A Close Look at the Use of Technology by Thai Teachers in Secondary EFL Classrooms

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Abstract

This study investigated how teachers in Thai secondary schools integrated networked education technology tools in their classrooms; it is a sequel study to Boonmoh et al.'s (2021) examination of how teachers used and perceived such technology. This study also explored networked education technology tools, considered their teaching contexts, and highlighted how teachers created content and used it in their teaching. In-depth interviews were conducted with 12 teachers in secondary schools of the Secondary Educational Service Area Office 33 (Surin Province), in the Northeastern Region of Thailand. A number of factors are believed to affect the use of technology in Thai secondary schools, such as class size, institution size, and use-value. However, the major factors identified in this current study were related to institution size (which may also affect class size) because the participants were from different-sized secondary schools. Their perceptions towards the use of technology were differentiated by school size. These teachers were from small- and medium-sized secondary schools in eight districts of Surin. Their use of the networked education technology tools was analysed based on the types of tools/applications used, types of activities, and topics of their use. The findings revealed that all 12 teachers knew technological tools and integrated technology to facilitate their use as classroom learning resources. Kahoot was the most used application in the classrooms. The use of technology was influenced by various aspects: students' motivation, real-world integration, students' familiarity, teachers' self-development, time-saving, and the current circumstances (the COVID-19 pandemic). Their main purposes in using these tools were motivating and engaging students, preparing for tests, and career advancement. Most activities created in the applications were used as games or tests rather than for lessons. Based on these findings, pedagogical implications are discussed.

Keywords: EFL classrooms, Teacher use of technology, Networked educational technologies

Introduction

In 2019, a training workshop on "Secondary Teachers and Technology Integration" was conducted to train Thai secondary teachers from all 17 districts in Surin Province in northeast Thailand (Boonmoh et al., 2021). The workshop aimed at increasing teachers' knowledge of how to use technology in the classroom. During the workshop, two of the researchers investigated teachers' experiences and perceptions in using technology in their classrooms. The researchers then produced a research study entitled "Teachers' Perceptions and Experience in Using Technology for the Classroom" (Boohmoh et al., 2021). The results showed that the teachers seemed willing, ready, and eager to prepare themselves for integrating technology into their classes. The majority of the participants had already used technology in the form of computers or mobile devices. More importantly, the teachers could see the importance of technology integration, which refers to the use of technology in the classroom. The integration seemed to be beneficial for both the teachers and students because there was a positive influence on English as a foreign language (EFL) classrooms (Hwang & Wu, 2012; Jones, 2001; Jumpakate & Rungruangthum, 2020; Toyoda, 2001). Although the previous study demonstrated positive perceptions towards technology integration in classrooms and some efforts at technology integration, there remains the need for insight into how technology is actually integrated into specific classroom settings. Regarding the major stakeholders of this study, teachers in secondary schools in Thailand encountered different challenges and needs related to the size of their schools.

A number of factors can affect teachers' use of technology in classes, such as their perception of the value of its use (i.e., use value), other beliefs, limited facilities, class sizes, and difficulties in using the technology. These and other factors could lead the teachers to have positive or negative perceptions towards the use of technology. In this study, perceptions and practices were connected in diverse ways: sometimes aligned and sometimes not. Regardless of their setting, some participants reported positive attitudes that expressed a willingness to apply technology in their classes and others who expressed an unwillingness. Thus, there was a clear distinction between the perceptions, referring to the attitudes towards the use of technology, and the practices, meaning how the teachers implemented the technology in their classes.

Use value and motivation were aligned with the teachers' practices; as one participant from a small-sized school reported, they were highly motivated to make the best out of the limited facilities available. It is inferred that use-value and motivation were factors that directed the teachers' practices.

Therefore, insightful information about teachers' decisions to use technology in classrooms, as well as their perceptions of technology integration, are worth investigating. More specifically, the current research study served to answer questions regarding the perception of the teachers and use value, factors that shape their perceptions and use-value, and the relationship between perception and practice. The previous study relied solely on questionnaire data and lacked more detailed information from interviews. This paper, therefore, provides a more in-depth study of the teachers' specific uses of technology in their classrooms, with the resulting data gathered by screenshots or captured from the participants' mobile phones or computers.

Review of Literature

Convergence of Technology and Education

Technology has become a significant tool in the classroom since the 1980s due to several extrinsic and intrinsic factors (Blackwell et al., 2014; Nim Park & Son, 2009). There are a number of factors that affect the integration of technology in education, namely the expansion of global economic competition (Leu & Kinzer, 2000; Mundy et al., 2012), facilities (Abbott, 2001; Leu & Kinzer, 200), teachers' willingness (Alonso et al., 2019; Khamprem & Boonmoh, 2019; Taghizadeh & Hasani Yourdshahi, 2020), students (Kannan & Munday, 2018; Petersen & Sachs, 2015), and policies from both governmental and institutional contexts (Buasuwan, 2018; Goodman, 2017; Vungthong et al., 2017; Wiangsima & Boonmoh, 2018).

The first and most important factor that has influenced the growth of technology's use by teachers in classrooms is the expansion of global economic competition. This competition within the world economy has been implemented due to the effective use of information and communication technology (ICT); technology was then introduced into the field of education to improve its effectiveness. Several studies have emphasized how technology can contribute towards genuine learner autonomy, improved communication skills, positive study attitudes and motivation, and students' learning interests (Hwang & Wu, 2012; Jones, 2001; Jumpakate & Rungruangthum, 2020; Toyoda, 2001). With a potentially positive impact on education, instructors have been encouraged by the global economic competition to use technological tools in classes to teach their students (Leu & Kinzer, 2000).

The second factor that has influenced teachers to use technology is the increased availability of the necessary facilities, such as the internet, technological tools, and devices. The most important manifestation of the use of technology in an educational context is networked technologies, such as the internet. Johnson and Germain-Froese (2016) clarified that networked technologies in education include social networking of in-class settings and out-of-class settings. More importantly, social networking can include online games, educational social networking platforms (e.g., Kahoot, Padlet, Quizizz, and Edmodo), and general social network platforms (e.g., Facebook, Twitter, TikTok, and Snapchat). Therefore, the convergence of teaching with networked technologies is fundamentally reshaping and changing education, as teachers are required to prepare students by exposing them to technological tools so that they will be ready for the future labour market in the globalization era (Abbott, 2001; Leu & Kinzer, 2000).

Global economic competition and facilities are not the only major factors that have influenced teachers to use technology in their classes. Teachers' willingness is also considered a major factor, as teachers are the ones in class who will be using or guiding the use of technological tools. Their intrinsic motivation, which is defined as behavior motivated by internal rewards (Dörnyei, 1994) drives them to use or not use technology in their classes.

From previous studies (Alonso et al., 2019; Khamprem & Boonmoh, 2019; Taghizadeh & Hasani Yourdshahi, 2020), scholars have suggested that teachers' willingness was a crucial factor towards technology integration. Taghizadeh and Hasani Yourdshahi (2020) stated that most Iranian teachers of language institutes and schools were not provided with training courses regarding technology integration in young learners' classes; however, the teachers were ready to participate in any technology-based professional development programmes if provided. Similarly, Alonso et al. (2019) reported that pedagogical beliefs and evaluation were related to the adoption and assessment of digital tools used by Chilean teachers. Moving to a Thai context, Khamprem and Boonmoh (2019) concluded that teachers' willingness to integrate technological applications in class depended on their stated needs; in other words, the teachers were willing to integrate technology in classrooms provided that they were given professional development programmes that matched their needs.

