Factors affecting teachers' use of technologies as teaching aids in Thai EFL classrooms
ปัจจัยที่ส่งผลต่อการใช้เทคโนโลยีในห้องเรียนของครูที่สอนภาษาอังกฤษในฐานะเป็นภาษาต่างประเทศ

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บทคัดย่อ

ในปัจจุบันเทคโนโลยีมีบทบาทสำคัญในการจัดการเรียนการสอนเพื่อใช้ในการสร้างและแลกเปลี่ยนองค์ความรู้ในวงการการศึกษาในหลาย ๆ ประเทศทั่วโลก ในประเทศไทย เทคโนโลยีได้ถูกนำมาใช้เป็นอุปกรณ์ช่วยสอนและอุปกรณ์การจัดการเรียนการสอนภาษาอังกฤษหลายปีที่ผ่านมา ซึ่งครูผู้สอนสามารถนำเทคโนโลยีมาใช้ในห้องเรียนเพื่อเป็นสื่อการเรียนการสอน โดยเฉพาะการสอนภาษาอังกฤษ อย่างไรก็ตาม

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บริบทห้องเรียนในประเทศไทยยังพบช่องว่างการใช้เทคโนโลยีของครูผู้สอนในการ
จัดการเรียนการสอนภาษาอังกฤษ ดังนั้น การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อศึกษา
ประเภทของเทคโนโลยีที่ครูผู้สอนภาษาอังกฤษใช้ในการจัดการเรียนการสอน และ
ศึกษาปัจจัยที่ส่งผลต่อการใช้และไม่ใช้เทคโนโลยีในห้องเรียนของครูผู้สอนภาษาอังกฤษ
ในฐานะภาษาต่างประเทศ เครื่องมือที่ใช้ใน การวิจัย คือ การสัมภาษณ์แบบกึ่งโครงสร้าง
(semi-structured interviews) ประชากรในการวิจัย คือ ครูผู้สอนภาษาอังกฤษในฐานะ
ภาษาต่างประเทศ จำนวน 12 คน โรงเรียนวัดนวลนรดิศ กรุงเทพมหานคร

        ผลการวิจัยพบว่า 1) ครูทุกคนนำเทคโนโลยีไปใช้ในการจัดการเรียนการสอน
ในห้องเรียน 2) ครูทุกคนนำเทคโนโลยีหลากหลายประเภทไปใช้ในห้องเรียน แต่มีเพียง
แค่เทคโนโลยีที่ทันสมัยบางประเภทเท่านั้นที่ถูกนำไปใช้ 3) ปัจจัยสำคัญที่ส่งผลต่อการ
ใช้เทคโนโลยีของครู คือ ความสะดวก เพิ่มความเข้าใจในเนื้อหาการเรียนของผู้เรียนเร็ว
ขึ้น และกระตุ้นผู้เรียนให้เกิดความสนใจในเนื้อหาการเรียนมากขึ้น แต่อย่างไรก็ตาม
ผลการวิจัยพบว่า ยังมีอีกหลายปัจจัยที่ทำให้ครูไม่ใช้เทคโนโลยีในห้องเรียน อีกทั้ง
งานวิจัยชิ้นนี้ได้นำเสนอแนวทางในการนำเทคโนโลยีมาใช้ในกระบวนการการจัดการ
เรียนการสอนภาษาอังกฤษอีกด้วย

คำสำคัญ: การใช้เทคโนโลยีของครู ปัจจัยที่ส่งผลต่อการใช้เทคโนโลยี อุปกรณ์ช่วยสอน

Abstract

        In the digital age, technology plays a dominant role in creating
and exchanging knowledge and information in the field of education
around the globe. In Thailand, it has also been used as a teaching aid in
English language teaching and learning for decades. However, a gap of
using technology in Thai EFL classrooms taught by English language
teachers has been found. This study therefore aims to investigate types
of technology tools used by language teachers as well as factors that

facilitate and hinder their use of technologies in Thai EFL classrooms. The data was obtained by implementing semi-structured interviews. Twelve EFL teachers with varied numbers of years of teaching experience in a public high school in Bangkok were interviewed. The interview data was transcribed and classified into themes. The findings revealed that all teachers integrated technologies in their classes. Certain types of tools are already used by all teachers, while some cutting-edge tools are presently being integrated in the classrooms. Convenience, enhancement to students' understanding, and stimulation in students' interest are three prominent factors facilitating teachers' use of technology. However, several factors hindering their use of technology were also found. On the basis of these findings, the pedagogical implications and suggestions are included in this paper.

