching.	1 2 3 4 5
15. IT support is available on time as you need.	1 2 3 4 5
16. Your students feel more motivated as you use ET to teach.	1 2 3 4 5
17. You have a preference for incorporating ET in your lessons.	1 2 3 4 5
18. There are enough ET in the school for you to use.	1 2 3 4 5
19. You have received enough ET training	1 2 3 4 5

20. In your opinion, how often should the ET training take place?
☐once per term

☐once per year

Others:……

21. What are your reasons to use ET to teach?

……

22. What are your reasons for not to use ET to teach?

……..

Further consent

23. Are you willing to participate in the following interviews about this topic in the future? (you can tick more than one box)
☐Individual interview
☐Group interview

24. Please provide your time availability for the interview(s) (if applicable):
.....

25. Please provide your contact detail (email or/and phone number) (if applicable):
……

Thank you!

Appendix 9: Interview questions for teachers (individual and group)

Interview questions

(for teachers-individual and group)

A language that you are teaching:…….

Grade: 1, 2, 3, 4, 5

1. What educational technologies (ET) do you use to teach languages in your school? (prompt: name the facilities and clarify if needed)
2. What is the quality of the ET provided in your school? Are there sufficient numbers of ET provided?
3. What tools do you use the most frequently? Why?
4. What tools do you never or rarely use? Why not?
5. How often are you trained to use ICT for teaching?
6. What training methods are effective? Why?
7. What is the quality of IT support at your school? (prompt: on time? effective?)
8. How often do you use ET to teach?
9. In general, how do you find using ET in teaching language? (prompt: like or not, in lesson planning, in class, crucial or not, why)
10. What are some of the factors that make you decide to use ET in your teaching?
11. What are some of the factors that make you decide not to use ET in your teaching?

Appendix 10: Interview questions for school principals

Interview questions

(for the school principal)

1. Does your school have educational technologies (ET) for teaching languages? (prompt: name the facilities)
2. What is the quality of the ET provided in your school? Are there sufficient numbers of ET provided?
3. Do you think ET your school get sufficient funding for ET facilities? (prompt: why or why not)
4. What kind of technological support do language teachers always ask for?
5. How do you support language teachers with using ET to teach?
6. How often do the language teachers have ICT training?
7. Do you know any government document relate to use ET in language teaching? If yes, what is the document and how it influences language teachers in your school?

Appendix 11: Interview questions for school technology coordinators

Interview questions

(for the school technology coordinator: is a senior teacher who is in charge of guiding, training other teachers in pedagogy including using ET to teach)

1. What ICT facilities does your school have for teaching languages? (prompt: name the facilities)
2. How do you find the ICT facilities in your school? (prompt: quality and quantity)
3. Do you think the ICT facilities are funded sufficiently? (prompt: why or why not)
4. What kinds of technological support do language teachers always ask for?
5. How often do the language teachers have ICT training?
6. Do you think the language teachers need more ICT training? (please clarify) Why or why not?
7. Do you know of any government policy documents that relate to using ET in language teaching? If yes, what is the document? Do you think language teachers are aware of the policy and what effect do you think it might have on their use of ET in their teaching?