Another factor that expanded the use of technology in education was the students. Nowadays, students in higher educational contexts are considered "digital natives". Students aged approximately 18–21 can use technology easily because they have had access to it their whole lives. Also, these students can access resources from the internet easily. Prensky (2001) first introduced the term "digital natives" to represent those people who have grown up with technology as an integral part of their everyday lives. To teach these students, using technology in the classroom has become an effective educational approach (Kannan & Munday, 2018; Petersen & Sachs, 2015).

Apart from the three factors mentioned, policies in governmental and institutional contexts have also impacted the greater implementation of ICT use in educational contexts (Buasuwan, 2018; Wiangsima & Boonmoh, 2018). Similar to other countries, Thai teachers have been encouraged to apply technological tools in their classes as well as to attend training workshops related to technologies (Boonmoh et al., 2021). The Thai government has promoted the use of ICT in Thai education due to its benefits, which has resulted in the implementation of computer-assisted language learning (CALL) and mobile-assisted language learning (MALL) in Thai education contexts (Boonmoh et al., 2021).

In a Thai context, some of the factors controlling the direction of English language teaching (ELT) in the future will include educational policies, as previous studies have suggested (Goodman, 2017; Vungthong et al., 2017; Wiangsima & Boonmoh, 2018). In Thailand, previous studies (Goodman, 2017; Vungthong et al., 2017) have shown that educational policies play a significant part in influencing teaching practice. The current educational policies focus on a number of top-down initiatives. According to the 12th National Economic and Social Development Plan (B.E. 2560–2564), based on a national strategic framework, Thailand's education management has undergone a paradigm shift (B.E. 2560–2579). This is a country development master plan aimed at achieving sustainable development goals (SDGs), which include Thailand's reorganization for technology implementation in industrial and educational contexts. This policy requires teachers and educational personnel to adapt themselves to dramatically change following the National Education Plan (B.E. 2560–2579) regardless of the teachers' settings and

contexts. In other words, the National Education Plan (B.E. 2560–2579) supports a 'one size fits all' concept (Saekhow & Cheewaviriyanon, 2021). Consequently, institutional policies to promote the use of technology in classrooms have influenced administrators, including school principals (Goodman, 2017). Administrators who have agreed to implement government policies are likely to support teachers' use of technology (Vungthong et al., 2017).

These factors have resulted in the widespread adoption of a range of new technological tools in the classroom (Johnson & Germain-Froese, 2016). Networked technologies are now an important teaching tool, promoting learners to interact with each other, with teachers, and with learning resources (Goodyear, 2001; Johnson & Germain-Froese, 2016; Yang, 2007). However, networked technologies need to be integrated into classes with the support of network hardware, such as desktop computers, tablets, and laptops (Johnson & Germain-Froese, 2016). Networked learning supports the autonomous learning of today's language students by connecting them with global resources (Kannan & Munday, 2018).

Both students and teachers need to have positive attitudes (e.g., a willingness to use technological tools, an eagerness to learn about technological tools) towards the use of technologies for networked technologies to be successfully incorporated into teaching. Many studies have focused on students' perceptions of technology use in classes (Hwang & Wu, 2012; Jones, 2001; Jumpakate & Rungruangthum, 2020; Toyoda, 2001). Conversely, a limited number of scholars have investigated teachers' perceptions and uses of technologies in classes. Furthermore, most studies of teachers are based on tertiary levels, where university lecturers are the main participants. Little is known about secondary school teachers' perceptions and their uses of technologies in classes.

There have been related studies regarding teachers' use of technology. Several studies have been conducted using surveys to reveal teachers' perceptions regarding the use of technology (Alonso et al., 2019; Liu et al., 2018; Taghizadeh & Hasani Yourdshahi, 2020; Uzunboylu & Ozdamli, 2011). Teachers' perceptions from Asian and European contexts are similarly based on Uzunboylu and Ozdamli's (2011) and Liu et al.'s (2018) studies, respectively. Both studies investigated teachers' perceptions of technology integration via surveys. While mobile learning (m-learning) was the focus of Uzunboylu and Ozdamli (2011), Liu et al. (2018) examined the relationships between Chinese language teachers' instructional use of technology and their perceptions. The results from both studies are in alignment because the teachers in both implied that their perceptions affected their practices. Uzunboylu and Ozdamli's (2011) results showed that the Cypriot teachers' perceptions of m-learning were related to the teachers' feedback on three facets of m-learning, namely the aims of mobile technologies, mobile technologies' appropriateness, and forms of m-learning application. In comparison, Liu et al. (2018) revealed that Chinese language teachers' use of technology could be predicted by two of three internal factors (technology's usefulness, its ease of use, and subjective norms) and one external factor (facilitating conditions).

A South American context is provided by Alonso et al. (2019). They investigated Chilean teachers' perceptions of the integration of technology in evaluation processes, focusing on their beliefs about learning, evaluation, and technology. The results showed that pedagogical beliefs and evaluation were related to the adoption and assessment of the digital tool used. It was also revealed that negative pedagogical beliefs, such as students' lack of autonomy to learn, limited data and digital resources, and difficulties in using technological tools, were barriers that influenced teachers' uses of technology. Taking a close look at an Iranian context, Taghizadeh and Hasani Yourdshahi (2020) examined the attitudes, knowledge, use, and challenges of Iranian English teachers of young learners to integrate technological tools into language classes. Most Iranian teachers of language institutes and schools did not have sufficient pedagogical and technological knowledge to use technology to teach the English language to young learners. Also, many teachers were not provided with training courses regarding technology integration in young learners' classes; however, they were willing to participate in technology-based professional development programmes.

From the previous studies above, it can be seen that recent scholars mainly focused on teachers' perceptions of the use of technology in classes via survey research. There are some strengths and weaknesses in using surveys to collect data related to teachers' use of technology. Surveys allow researchers to see numerical and general data (e.g., numbers, percentages, and trends), while other factors (e.g., context, experience, infrastructure, and policies) related to teachers' use of technology cannot be taken into account as easily through surveys. Regarding technological tools, most studies point out how teachers perceive technology integration and what technological tools were used in the class. Little research has been published that explored teachers' use of technology via in-depth interviews (Alonso et al., 2019; Liu et al., 2018; Taghizadeh & Hasani Yourdshahi, 2020; Uzunboylu & Ozdamli, 2011). Furthermore, the results from previous studies indicated that teachers' perceptions affected teachers' use of technology in classrooms, especially how the teachers actually used technology in the classes. Some previous studies also pointed out how facilities and training in educational settings affected teachers' use of technology. Thus, teachers' perceptions of technology, their use of technology, and their surroundings that affected the use were worth investigating. According to the perceptions and implementations of teachers from previous studies (Alonso et al., 2019; Liu et al., 2018; Taghizadeh & Hasani Yourdshahi, 2020; Uzunboylu & Ozdamli, 2011), teachers' perceptions were reflected in their practices. If the teachers view technology as a useful tool, they will consider integrating it into their classes. However, it would be problematic to generalize that all teachers who have positive attitudes will integrate technology into their classes. Some teachers may view technology as useful but do not use it in practice because of limited facilities, limited time, or difficulties with a specific technology platform (Blackwell et al., 2014; Nim Park & Son, 2009). Some teachers may use technology because of top-down policies, but they may use it only for a few activities and not take advantage of a technology's full potential (Khamprem & Boonmoh, 2019).