Keywords: Factors affecting the use of technology, teaching aids, teachers' use of technology

Introduction

Technology plays a dominant role in the field of education. It has been used as a teaching aid in language learning for decades around the globe. The use of technology in teaching has become ever more important as teachers must keep up with the technological knowledge of their students (Richards, 2014, p. 2, cited in (Merç, 2015). Moreover, the use of technology for teaching, learning, practicing and assessing foreign language has many advantages, particularly in the English as a Foreign Language (EFL) contexts where learners have very

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few opportunities to practice and assess their language skills (Alsied & Pathan, 2013). The use of technology in instructional activities also plays an essential role in engaging students in learning (Günüç & Kuzu, 2014).

One of the factors that determine educational development and innovation in general is teachers as they are the ones to use technology for educational development. Technology does not have an educational value in itself. It becomes important when teachers use it in the learning and teaching process. The new era assigns new challenges and duties on the modern teachers. The tradition of English teaching has been drastically changed with the remarkable entry of technology. Technology provides so many options as making teaching interesting and also making teaching more productive in terms of improvements. Technology is utilized for the improvement of modern styles. It satisfies both visual and auditory senses of the students (Yordming, 2017).

The rapid emergence and development of technology and its applications for teaching, featuring audio, visuals, and animation effects, come into full play in English classes. Shyamlee & Phil (2012) found that technology plays a positive role in promoting activities and initiatives of students and teachers in English classes. Technological innovation has advanced hand-in-hand with the growth of English, and is changing how we communicate. It is fair to assert that the growth of the Internet has facilitated the growth of the English language. Thus, technology is regarded as an essential element of teaching. For this reason, it is important for English-language teachers to be aware of the latest and best tools, and to have a full knowledge of what is available for any

given situation. Teachers can use a variety of technologies to give more colorful and stimulating lessons. However, it is evident that some teachers are not comfortable utilizing technology in the classroom. Therefore, the study of factors that affect teachers' use of technologies in Thai EFL classrooms might offer some useful insights regarding the matter.

Literature Review

Technology

The term "technology" is strongly associated with the application of science to the solution of technical problems (Herschbach, 1995). On the other hand, Amina and Salim (2015) defined the term "technology" as various materials used to improve the learning process and make teaching enjoyable. It facilitates learning by employing appropriate technological processes and resources (Amina & Salim, 2015). Recently, a number of studies have been conducted on the use of technology in EFL classrooms. For example, Abukhattala (2016) conducted research on the use of technology in language classrooms in Libya. The findings revealed that the participants used technology because it motivated students and because it offered a different mode of presentation, though they were also hindered by limits in access to equipment, professional support, and confidence in their own computer skills.

Evolution of technology
Web 1.0

In Web 1.0, a small number of writers created web pages for a large number of readers. As a result, people could get information by

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going directly to the source. The WWW or Web 1.0 is a system of interlinked, hypertext documents accessed via the Internet. The first implementation of the web represents the web 1.0, which, according to Berners-Lee, could be considered the "read-only web." In other words, the early web allowed users to only search for information and read it. There was very little in the way of user interaction or content contribution. However, this is exactly what most website owners wanted: Their goal for a website was to establish an online presence and make their information available to anyone at any time (Shivalingaiah & Naik, 2009).

Web 2.0

Web 2.0, or the "read-write web", refers to the present ability to contribute content and interact with other web users, which has dramatically changed the landscape of the web. Web 2.0 hints at an improved form of the WWW. Technologies such as weblogs (blogs), social networking, wikis, podcasts, RSS feeds (and other forms of many-to-many publishing), social software, web APIs, and online services such as eBay and Gmail provide enhancements over read-only websites (Shivalingaiah & Naik, 2009). With Web 2.0 emerging in the early 21st century, Internet users could not only find and read information but also create and share information (Solomon & Schrum, 2007). This major shift in technology from Web 1.0, where everything was created and pre-set by experts, to the more "creative, consumer driven" Web 2.0, gave teachers the opportunity to be more creative with the use of technology in the classroom (Dudeney & Hockly, 2012, cited in Hjalmarsson, 2015).

Teaching aids

Teaching aids are defined as the tools that teachers use in the teaching process such as videos, audio, flash cards, and hands-on tools that help promote interaction and faster learning with better comprehension (Eady & Lockyer, 2013). Teaching aids are an integral component of any classroom. There are many benefits of teaching aids, including helping learners improve reading comprehension skills, illustrating or reinforcing a skill or concept, differentiating instruction and relieving anxiety or boredom by presenting information in a new and exciting way. Teaching aids also engage students' other senses since there are no limits on which aids can be utilized when supplementing a lesson. There are many aids available at present. They can be classified as 1) Visual aids, which use the sense of vision, for example, actual objects, models, and pictures; 2) Audio aids that involve the sense of hearing, for instance, radio, tape recorder, etc. 3) Audiovisual aids - aids which involve the senses of both vision and hearing, including television, film projectors, film strips etc. (Đurđanović, 2015). Moreover, a number of research studies, such as Konomi (2015), claim that using visual aids can help learners understand the deeper meaning of a topic and realize similarities and differences of varied topics. Also, the studies assert that pupils expect their English lessons to be 'visual' because language they experience outside the classroom is strictly connected with images, colors, and sounds. Furthermore, Shabiralyani et al. (2015) conducted research on the impact of visual aids on the learning process.

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The findings indicated that the majority of teachers and students had positive perceptions of the use of visual aids.

The use of technology in classrooms

Technology use in education is becoming an increasingly important part of higher and professional education. This emergence has resulted in the classroom setting transforming from whiteboard-and-markers-only, into a "smart" classroom. One of the factors influencing the integration of technology in classrooms is teachers' positive attitudes towards technology. Moreover, such integration holds promise since the new-generation students were born into the era of today's technology. Prensky (2001) defines 'Digital Natives' as the new generation—those who were born as native speakers of the digital language of computers, video games and the Internet. On the other hand, older teachers are 'Digital Immigrants' who speak an outdated language (that of the pre-digital age), and must learn the new language as a compromise. For this reason, teachers currently endeavor to integrate technology in classrooms in order to serve the students' needs and engage them in lessons.

Technology integration is a very broad concept and has several aspects. Thus, the present researchers sorted previous studies into two different categories:

1. Technology integration and its impacts on students and teachers

Many researchers have explored technology integration projects worldwide and reported positive impacts on teaching and learning.

Lin et al. (2017) aimed to examine opinions of digital learning among 116 students in 4 classes. The results asserted that 1) digital learning presents better positive effects on learner motivation than traditional teaching does; 2) it shows better positive effects on learning outcome than traditional teaching does; 3) learner motivation reveals significantly positive effects on learning effect in learning outcome; and 4) learner motivation appears to have remarkably positive effects on learning gain in learning outcome.

Bani Hani (2014) conducted a study with 200 English language teachers in Jordan in order to highlight the benefits of computer-assisted language learning. The findings revealed that the most essential benefits were providing immediate feedback, stimulating students' interest, motivating students' learning, more fun and exciting, initiating more interaction, and easy to control.

Asawaniwed and Boonmoh (2012) examined the attitudes of 39 first-year undergraduate students enrolled in LNG 102 English Skills and Strategies at King Mongkut's University of Technology Thonburi towards the use of blogs to perform writing tasks in an EFL course. The result showed that the majority of the students had a positive attitude and reported that they would be more motivated to perform online writing tasks compared to writing on paper. Despite the fact that most students are digital natives, a training session is recommended due to the lack of digital literacy of some students so that the issue of familiarity can be dealt with.

Almekhlafi and Almeqdadi (2010) investgated 40 female and 60 male teachers' technology integration from two schools in Al-Ain

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Educational Zone, Abu Dhabi, in the United Arab Emirates. The results showed that the teachers at both schools integrated a variety of technologies to promote students' learning in their classes' activities in spite of the barriers hindering such integration (e.g., technical problems, lack of professional development training, and lack of financial support).

2. Factors influencing and hindering teachers' technology integration in the classroom

Technology integration at schools and factors affecting such integration have drawn high interest among many researchers. A number of studies have been conducted to explore teachers' use of technology.

Agnes and Wallace (2010) investigated the factors affecting the use of ICT for teaching in the Western Cape schools in South Africa. Data was collected through in-depth interviews with 14 educators and two teachers. The three influencing factors were 1) levels of ICT literacy that contributed to limited use of technology; 2) accessibility to technology; and 3) sufficient equipment and technical support for using the technology.

Senaidi et al. (2009) conducted a study to investigate barriers to adopting ICT in Omani higher education. One-hundred faculty members from four different departments at the College of Applied Sciences in Oman participated in the study. The participants took a survey, which was developed based on Western literature. Five factors were found from the survey: lack of equipment, lack of institutional support, disbelief of ICT benefits, lack of confidence, and lack of time.

ChanLin et al. (2006) conducted a study to identify the factors affecting the use of technology in creative teaching practices of eight teachers who had won an award for creative teaching in a nationwide contest held annually in Taiwan. The participants were interviewed in order to identify the factors affecting their use of technology in creative teaching. The factors were identified and classified into four categories: environmental, personal, social and curricular factors. The environmental factor related to schools' computer facilities and budget for support of technology. Personal factors related to teachers' beliefs, interest in using computers and experience in using technology and trying new things also had potential impact on the use of technology. Resource supports from community and technology trends and social change were included as the social factor. In terms of curricular factor, skills, literacy, teaching load (time and effort to prepare classes) and control of using technology (ease or difficulty of use), were found.

Ahadiat (2005) examined the factors that influence or hinder use of instructional technology. A survey instrument was used to determine the factors that hinder the use of technology among 271 educators in California, USA. The findings revealed that the five important factors were lack of time, lack of technological support, lack of relevance to course materials, lack of administrative support, and lack of interest in technology.