Although several types of studies are capable of providing the necessary information about how teachers use technology in various contexts, a questionnaire-based study has its own shortcomings, such as not being able to explore the reasons behind choices regarding technology use. A well-designed questionnaire may help to shed light on the in-depth perceptions of participants but require anticipating the types of responses that will be made. Semi-structured interviews were appropriate for this study as they allowed for more flexibility in the participants' responses; there was also not a need to reach so many participants that an interview approach was impractical. Although there was a set of pre-prepared guiding questions and prompts, the format was open-ended, and the interviewees were encouraged to elaborate on the issues raised in an exploratory manner. In other words, the interviewer provides guidance and direction but is also provided opportunities to probe further when it is warranted (Dörnyei, 2007); for example, interviewers can ask follow-up questions, which cannot be done through surveys (Patton, 1990).

For this reason, it was hoped that adopting another approach (an in-depth interview method along with observation) would be useful to better explain the manner of technology use integration in Thai secondary school contexts. Previous studies have indicated that factors related to facilities often block the use of technology in classrooms (Blackwell et al., 2014; Nim Park & Son, 2009). In Thai secondary school contexts, budgets for facilities are allocated based on school size. This could suggest that teachers in small- and medium-sized schools may face hurdles when it comes to technology integration. Because the government funds a school's infrastructure differently depending on its size, this may influence the teachers' use of technology (Office of the Teacher Civil Service and Educational Personnel Commission, 2011).

According to previous studies, school facilities affected the teachers' perceptions and use of technology in classrooms (e.g., Johnson & Germain-Froese, 2016; Liu et al., 2018). In Thai secondary level schools, facilities are provided to schools based on the school size (Office of the Teacher Civil Service and Educational Personnel Commission, 2011). Thailand has spent a significant portion of its national budget on education allocated to different-sized schools, but the outputs and consequences have been disappointing. A key problematic trend was related to serious inequalities and regional disparities regarding educational funding allocation (Fry, 2018).

From the aforementioned studies, sufficient or insufficient facilities were often found to be based on school size. Some previous studies analysed the effects of school size on school academic performance, including teachers' adoption of technology (Jones & Ezeife, 2011; Wu et al., 2008; Zoda et al., 2011). The results show the relationship between school size and teachers' and students' performance. Wu et al.'s (2008) study showed that teachers in small schools in Taiwan were more likely to employ technology in the classroom. The study also found that instructors in small schools had more positive attitudes towards technology use, and the teachers in small schools both planned and used many more instructional activities with technology. Conversely, some previous studies (e.g., Jones & Ezeife, 2011) have found no statistically significant correlation between school size and students' academic performance. Zoda et al. (2011) suggested that despite a plethora of published research studies (Bickel et al., 2001; Hager et al., 2006; Young &

Green, 2005), solid answers on the relationship between school size and student performance have yet to be found. School size decisions tend to be complicated, involving a number of considerations, such as expenditures, community support, and students with special educational needs. Previous studies have focused heavily on large or small schools, large versus small schools, and urban versus rural schools (e.g., Buaraphan, 2013; Kantabura & Tang, 2006); however, previous studies related to small- and medium-sized schools have been limited. They (Buaraphan, 2013; Kantabura & Tang, 2006) indicated that school size can affect teachers' perceptions regarding technology integration. Therefore, it is necessary to investigate the effect of school size on teachers' adoption of technology in classrooms in a Thai secondary context.

Types of Secondary Schools in Thailand

Taking a closer look at the Thai educational system with regard to school size, the Office of the Basic Education Commission of Thailand has divided primary and secondary schools in Thailand into four main types based on their size (Office of the Teacher Civil Service and Educational Personnel Commission, 2011).

Table 1
Description of secondary school types in Thailand

School Size	Number of Students
Small	1–499
Medium	500–1,499
Large	1,500–2,499
Extra-large	More than 2,500

The schools are not only different in terms of the number of students, but also in terms of budget allocation, facilities, infrastructure, and teacher expertise. This may suggest that teachers who work in small- or medium-sized schools may encounter some challenges concerning technology integration. The school size may influence teachers' use of technology because the funding regarding a school's facilities provided by the government varied by school size. The larger schools tend to be supported and funded by the government more than medium and small schools. So, it is interesting to see how teachers in small and middle-sized schools integrate technology in class with generally fewer resources in terms of facilities. In this study, to detail the teachers' use of technology, the researchers further explored which tools were used, how the tools were used, and the topics that were being covered. This study explored how Thai high school EFL teachers in schools of different sizes incorporated the use of technological tools in their secondary education classrooms.

Research Question

How do Thai high school EFL teachers in small- and medium-sized schools incorporate the use of technological tools in their secondary education classrooms?

Method

Participants

The participants were 12 Thai secondary school teachers from an original cohort of 126 from 56 schools in Surin Province (located in northeast Thailand). The participants were selected from a cohort of teachers who attended the "Secondary Teachers and Technology Integration" workshop in 2019. The workshop was organized by the Office of the Basic Education Commission (OBEC) and the Secondary Educational Service Area Office 33 (Surin Province). According to a critical review from a previous study of these individuals (Boonmoh et al. (2021), the teachers were from all 17 districts in Surin Province and were trained in how to use technology in the classroom, such as Facebook, Kahoot!, Mentimeter and Quizizz.

Because our current study focused on technology integration in an actual classroom setting, the researchers needed to find participants who met the following criteria:
1. According to a large-scale questionnaire (Boonmoh et al. 2021), know and already use some technology in the classroom
2. Work in either small- or middle-sized schools
3. Willing to participate in the study

The questionnaire responses revealed that of all 126 workshop attendees, 114 reported using at least one type of technological tool to support their teaching. Of these 114 attendees, 85 included their complete contact details on the questionnaire, and only 43 met the first two criteria listed above. With assistance from an educational supervisor, who is one of the researchers, the research team was able to contact the 12 teachers who volunteered to participate in this study. The 12 participants were reached and asked to complete in-depth interviews to report their perceptions and use of technology in the classroom. The participants were selected based on consecutive sampling because of accessibility and the need for voluntary participation (Martínez-Mesa et al., 2016). Due to ethical considerations, all target participants were asked to complete a consent form, and they had the right to withdraw from the study at any time.

Interviews

The main purpose of the interviews was to elicit the participants' reasons for using technology in their classrooms on a case-by-case basis. The interviews were conducted individually with each participant by the researcher. Each interview lasted

between 30 and 45 minutes. To provide a clear understanding of the data collection process, the questions used to guide the semi-structured interview were as follows:

- Can you describe for us the facilities that are provided in your school/classroom?
- Have you attended the "Secondary Teachers and Technology Integration" workshop?
- How many technological applications were introduced? Do you remember what they were?
- Which of these have you used in your teaching? Can you describe your experiences in using them?
- Why did you choose to use the applications you described?
- Were there specific reasons for using/ not using the other applications?
- What types of technology do you typically use at school?

These questions served only as a guideline for the interview. Open-ended questions allow the interviewer and participant to interact conversationally, while the interviewer ensures that the main areas of interest are addressed.

Data Analysis

The data in this study consisted of interview transcripts. They were examined for two purposes: (1) to identify the technological tools used to enhance teaching and learning by the participants and (2) to gain an understanding of how participants integrated technological tools into their teaching.