Wat Nuannoradit School, the present researcher's current teaching context, was established in 1890. Some of its classrooms are not well-equipped with technologies, so it exemplifies the limitations of utilizing the technologies. However, it can be observed that most of the

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teachers who are responsible for English courses in the school's Department of Foreign Languages still strive to use technologies as teaching aids in their classrooms. On the other hand, some of them do not use the technologies in class. For these reasons, this study aims to examine whether or not teachers use technologies in Thai EFL classrooms, types of technology tools utilized by teachers, and factors facilitating and hindering their use of technologies in Thai EFL classrooms. The findings could be beneficial to teaching and learning through the technologies and assist in bridging the gap between Digital Native learners and Digital Immigrant teachers. Also, it will be useful for the readers who would like to perceive the trends of integrating technologies in Thai EFL classrooms.

In this study, the researcher refers technologies to teaching aids utilized in classrooms. Technologies in this study include software, namely Web 2.0 such as live materials (e.g. podcasts), social networking (e.g. Facebook and Twitter), applications on smartphones (e.g. dictionaries, game-based learning platform (e.g. Kahoot), learning management systems (LMS) such as Edmodo, Moodle, and Schoology), and Microsoft Office (e.g. Word, Excel, and Power Point presentations). In terms of hardware, it includes computers, Internet, mobile devices (e.g. smartphones and tablets), and audiovisual aids (e.g. audio, pictures, posters, videos, projectors, visualizers, portable CD players, interactive boards, and portable microphones).

Objectives of the study

This research aims to investigate types of technology tools utilized by English language teachers as well as factors that facilitate and hinder their use of technologies in Thai EFL classrooms at Wat Nuannoradit School, Bangkok.

Research questions:

1. Do teachers use technologies in Thai EFL classrooms? If yes, how do the teachers use them? If no, why?

2. What are the factors that facilitate or hinder the teachers' use of technologies as teaching aids in Thai EFL classrooms?

Methodology

Participants

The participants of this study consisted of 12 teachers of English courses at the Department of Foreign Languages at Wat Nuannoradit School, Bangkok, in academic year 2017, all of whom participated in the study on a voluntary basis. The criteria for selecting the participants were the number of years of teaching experience, divided into three different ranges, namely 1-5 years, 6-10 years, and more than 10 years. From these 12 teachers, six teachers teach at the lower secondary level and the remainder teach at the higher secondary level. Due to the limitation of facilities, they teach in both typical classrooms (i.e. having only a whiteboard) and fully equipped classrooms (i.e. having a computer, an amplifier with a microphone, a projector, a visualizer, an interactive board, and Internet access).

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Instrument

The instrument of this study was a semi-structured interview. The objective of the semi-structured interview was to investigate types of technology tools utilized by EFL teachers, as well as factors that facilitate or hinder their use of technologies in Thai EFL classrooms. The questions for the interview were composed within two areas as follows:

1. Types of technology tools that are utilized by Thai EFL teachers.

2. Factors that facilitate or hinder the teachers' use of technology in Thai EFL classrooms.

Procedure

Firstly, interview questions were designed and checked by the advisor. Secondly, they were piloted by two teachers from a different school to improve their clarity and correctness, and the necessary changes were made. Thirdly, the participants from the EFL teachers at the Department of Foreign Languages, Wat Nuannoradit School, were selected. Also, their consent was given before the interviews were conducted. Next, the semi-structured interviews, which each lasted 20-30 minutes, were conducted in individual sessions to collect the data in order to answer the research questions. Then, the collected data was analyzed by transcribing and categorized into themes. Finally, the research was written up.

Data analysis

In this study, the data was obtained by semi-structured interview. The interview questions consisted of closed and open-ended questions; there were 7 items. During the interview, the participants' voice was recorded with

the use of a recording program in a smartphone application. After the semi-structured interviews were conducted, the data was transcribed and categorized into themes based upon two main areas, which are:

    1. Types of technology tools that are utilized by Thai EFL teachers.

    2. Factors that facilitate or hinder the teachers' use of technology in Thai EFL classrooms.

The data is presented in sets of tables as follows:

    1) Table 1: Teachers' backgrounds and their use of technology

    2) Table 2: Types of technology used in the classrooms

    3) Table 3: Factors that facilitate the use of technology

    4) Table 4: Factors that hinder the use of technology

    5) Table 5: Reasons why teachers use technologies

Data presentation and interpretation

    It can be seen in Table 1 that all 12 participants have different levels of teaching experience, which can be divided into three groups, namely 1-5 years, 6-10 years, and more than 10 years. It is shown that all of the participants have earned a bachelor's degree in English education. Moreover, five participants held a master's degree in educational administration and curriculum and instruction. In terms of technology integration in the classrooms, all participants utilized technology tools in the class.

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Table 1: Teachers' backgrounds and their use of technology

Participants	Years of teaching	Degree		Use of Technology
		BA	MA	
T1	1.6	√	-	Yes
T2	5	√	-	Yes
T3	5	√	√	Yes
T4	2.6	√	-	Yes
T5	8	√	-	Yes
T6	6	√	-	Yes
T7	10	√	√	Yes
T8	10	√	√	Yes
T9	12	√	√	Yes
T10	28	√	-	Yes
T11	29	√	-	Yes
T12	24	√	√	Yes

Table 2 illustrates two main types of technology that are used in the classrooms. The first type is hardware, which is composed of 11 tools which are utilized by the teachers. Another type is software, which consists of 9 tools. Each type of technology is arranged in order of the total number of teachers who use it.

Table 2: Types of technology used in the classrooms

Technology used by teachers		T 1	T 2	T 3	T 4	T 5	T 6	T 7	T 8	T 9	T 10	T 11	T 12	Total
Hardware	Computer	√	√	√	√	√	√	√	√	√	√	√	√	12
	Audio	√	√	√	√	√	√	√	√	√	√	√	√	12
	Internet	√	√	√	√	√	√	√	√	√	√	√	√	12
	Amplifier + Microphone	√	√	√	√	√	√	√	√	√	√	√	√	12
	Projector	√	√	√	√	√	√	√	√	√		√	√	11
	Smartphone	√	√	√	√	√	√	√		√			√	9
	Visualizer	√	√	√		√	√	√				√		7
	Portable CD player	√						√		√				3
	Poster	√	√									√		3
	Interactive board				√									1
	Portable microphone						√							1
	Total	9	8	7	7	7	8	8	5	7	4	6	7	
Software	MS Word	√	√	√	√	√	√	√	√	√	√	√	√	12
	MS Power Point	√	√	√	√	√	√	√	√	√		√	√	11
	Line		√	√	√	√				√			√	6
	Facebook				√					√				2
	Kahoot		√										√	2
	Thai-Dict		√						√					2
	Zip grade			√										1
	Echo English	√												1
	Edmodo						√							1

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Technology used by teachers	T 1	T 2	T 3	T 4	T 5	T 6	T 7	T 8	T 9	T 10	T 11	T 12	Total
Total	3	5	4	4	3	3	2	3	4	1	2	4	
Total (Hardware + Software)	12	13	11	11	10	11	10	8	11	5	8	11	

For hardware, it can be seen that most of the teachers use computers, audio, Internet, and amplifier with microphone in the classrooms. For software, it shows that Microsoft Word and Power Point are most often used by the teachers. Since each teacher teaches in both types of classrooms, the hardware and software that they reported using could refer to the tools they use when teaching in the fully-equipped classroom setting.

In accordance with the technology tools used by the teachers, it can be seen that MS Word, computer, audio, Internet, and amplifier with microphone are incorporated in the class by all teachers as these are regarded by everyone as basic tools. However, only some of the cutting-edge tools and applications, such as smartphones, interactive board, Line, and Facebook, are being integrated in the classrooms.

It can be concluded that Teachers 1 to 7, who have 1-9 years of teaching experience, integrate many kinds of technology tools in the classroom. Also, it is notable that Teachers 10 and 11 who have more than 10 years in teaching experience utilize only 5-8 types of tools that show a marked contrast with the new-generation teachers. Nonetheless, Teachers 9 and 12 using a greater number of tools could be because of their personal interest. Moreover, they may be keen on updating

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themselves with new technology tools.

Table 3 presents the factors facilitating the teachers' use of technology; there were 44 mentions of such factors. Convenience was found to be the most prominent factor, which was mentioned 13 times or 29.54 percent of all mentions. Additional prominent factors are enhancing students' understanding, stimulating students' interest, and being a cutting-edge tool, in declining order of importance. As can be seen in Table 3, several factors were mentioned only one time, or 2.27 percent.

Table 3: Factors that facilitate the use of technology

Factors	Hardware										Software									Total Mentions
	Computer	Audio	Internet	Projector	Smartphone	Visualizer	Portable CD player	Poster	Interactive board	Portable mic.	MS Word	MS Power Point	Line	Facebook	Kahoot	Thai-Dict	Zip grade	Echo English	Edmodo	
Convenience	√		√	√	√	√	√			√	√	√	√	√		√	√			13 29.54%
Enhancing students' understanding			√	√	√	√	√	√	√		√	√								9 20.45%
Stimulating students' interest			√	√	√				√			√			√					6 13.64%
Being a cutting-edge tool				√					√		√	√								4 9.09%