Regarding the first purpose, to identify technological tools used to enhance teaching and learning, the data reported by the teachers were listed and categorized as communication tools, applications, and teaching and learning platforms/learning management systems (LMS) used during the COVID-19 outbreak.

Regarding the second purpose, to identify an integration of technological tools in teaching and learning, the data were transcribed and reported based on the rationale of each teacher for choosing or not choosing technological tools to use in their classrooms. When the teachers indicated that they used technological tools, the rationale that influenced their use of technology was determined. The data from the interviews were divided into three groups based on the rationales described below.

Group 1: Turning Challenges into Opportunities
(Teachers' perceptions and practices were not aligned)

The participants in this group were from small-sized schools where there were only limited facilities, but the participants were able to integrate technology into their classes effectively.

Group 2: Making the Best Use Out of Everything
     (Teachers' perceptions and practices were aligned)

The participants in this group were from medium-sized schools with adequate support from the school's administrators. Thus, they used various technological tools, applications, and websites.

Group 3: Meeting the Standard
     (Teachers' perceptions and practices were both aligned and not aligned)

The participants in this group followed the policies defined by the government and administrators. They used technology only to reach the minimum standards as described by their schools. According to the keywords from the interviews, they did not use other websites, applications, or technological tools.

Results

The results of the study are divided into two parts: (1) technological tools used to enhance teaching and learning and (2) integration of technological tools in teaching and learning. The data in the first part are presented in themes and subthemes containing numerical data and descriptions. The data in the second part are presented based on the in-depth interviews, which provide a further explanation of the teachers' technology choices.

Table 2

Teachers' Use of Technology

Teachers (age)	Group 1		Group 2							Group 3			Total
	T1 (24)	T2 (33)	T3 (25)	T4 (26)	T5 (29)	T6 (32)	T7 (43)	T8 (51)	T9 (54)	T10 (26)	T11 (27)	T12 (30)	
Type of School	S	S	M	M	M	M	M	M	M	M	M	M	
Communication Tools													
LINE Group		√	√	√	√	√	√	√	√	√	√	√	11
Facebook Group	√		√		√	√	√	√	√				7
Messenger	√		√		√	√	√		√				6
Applications													
Kahoot!		√	√	√	√	√	√	√	√	√	√		10
Quizizz			√	√		√	√	√					5
Google Form			√			√	√		√				4
Padlet			√			√			√				3
Plickers		√							√				2
Websites													
YouTube	√	√	√	√	√	√	√	√	√	√	√	√	12
Wheel of Names			√	√		√			√				4
JeopardyLabs.com			√		√	√			√				4
British Council						√							1
Teaching and Learning Platforms/LMS during COVID-19													
Handouts	√	√	√	√						√	√	√	7
Google Meet			√	√	√	√			√		√	√	7
Google Classroom			√			√	√		√				4
Zoom							√						1
Microsoft Teams								√					1

Technological Tools Used to Enhance Teaching and Learning

As seen in Table 2, the participants' ages ranged from 24 to 54. The participants were from two different types of schools: small and medium-sized. T1 and T2 worked in small schools, while T3 to T12 worked in medium-sized schools. As previously mentioned, different school sizes would indicate different budget allocations for the schools, which would likely affect their facilities and infrastructure. At a glance, it can be seen that teachers from small-sized schools used relatively fewer technological tools than those in medium-sized schools.

The findings revealed that all 12 teachers knew technological tools and integrated technology to facilitate their use as classroom learning resources. The majority of participants (11 out 12) used a LINE group for communication with students. Interestingly, numerous participants reported that they used various technological tools simultaneously to communicate with students: LINE groups, Facebook groups, and Messenger.

Kahoot and Quizizz were the most used applications in the classroom. Kahoot was used the most, as reported by 10 out of 12 participants. Quizizz was also popular; five teachers used this application. Plickers was the least popular, as only two teachers reported using it. About websites, YouTube was used by all 12 participants. T3, T4, and T7 seemingly used various websites in their classrooms. The underlying rationale may come from the fact that these teachers were from medium-sized schools. However, the data in the next part will be able to explain why they used more websites than other participants from the same school context.

Lastly, concerning teaching and learning platforms/LMS during COVID-19, seven teachers reported distributing handouts to students for instruction during the outbreak. Of these seven teachers, three used only handouts, and the other four teachers used handouts along with other learning platforms. Other platforms or LMS included Google Meet, Google Classroom, Zoom, and Microsoft Teams. The fact that some of the schools were not located in a city but rather in a collection of smaller communities meant the relevant teachers lived near to their students and were able to physically deliver handouts to them.

Overall, it can be seen that the teachers used a variety of tools, websites, applications, and teaching platforms in their classrooms. The results revealed which tools were used and how often. The next section r explores how the teachers' different school settings influenced them in using some tools more than others and considers other factors that affect an individual's use of technology.

Integration of Technological Tools in Teaching and Learning

In this part, the results will be described in a narrative style based on the excerpts from the interviews with participants. The results will be narrated through stories to allow the reader to gain insightful knowledge on the use of technology from each teacher. The

data from all the participants were divided into three main groups (Group 1, Group 2, and Group 3) based on the number of technological tools used within the two main settings: small-sized schools and medium-sized schools.

Group 1: Turning Challenges into Opportunities

The data from this group were from participants in small-sized schools. The participants were those who had little access to technology but were willing to use it. This part illustrates how teachers integrated technology with very limited resources. The participants stated that external factors affected their use of technology, namely poor infrastructure, inadequate technology, and a lack of sufficient technological tools.

> "*There is only one language teacher in my school, so I teach every level from Mathayom 1 to Mathayom 6 [Grade 7 to Grade 12]. The number of students per class is from 2 to 15 students. In Mathayom 2, there are only two students…. There is no projector or computer in a classroom and the school's Internet Wifi is very weak.*" (Teacher 1)

> "*It is difficult for me to teach in a small-sized school, and I know it is difficult for the students too. I have a job and I have to do my duties as a teacher. I want to motivate them to learn. I want them to enjoy what they are learning so I had to use technology with them.*"(Teacher 2)

With limited facilities, T1 used her own devices and Wi-Fi to teach. Also, some students had phones and others did not. To address this problem, T1 decided to ask some students to use their phones to explore online websites that did not require immediate responses, such as YouTube. Also, T1 lent her smartphone to the students, when necessary. She stated:

> *I think I am quite lucky to teach in a small class. At least some students have smartphones, so when I show something like phonics, I ask students to use their smartphones to open YouTube. I also lend my smartphone to the students too.* (Teacher 1)

Similar to T1, T2 used her own devices plus Wi-Fi in the classroom. T2 witnessed the gap between students who had phones and those who did not. To deal with this issue, the teacher teamed up students with phones with others who lacked them, encouraging them to work on activities together in 'team mode'. T2 found a way of using Plickers in the classroom that meant phones were not required to complete the activities. She recounted:

So if at least 2–3 students have smartphones, I will use Kahoot! with the students. They can work collaboratively in a team mode. They look at questions from my laptop screen, and they answer from their smartphone screen. (Teacher 2)

Another application that I really like is Plickers. It is free for students, and they don't need to have smartphones. I just print Plickers cards and give them to students. I use these same cards with different groups of students. The students had fun, and I am glad I can be a part to make them happy. (Teacher 2)

This information from T1 and T2 shows that internal factors supported teachers' use of technology. High teacher self-efficacy and positive teacher perceptions are some of the factors that affect technology integration in schools. This report from T1 confirms this statement:

There is no projector or computer in a classroom, and the school's internet Wi-Fi is very weak. But I think I am quite lucky to teach in a small class. At least some students have smartphones, so when I show something like phonics, I ask students to use their smartphones to open YouTube. I also lend my smartphone to the students too. (Teacher 1)

The statement truly shows positive attitudes towards the use of technology in the classroom. In addition, internal factors (e.g., positive attitudes and teacher efficacy) positively influenced the teachers to set up learning environments through instructional activities. The excerpt from T1 confirms this statement. T1 was skilled at using Facebook Live and wanted students to have marketing skills. T1 intended to bring the real world to the classroom. T1 then asked students to use a Facebook application to record a live video to practice marketing and English skills. Consequently, the students might be motivated to learn through this activity. T2 also had high self-efficacy in technology adaptability, as T2 asked students to learn online by using additional technological tools that did not require instant responses, such as distance learning television (DLTV) along with LINE, which required instant responses. T2 also used offline materials, such as handouts, to deal with the problem of limited facilities. The excerpts below confirm the statements:

"When the facilities in the school are limited, I agree that it is extremely to teach English and to integrate technology in the classroom. But for me, I think it is a challenge. I have access to the Internet and I am comfortable with creating contents on Facebook. So, I create a Facebook page called "XXX Easy English"... I want to inspire my students to get motivated in learning English."

During the COVID-19, I used Facebook Live to sell clothes online. I got this idea so I integrated my knowledge of English and video editing skills to teach my students. Students learned basic skills for video editing and they created videos and submit them to me. Sometimes I led some students to go live on Facebook to

sell products (like woven cloth bags, dried fish) using Thai and some English words. When they could sell the products they were happy because they can help their family/community and I think they know why English is important. (Teacher 1)

"Students did not come to school during Covid-19, so I created learning materials in handouts and send them to the students in LINE group. But not all students can smartphones so later I just created handouts, made photocopies, and distributed the handouts to students at their houses. Sometimes I just asked the students to watch the content from DLTV (Distance Learning Television)" (Teacher 2)

Group 2: Making the Best Use Out of Everything

Group 2 refers to the data from those lecturers who had some technological support (such as computers and monitors) and were willing to make full use of those technological tools. T3, T4, T5, T6, T7, T8, and T9 belonged to this group. This part shows how these teachers integrated technology with some resources. It can be seen that the teachers in this group varied in age from 25 to 54. However, they shared some character traits in common, including that they were from medium-sized schools. Also, they had high teacher self-efficacy, confidence, belief in technology integration, and positive attitudes towards technology integration. This may have resulted from the facilities provided by their school. Overall, it was found that internal factors (e.g., positive teacher perceptions) affected technology integration in the schools. There was only one external factor that affected the non-use of some technological tools, namely the lack of accessible resources.

Teachers from Group 2 integrated more technological tools into their classrooms. Also, they were able to add more interactive activities in their classrooms. T7 provided an example of how adequate technological facilities can be correlated with teachers' self-efficacy, confidence, beliefs, and attitudes towards technology integration. The excerpts below show how the teachers integrated technologies into their classrooms. It should be noted that T7 was the only teacher that invited the researchers to observe her classroom and her teaching demonstration. T7 provided the following detailed description:

I integrated technology in all my English classes. I teach both compulsory English courses and elective English courses to Mathayom 2 [Grade 8] and Mathayom 5 [Grade 11] students. For this teaching demonstration, the Mathayom 5 students are taking an elective English course, "English for Know All". The topic of the lessons is "Social Words". First, I asked students to search from the internet and choose one interesting social word, for example, the words 'permalink', 'retweet', 'vlog', 'viral', 'DM', 'unfriend', 'hashtag'. Then, they had to give a presentation of that word in front of the class. I used the "Wheel of Names" tool to let the wheel

pick a random name for a presentation topic. After approval from me, they posted their words on the classroom wall. Everyone in the class needed to walk around the class, read their friends' work, and choose nine words to create sentences to make a story. After creating it, they told the story and posted it on Facebook. For me, I also needed to look at every word, and I had to use some of these words to create a quiz game on Kahoot!. If I want some sense of competition, I will use Kahoot! or Jeopardy as a tool, but if I want students to be more serious, I will use the Quizizz application. (Teacher 7)

To support T7's statements, Figures 1 and 2 show how the teacher applied knowledge in technology and pedagogy to teach students in the classrooms.

Figure 1
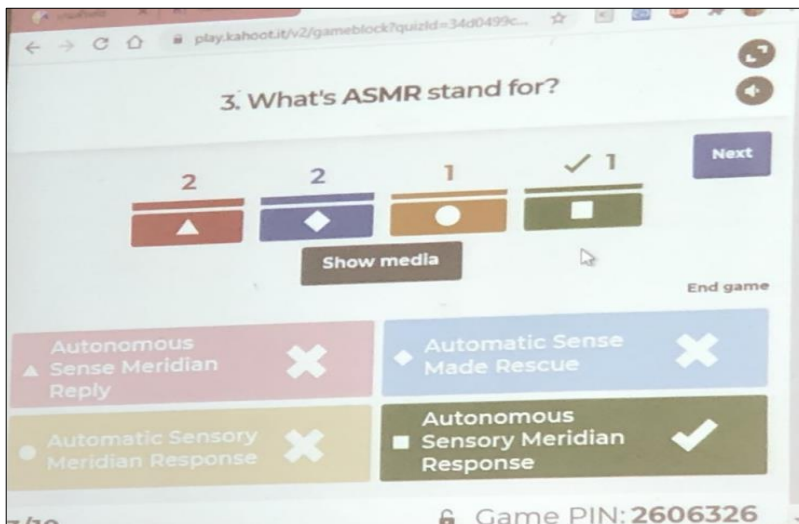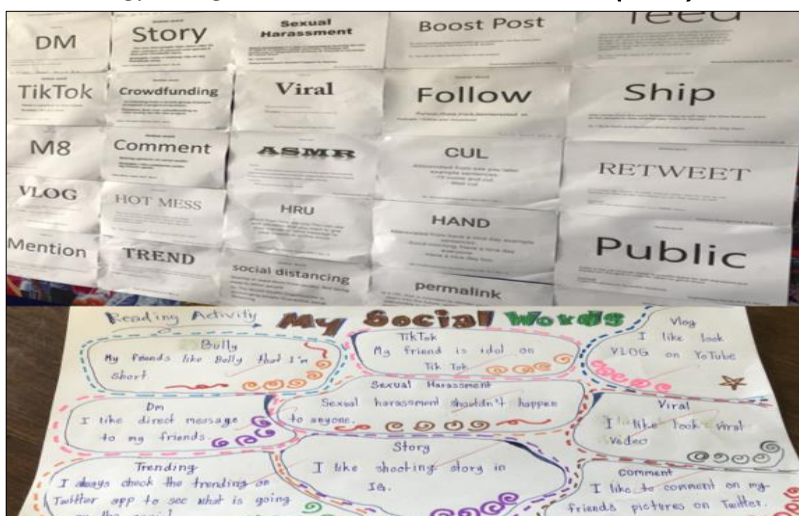*Technology Integration and In-Class Activities*

Figure 2
Technology Integration and In-Class Activities (cont.)