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Factors	Hardware										Software									Total Mentions
	Computer	Audio	Internet	Projector	Smartphone	Visualizer	Portable CD player	Poster	Interactive board	Portable mic.	MS Word	MS Power Point	Line	Facebook	Kahoot	Thai-Dict	Zip grade	Echo English	Edmodo	
Sharing useful files and content													√	√						2 4.55%
Searching for information and vocabulary					√											√				2 4.55%
Listening to native speakers' sound		√																		1 2.27%
Having a variety of features														√						1 2.27%
Having a variety of sources			√																	1 2.27%
Having informal talk													√							1 2.27%
Building pleasant atmosphere															√					1 2.27%

44 (100%)

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Factors	Hardware										Software									Total Mentions
	Computer	Audio	Internet	Projector	Smartphone	Visualizer	Portable CD player	Poster	Interactive board	Portable mic.	MS Word	MS Power Point	Line	Facebook	Kahoot	Thai-Dict	Zip grade	Echo English	Edmodo	
Promoting professional development															√					1 2.27%
Practicing English conversations																		√		1 2.27%
Creating learning community																			√	1 2.27%
Total mentions	1	1	4	3	5	2	2	1	2	2	1	4	5	3	3	2	1	1	1	44

The participants most often thought that the factor that facilitates their use of technology is convenience, as can be seen from the interview of Participant 1:

"In my own view, when we integrate technology tools into the classrooms, it makes the class interesting and enjoyable. Also, it is very convenient for me to download teaching materials such as pictures, videos, audios, and information from the Internet that can be adapted to be used in the class."

(Participant 1)

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The second most-prominent factor is enhancing students' understanding. The participants indicated that integrating technology, such as Power Point, Internet, visualizer, and smartphones, can help simplify complicated lessons. An interview excerpt from Participant 2 supports this:

"From my own teaching, I have been integrating technology into my class. I can notice that using technology such as Power Point, Internet, and a smartphone can make my lessons simpler. For example, I have tried to use Power Point in my class to help my students follow and understand lessons easier."

(Participant 2)

The third most-prominent factor is stimulating students' interest. The participants mentioned that using technology, for example the Internet, smartphone, and interactive board, can attract students' interest, as shown in an excerpt from Participant 9:

"When I use Internet in my class, I have found that most of the students pay attention to my teaching a lot. For instance, I search video clips about teaching pronunciation through YouTube that can draw their interest effectively. I think it is because they can watch and listen at the same time."

(Participant 9)

Being a cutting-edge tool is the last key factor. The participants pointed out that one of the factors that facilitates them to integrate

technology in the classroom is using a smartphone, Line, and interactive board, which are regarded as cutting-edge tools. Some of the teachers mentioned that these kinds of tools can increase student engagement and retention. An interview excerpt from Participant 5 supports this:

"In my class, I try to incorporate new technology tools in the lessons. For instance, I allow my students to use Internet in a smartphone to search for information. Moreover, I have found that using this kind of tool can engage my students' interest in the classes."

(Participant 5)

It can be seen in Table 4 that there were 28 mentions which showed factors hindering the teachers' use of technology. These limiting factors are grouped into three main categories, which are 1) Teacher; 2) School; and 3) Student.

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Table 4: Factors that hinder the use of technology

Factors	Hardware							Software				Total Mentions		
	Audio	Internet	Amplifier + Mic.	Projector	Smartphone	Visualizer	Interactive board	MS Power Point	Line	Facebook	Kahoot			
Lack of knowledge to use								√	√			2		
Preferring face-to-face communication								√				1		28 (100%)
Having no privacy for teachers									√			1		
Having no time for preparation							√					1		
Messages disappear quickly								√				1		
Being hard to control students while using					√							1		
Having no adequate technology literacy										√		1		
School — Having no facilities provided	√	√	√	√	√		√				√	7	9	
School — Facility deterioration					√		√					2	-32.14%	
Student — Students' lack of attention	√	√						√	√			4	7	

Factors	Hardware							Software				Total Mentions
	Audio	Internet	Amplifier + Mic.	Projector	Smartphone	Visualizer	Interactive board	MS Power Point	Line	Facebook	Kahoot	
Students with no smartphone					√				√		√	3 -25%
Total mentions	2	1	2	1	2	3	1	4	5	3	4	28

The most-often mentioned factor is the teacher. Twelve out of 28 mentions, or 42.86 percent, were related to teachers. So, it can be concluded that the participants considered the teachers themselves to be the main factor in limiting their use of technology. Participants' answers that were categorized as "Teacher" touched upon two main factors: 1) not confident to use technology; and 2) lack of knowledge to use it. Interview excerpts from Participants 10 and 11 support this:

> "From my direct experience, I have many chances to teach students in well-equipped classrooms that provide many kinds of tools such as a projector, a visualizer and Power Point. However, I am not comfortable in using them because I always feel awkward when dealing with technology tools."

> (Participant 10)

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"Currently, there are many new tools to be incorporated into teaching. Conversely, sometimes I ignore to use them since I do not know how to use them. For example, an interactive board is quite difficult to use, so I decided not to use it. I think there should be a training for teachers."

(Participant 11)

The second aspect to be discussed is the school. In Table 4, there are nine mentions of school, or 32.14 percent of all mentions. Participants' answers mentioning the school were grouped into two factors: having no facilities provided, and facility deterioration, as can be seen in an excerpt of the interview from Participant 8:

"I am one of the teachers trying to utilize technology in the classroom, but I think the factor that hinders my use of technology is that there are no facilities such as a projector and Internet that are provided for teachers to use in the classroom."

(Participant 8)

The third aspect hindering the use of technology is the students. Table 4 shows that students' lack of attention and students with no smartphone are two factors impeding the use of technology, with seven mentions, or 25 percent of all mentions. An interview excerpt from Participant 7 supports this:

"When I play an audio recording to have students practice their listening skills, they do not pay close attention to it. So, this can frustrate me a lot. Sometimes, I refrain from having them listen."

(Participant 7)

As shown in Table 5, there were 46 mentions from the participants in answering why teachers use technologies. In this table, four notable reasons that promote them to use technologies in classrooms were found. Convenience is the most often mentioned reason, at 12 times or 26.08 percent of all mentions. Interestingly, all of the participants gave convenience as a reason, a relatively high number. The second most-common reason, mentioned 10 times or 21.74 percent, is stimulating students' interest. Thirdly, promoting professional development (self-development) was mentioned 8 times, or 17.40 percent. Finally, promoting English teaching and learning was mentioned 7 times, or 15.21 percent.

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Table 5: Reasons why teachers use technologies

Participants Reasons	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	Total mentions	
Convenience	√	√	√	√	√	√	√	√	√	√	√	√	12	**26.08%**
Stimulating students' interest	√	√		√	√	√	√	√		√	√	√	10	**21.74%**
Promoting professional development (Self-development)	√			√	√	√	√		√		√	√	8	**17.40%**
Promoting English teaching and learning	√	√	√			√			√		√	√	7	**15.21%**
Promoting independent learning						√		√				√	3	**6.52%**
Promoting positive attitude in students		√						√					2	**4.34%**
Saving paper			√					√					2	**4.34%**
Effective teaching aids in classrooms			√										1	**2.17%**
Promoting students' creativity								√					1	**2.17%**
Total mentions	4	4	4	3	3	5	3	4	5	2	4	5	46	

46 (100%)

The first outstanding reason is convenience. Twelve out of 46 mentions, or 26.08 percent, were related to convenience. So, it can be concluded that the majority of participants thought that convenience is a significant reason why they use technologies in the classrooms. An interview excerpt from Participant 12 supports this:

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"Technology can save my time when I prepare teaching materials. I can simply download useful teaching stuff from the Internet. Furthermore, the Zip Grade application can help me mark students' answer sheets. I think it is very convenient."

(Participant 12)

The second most-prominent reason is stimulating students' interest. In Table 5, there were 10 mentions, or 21.74 percent of all mentions. The participants considered utilizing technologies in the classroom since it can stimulate students' interest. An excerpt from the interview of Participant 4 supports this:

"I believe that integrating technology into the classroom can increase students' motivation and interest. To illustrate, I use Power Point, video clips, and Internet. It can be noticed that most of them are engaged."

(Participant 4)

The third key reason is promoting professional development (self-development). There were eight mentions, or 17.40 percent of all mentions. Table 5 showed that there were eight participants who claimed that they use technologies in order to promote their professional development. An excerpt from the interview of Participant 6 supports this:

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"I think that embracing modern teaching techniques and technology materials is essential for 21st century education. In my teaching, I have tried to integrate technology in my class to be a teacher in the digital era, and also promote my professional development."

(Participant 6)

The last prominent reason to be discussed is promoting English teaching and learning, which was mentioned seven times, or 15.21 percent of all mentions. The relevant interview excerpt from Participant 3 is as follows:

"In my point of view, using technology tools can make English classrooms interesting. For example, we can use pictures from online resources to help students understand the meaning of vocabulary more simply. Also, it can establish positive attitudes towards English."

(Participant 3)

Discussion and recommendations

The findings of this investigation show that all of the teachers have integrated technologies in their classrooms. It was found that when teaching in the fully-equipped classroom setting, most of the teachers have confidence in utilizing technology tools. For hardware, they mostly use computers, audio, Internet, and amplifier with microphone. For software, it shows that Microsoft Word and Power Point are the main

tools used by the teachers. The four most often-cited factors that facilitate their use of technology are convenience, enhancing students' understanding, stimulating students' interest, and being a cutting-edge tool. On the other hand, it can be seen that a few teachers with more than 10 years of teaching experience lack the confidence and knowledge to use the technology tools such as visualizers, interactive boards, and Microsoft Power Point when teaching in the fully-equipped classrooms. Moreover, when teaching in typical classrooms that lack facilities, the teachers cannot incorporate any technology tools in those classrooms. Thus, this factor hinders their overall use of technology. Another main factor that hinders the teachers' use of technology is the students' lack of attention. To illustrate, when the students are asked to listen to audio recordings, they do not pay attention. Therefore, it can be concluded that the three main factors hindering the use of technology are lack of confidence and knowledge to use technology tools, having no facilities provided in typical classrooms, and students' lack of attention.