T3 was also an outstanding participant who demonstrated how he used technological tools in class. It can be seen from the excerpts below that he used various types of tools because his school supported adequate facilities (e.g., whiteboards, speakers, Wi-Fi, computers, and projectors). He described his use as follows:

> *I always use technology in my classroom. Before COVID-19, I used Kahoot!, Quizizz, Padlet, and YouTube. This is a normal practice for me. But when COVID-19 started in March last year* [2020], *all the teachers in the school needed to teach online 100%. The school also asked that every teacher set up Google Classroom. I also started to use more types of technology in class. I assigned works in Google Classroom. I uploaded my teaching video there. Sometimes, I went live on Facebook and shared a link in Google Classroom. I use Google Forms to create a quiz. I created a Google site. It contains information about my name, the courses I am teaching, QR codes of the subject, or the group that students have to scan. So, I put everything in Google Classroom. I also contact the students through a LINE group whenever I put something new in Google Classroom. (*Teacher 3*)*

To support the participant's statements, Figures 3 and 4 were provided by the teacher and show how Kahoot! was used in the classroom.

Figure 3
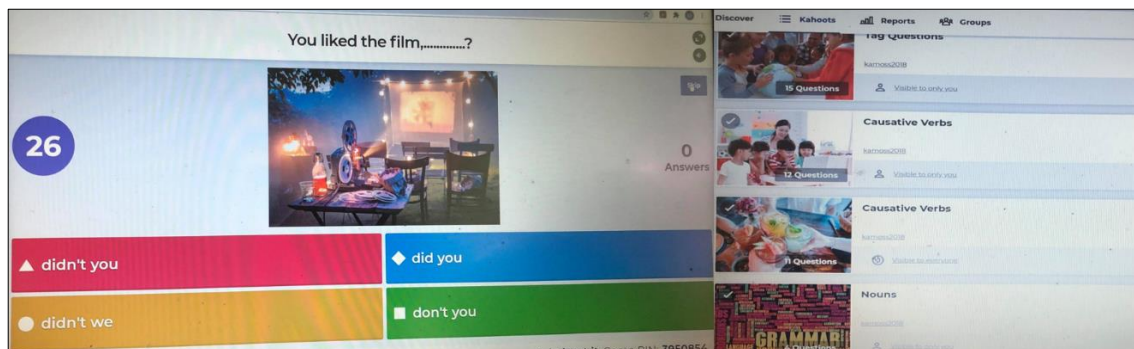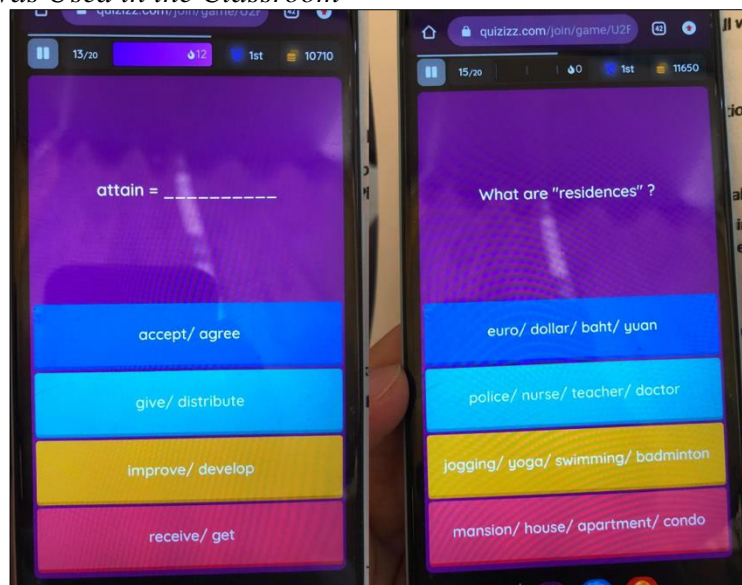*How Kahoot Was Used in the Classroom*

Figure 4
How Quizizz Was Used in the Classroom

Although internet connectivity and students' lack of mobile devices seemed to be the most reported problems when trying to integrate technology in the classroom, T5 shared his experience in using technology with such limitations, as follows:

> *I also remembered that when you came to give a workshop last time you used the Jeopardy game. You gave us the link and how to create it. I tried that to use with my students. They enjoyed it very much. The students didn't need mobile devices, and this worked better in my school. I used my laptop, and if the school Wi-Fi was weak, I could use my 4G. The students played this game in groups….. The questions I used in the game are related to English. For example, I asked students to change an affirmative sentence to a negative sentence, asked about irregular verbs, and asked them to translate Thai sentences into English using the comparative form, superlative form, something like this. (Teacher 5)*

Interestingly, T8 and T9, the only teachers aged above 50, demonstrated a preference for technology integration in their classrooms. Although age seems to be a factor that affects the use of technology, it was clear that in this study the two older teachers expressed an interest in applying technology in their classrooms.

> *I have been a teacher for 17 years. I saw a lot of changes in teaching English as well as in education policy. When the Ministry of Education launched the project **One Tablet Per Child**, I needed to learn how to use a tablet and design activities relating to tablet devices. Another time when the ministry launched the project **One District One Lab School**, I needed to adapt myself to use web-based instructions and I needed to know about new technological devices such as an interactive whiteboard. So for this, I think I am comfortable with changes.*

*Ok let me share how I use technology in one class. In Mathayom 1 (Grade 7), the topic is occupation… First I created a quiz on Kahoot. The items will be like… "I work in a restaurant. I cook food. Who am I?" a pilot? a police? a chef? or a nurse? Or "I work in a hospital. I wear a white coat and I help sick people. Who am I? This Kahoot quiz is played at the beginning of the lesson. It is like a pre-test. After that, I taught the students about occupation. I showed videos from YouTube. Students will see real example and they know how to pronounce the words correctly. At the end of the lesson, I created another quiz on Kahoot again. This is like a post-test. The questions will be like…. "A pilot is someone who…….. a. can cook b. can fly c. can swim d. can teach" (*Teacher 8*)*

*After attending your technology workshop two years ago, I started using more technological tools in the classroom. I usually use YouTube because it is very easy, but I started to use Kahoot and Quizizz. I think students are very motivated when I use Kahoot it is convenient for me too. My American husband lives in Thailand for many years and used to teach English to local Thai people. He is very passionate for the Thai students so when he knew I used Kahoot he upgraded Kahoot account from Kahoot Basic to Kahoot Premium. With Kahoot Premium, I can create a quiz with different question item types, I can access photos from the Kahoot image library to match the theme of my questions. For example, the questions is about Christmas I can easily look for photos about Christmas and add to Kahoot. Another feature that I like is with Kahoot Premium I can create content by importing the content from my PowerPoint. (*Teacher 9*)*

Lastly, it was interesting that the teachers from this group showed a strong positive belief in technology integration. In the interviews, the teachers used phrases like "I can….", "I will…", and "I can learn…" to show their positive perceptions towards technology integration, as can be seen from the excerpts below:

*I created a quiz and set a deadline for the students to complete. I can see the results easily. (*Teacher 3*)*

*I can assign work to my students through Google Classroom. (*Teacher 3*)*

*I would love to use technology in every class,… I can search in Google Images for 'London' or I can search for a video of the London city tour. I think seeing pictures is worth more than words. (*Teacher 8*)*

Well, I am old now, I am 54, and I am not very good at technology, but the students are very smart, they help me a lot with technology. So, I think I have to try to

*adapt myself. I want the students to be motivated learners. I like to see them have fun when they are in my class. (*Teacher 9*)*

One interesting common feature of the Group 2 teachers was self-development related to their positive perceptions of technology integration and self-efficacy. T17 reported that using technology was a way to develop herself. Regarding bringing the real world to the classroom, T7 pointed out that when she used technology, she could see authentic examples from teachers around the world using technology. She felt that she was still a novice teacher who needed to learn more about using technology in class. It was surprising that three out of 12 participants not only focused on students but were also concerned about themselves. They perceived technology integration as a part of their self-development. The excerpt below illustrates how T10 perceived technology and teaching.

*"I know that the students are very competent in using technology. I have two children who are in secondary school and we are very close, we talk about everything. So they often talk about what they enjoyed or did not enjoy when they study in English classes. They told me about the teacher opening YouTube about people in Australia and New Zealand or about a new application their teachers use. I am a teacher and I want to do the best I can to make the students happy. I tried using technology in the class. I want to develop myself and value my work. When I have problems, I asked my children to help me. I have to admit that I don't know everything but I can learn." (*Teacher 7*)*

Group 3: Meeting the Standard

Group 3 refers to those teachers who have some technological support; however, they used only some of the technological tools. T10, T11, and T12 belong to this group and were all from the same school context, a medium-sized school. The majority of teachers in this group were relatively young, aged between 26 and 30.

From the interview data, it can be concluded that some reasons were blocking the teachers' use of technology in the classroom. The teachers knew about the features and benefits of the tools but did not have opportunities to explore them due to a range of factors. These included the teachers' lack of confidence while using technology, their beliefs and values, lack of time for the technology's use, lack of effective training, and technical problems faced in use, especially a lack of support (from administrators or directors). In other words, some teachers stated that their workload and administrative duties prevented them from using technology in classes, as follows:

*It is difficult to use technology in the classroom. Many classrooms are not equipped with computers and projectors. There are two interactive classrooms where there are computers and projectors, but if I want to use technology, I have to reserve the classroom in advance. So, I only use it once or twice. (*Teacher 10*)*

*I don't use technology in the class very often because the internet connection is not stable. Also, I think using technology can disrupt my teaching time. If I see something interesting, I will tell students the link, and they can watch later at home. (*Teacher 11*)*

*I rarely use technology in the classroom. There are no monitors to connect to the laptop in most of the classrooms. So, it is very difficult. But for speaking class or when I teach about pronunciation, I bring my laptop to class. I open YouTube and connect to mini external speakers. In that way, the students can learn how to pronounce words or sentences correctly. If I find some useful resources for English language learning on YouTube, I sometimes share the URLs with the students by using LINE group chat. (*Teacher 12*)*

The most interesting thing is that all three of these teachers used handouts during the COVID-19 pandemic. The teachers were from well-equipped schools with adequate facilities, but they still used handouts. They either made photocopies and distributed them to their students or sent electronic files through the LINE application. T11 and T12 also reported using Google Meet as an online platform for teaching and learning during the COVID-19 pandemic, as mandated by their school directors.

Discussion and Conclusion

The results were diverse based on the teachers' perceptions and their actual use of technology. They were placed into three groups: Group 1, Turning Challenges into Opportunities; Group 2, Making the Best Use Out of Everything; and Group 3, Meeting the Standard. The teachers from the first two groups seem to have achieved congruence between their perceptions and use; they had positive perceptions towards the technology, so they used it in classes. In contrast, the teachers from Group 3, who were from bigger schools, decided to use technology just to meet the standards of the school instead of getting the most out of their available facilities.

All the teachers that participated in this study were already using technological tools, websites, and applications in their classes. The findings are in line with several recent studies, which indicated that many teachers commonly use technology for teaching purposes (Alonso et al., 2019; Liu et al., 2018; Taghizadeh & Hasani Yourdshahi, 2020; Uzunboylu & Ozdamli, 2011). On one level, the findings are somewhat basic and obvious; however, the results surprisingly show that the teachers in the small schools seemed to have made more effort in using technology and had more positive attitudes towards technology use for educational purposes. The results are not concordant with previous studies (Blackwell et al., 2014; Nim Park & Son, 2009) in the way that facilities blocked teachers' from using technology. Conversely, in this study, the small school teachers had only limited facilities and equipment, but they had not given up on teaching students through those educational tools. These results are in line with Wu et al.'s (2008) findings.

The implications of this study refer to the influence of extrinsic and intrinsic factors on the teacher's use of technology. The results from this study are consistent with previous research, which stated that extrinsic factors (such as workload, lack of time, sufficient facilities, and other administrative duties) and intrinsic factors (such as teachers' beliefs, level of computer skills, and confidence in using technology) are the main factors positively or negatively influencing educators' use of digital technology (Blackwell et al., 2014; Nim Park & Son, 2009). The features/attributes of the online resources that were found useful by teachers in this study are consistent with the researchers' previous study (Boonmoh et al., 2021; Khamprem & Boonmoh, 2019) in the way that the participants from both studies mostly used free game-based learning tools, especially Kahoot! because this tool was easy-to-use, free, and supported a classroom learning environment and classroom engagement. A previous study (Cárdenas-Moncada et al., 2020) has shown that Kahoot! helps support students in playing together and incorporates game show features. Similarly, in this study, the teachers used Kahoot! because of a feature that allowed students who lacked smartphones to play games together with ones who had smartphones.

This study explored teachers' rationales for using technology in the classroom. Intrinsic factors, such as a lack of confidence among teachers during teaching, beliefs, and value, were found to be the main reasons blocking teachers' use of applications in their classrooms. Extrinsic factors (such as a lack of time using technology in teaching, lack of support from administrators or directors, not having enough facilities, and students not having their own smartphones) also played a part. Free game-based learning tools were found to be particularly popular classroom tools, which all 12 teachers had integrated into their classrooms. The application that they used most often was Kahoot! They were popular because these applications were easy to use and could save time. However, some students did not have their own smartphones, which limited the use of such applications. Two teachers from a small school did not have enough facilities (inadequate computers and poor internet connections). To overcome these limitations, the teachers made use of the features from game-based online applications, such as the "team mode" that Kahoot! provided. Therefore, using game-based online applications could be counted as a guided solution for teachers who are in similar settings: small-sized schools with inadequate support. Thus, it was concluded that game-based online applications were applicable for school settings with limited facilities. The teachers were selected from a workshop in 2019; "Secondary Teachers and Technology Integration" was conducted with Thai secondary teachers from all 17 districts in Surin Province in northeast Thailand (Boonmoh et al., 2021). The workshop aimed at increasing teachers' knowledge of how to use technology in the classroom.

As a result of this workshop, these teachers already knew how to use certain applications and their strengths and weaknesses. The tools that these teachers used included Kahoot! and other game-based online applications. Interestingly, according to the findings from the teachers in Group 1 (turning challenges into opportunities), it was noted that the teachers from schools with very limited facilities were still eager to

integrate technology into the classroom. The lack of technological facilities could be a major challenge related to technology integration in educational settings (Nim Park & Son, 2009). However, it appeared contradictory that school size did not affect the teachers' motivation in this study. It was concluded that intrinsic factors were essential and directed the teachers' decisions. The factors influencing teachers' decisions can be from intrinsic motivation, such as teachers' positive attitudes towards the use of technology and teachers' confidence in using technology. A lack of facilities at the schools may influence the teachers to not use technology in classes; however, the teachers' individual decisions for using or not using the technology were more important because their positive attitudes could lead them to still find ways to use the technology. In contrast, teachers' negative attitudes could prevent them from using technology in classrooms (Alonso et al., 2019; Liu et al., 2018; Taghizadeh & Hasani Yourdshahi, 2020; Uzunboylu & Ozdamli, 2011). The results of this study are in line with several studies, which stated that intrinsic factors (such as teachers' attitudes, confidence, knowledge, and anxiety) about using technology correlated with their actual use, such that those more in favour of technology were more likely to adopt technology in their classrooms (Ertmer et al., 2012; Karaca et al., 2013; Lindahl & Folkesson, 2012; van Braak et al., 2004).