Looking at the technology tools used by the teachers, it can be seen that certain types of tools, both hardware and software such as Microsoft Word, Power Point, audio, computer, amplifier with microphone, and Internet, are most-often utilized in the classrooms because these tools are generally regarded as fundamental tools. On the other hand, only some of the state-of-the-art tools such as smartphones, Line, Facebook, and interactive board are presently being integrated in the classrooms.

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Regarding the findings, they show that the teachers with 1-10 years of teaching experience generally utilize the greatest variety of technology tools in the classrooms. On the other hand, the teachers who have more than 10 years of teaching experience integrate a smaller number of technology tools in the classrooms. However, Teachers 9 and 12, both having more than 10 years of teaching experience, use a greater number of tools, perhaps because of their personal interest in technology.

The reasons why the teachers utilize technology are in accordance with Abukhattala (2016), who claimed that teachers used technology because it motivated students, stimulated students' interest, and offered a different mode of presentation, while factors hindering the participants' use of technology were also found, namely a lack of access to equipment, a lack of professional support, and their own lack of confidence in their computer skills.

Prominent factors that facilitate the teachers' use of technology in the classrooms were found. According to the findings of this study, the factors that facilitate teachers' use of technology are convenience, enhancing students' understanding, stimulating students' interest, and being a cutting-edge tool. This finding can be supported by the previous study of Bani Hani (2014) which claimed that the use of technology offers convenience. For instance, it can provide immediate feedback. Also, the use of technology can stimulate students' interest, establish an exciting atmosphere and more fun in class, initiate more interaction, and control the class more easily. Moreover, ChanLin et al. (2006) pointed out the factors that influence the teachers' use of technology were

environmental, personal, social and curricular factors. Particularly, in terms of personal factors, teachers utilize technology since it can engage students' interest and increase learning motivation as well as understanding.

Nonetheless, the findings of this study reveal that factors hindering the teachers' use of technology were found. Firstly, two main factors caused by teachers were the lack of both confidence and knowledge in their use of technology. Secondly, no facilities provided in the classroom, and facility deterioration, were the main factors caused by the school. In support of these findings, Senaidi et al. (2009) claimed that lack of equipment, lack of institutional support, disbelief of ICT benefits, lack of confidence to use technology tools, and lack of time were five factors that hinder teachers' use of technology in the classroom. Finally, the students are the third aspect hindering the use of technology in classrooms. Students' lack of attention and students without a smartphone are two factors impeding the use of technology. These findings can be supported by Ahadiat (2005), who concluded that the five important hindering factors were lack of time, lack of technological support, lack of relevance to course materials, lack of administrative support, and lack of interest in technology.

Implications

The main finding with regard to pedagogical implications is that technology as teaching aids can serve as an effective tool in teaching and learning English. Also, technology can promote students' understanding while stimulating their interest, and promote the

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professional development of teachers. Thus, the followings are some of the pedagogical implications drawn from the findings of this study.

1. Teachers should utilize technology to support learning and teaching. Also, it can be implied that when teachers effectively integrate technology into subject areas, teachers grow into the roles of advisor, content expert, and coach.

2. To be a teacher in the digital era, teachers should be more open-minded about embracing technology in the classrooms.

3. In the near future, all classrooms are likely to be equipped with full facilities. Then, teachers can maximize student learning and support further technological integration.

4. Technology can help make teaching and learning more meaningful and fun. Moreover, students can collaborate with their classmates through technological applications.

5. Institutional support should play a significant role, improving systems for checking and maintaining classroom technologies.

6. Institutions should encourage the acquisition of highly reliable technologies for use in classrooms, and organize workshops for teachers about the integration of technology in classrooms.

Limitations

There were some limitations in carrying out this research. Firstly, the participants in this study were a highly specific group of teachers and teaching context. In other words, types of technology tools used by language teachers as well as factors that facilitate and hinder their use of technologies in Thai EFL classrooms were investigated from only a single,

particular group of language teachers. Consequently, the results cannot broadly represent teachers' use of technology. Secondly, the data was obtained by implementing semi-structured interviews. Therefore, the data provided by the participants was perhaps inexact. For instance, the participants might not have stated which technologies they have actually integrated into the classrooms.

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