Another important pedagogical implication relates to teachers' knowledge of technology use in the classroom and the types of technology to use in the classroom. Teachers need to clearly understand the technological tools before integrating them into their classes. In addition, one of the teacher's duties in a technology-integrated class should be advising students on the strengths, weaknesses, functions, features, and uses of each technological tool. This allows students to understand the rationale behind each technology-integrated activity. It also makes it more likely that students will be motivated to learn effectively about using the technology than if they were left to use the tools without any guidance. The teachers' use of technology in this study had been prescribed by governmental and institutional policies. This finding was consistent with the results of Wiangsima and Boonmoh's (2018) study, which reported that language policy using a top-down approach dictated the curriculum and teaching methods in language learning. The Thai Ministry of Education introduced projects utilizing a top-down approach, such as the Ordinary National Educational Test (ONET), One Tablet Per Child (OTPC), and STEM Education, over many years. However, due to technical and practical limitations, some projects such as OTPC were cancelled shortly after their introduction. Therefore, teachers have had to constantly adjust their pedagogical practices in response to abrupt policy changes (Wiangsima & Boonmoh, 2018). It is worth speculating on how more consistent long-term strategies would affect the teachers and schools. Therefore, government officers must come into contact with individual lecturers who are teaching in each school.

Consistent with the results from Wiangsima and Boonmoh's (2018) study, the participants from this study (specifically Group 3, meeting the standard) did not use technological tools to some extent because they had to follow the top-down policies, such

as OTPC and One District One Lab School, which relate to technology assigned by the school principal. To accommodate the top-down policies, the teachers need to accept the changes and enhance their pedagogical and technological knowledge. From the findings of this study, one of the teachers from Group 3 had witnessed changes for decades in a way that they accepted and were comfortable with the changes. However, the acceptance of changes is never uniform. Some teachers from Groups 1 and 2 could accept and adapt themselves easily to use technology in classes. However, another group of teachers may not be able to accept and adjust themselves to address the standard easily. Some teachers from Group 3 stated that they were not comfortable using technology as promoted by the policies. Therefore, the teachers who were not fully ready and comfortable to change themselves used just a few technological tools to just meet the minimum requirements of the top-down policies. Therefore, intrinsic motivation is essential in a way that effective technology integration comes from teachers who change their mindsets to be open to changes in the educational context. The training workshops and sharing sessions organized by administrators from each school may help administrators in exploring the needs of those teachers whose intrinsic motivation does not drive them to accept innovation and the use of technology in the classroom.

The findings from this study highlighted that adequate facilities can be one of the factors that support teachers' use of technology in the classroom. Group 2 teachers (making the best use out of everything) tend to use technological tools more than teachers from Group 1 (turning challenges into opportunities). It can be concluded that facilities were a part of the factors that influenced the teacher's choices in using technology. Therefore, administrators should provide adequate facilities for teachers. More importantly, the facilities need to be in good condition and ready to use through continuous maintenance.

Apart from extrinsic factors and intrinsic factors, teachers' beliefs, in particular, led the teachers to consistently and voluntarily integrate technology into their classes. Thus, a professional learning community (PLC) should be implemented by the administrators of each school. By doing so, the teachers will have opportunities to exchange knowledge and experiences in technology integration. Moreover, the support staff (in the case of Thailand, the Secondary Educational Service Area Office) should provide meetings or workshops to organizing teachers into working groups of practice-based professional learning. Also, the supervisor should launch sharing sessions frequently for secondary teachers.

The researchers have witnessed how technology was used differently depending on the personal context and individual differences of the teacher, such as lived experience, school facilities, beliefs, and workload. Some teachers were from a small school with inadequate facilities, so they could not use various types of websites and tools. Based on research conducted for this paper, there appears to be an urgent need for training workshops targeting teachers at the secondary education level, namely, how and when to use technological tools in classrooms, including case studies of teachers from different school contexts. According to the trend of having technological workshops (Dawson &

Rakes, 2003; Georgina & Hosford, 2009; Kupetz & Ziegenmeyer, 2005), teacher training concerning technologies is encouraged by organizations and educators to enhance teachers' competence. Therefore, organizations and educators should divide the training into sections. Each section should be reserved for groups of teachers from different school contexts. The concept of dividing teachers into groups is consistent with the concept of precision language education. This concept is derived in part from precision education, which is derived from precision medicine. Precision language education deals with individual differences by effecting a diagnosis on each language learner and then designing the lessons to respond to each person's specific language-learning problems (Lian & Sangarun, 2017). In other words, future training workshops should not be focused on only a number of applications but on how applications can be applied to teachers from very diverse contexts.

Lastly, this study can broadly suggest that the successful integration of technology in classrooms does not depend on the teacher's age. In this study, teachers from Group 2 (making the best use out of everything) whose ages ranged from 32 to 54 used technology in class more than teachers in Group 3 (meeting the standard) whose ages ranged from 26 to 30. It can be concluded that younger generation teachers who are nearly "digital natives" do not display a full natural use of technology. However, the teachers who are younger and grew up with technology integrated into their every day lives may not have a strong passion for technology integration in their classes. Intrinsic factors regarding teachers' beliefs seem to impact the use of teacher individuals more than extrinsic factors (e.g., ages). The findings of this study are in line with Khamprem and Boonmoh's (2019) study, which reported that the effective integration of technology in classrooms does not depend on the teacher's age or years of teaching experience but rather on their specific needs and willingness to learn. It would be worth exploring to find ways to enhance teachers' needs and willingness to use technology in classes. In Khamprem and Boonmoh's (2019) study, a 57-year-old participant who was unfamiliar with new applications was shown to be able to integrate applications in her classroom after being trained to achieve her stated needs. It can be concluded that teachers' ages do not affect their choice of technology integration as much as their years of exposure to technology. This is in line with Wright and Wilson's (2011) findings. They examined teacher perceptions of technology integration and use in their classrooms. The results suggested that the participants who were more familiar with technology were more likely to facilitate students through technology.

In terms of the study's limitations, it used a small sample of teachers in one province to understand in detail how teachers use technology in class. In-depth interviews were conducted with only a few participants from a large-scale sample (126 participants who participated in the workshop from a previous study in Surin). Therefore, the results may not be suitable to generalize to school teachers that differ to a great degree in their use of technology. Another limitation was that only three teachers explicitly demonstrated their technological tools/applications used in the classes. Therefore, the teachers' technology integration could be observed in further studies, including the use and

perceptions of technology integration in large and extra-large schools. Thus, researchers can explore how teachers with extensive equipment and facilities integrate technology into their classes. In addition, the researchers want to investigate the use of technology in English classrooms of teachers on a larger scale at different schools from other provinces. By doing so, the researchers will gain a better understanding of the relationship among school size, teachers' perceptions, and teachers' use of technology in classes. Furthermore, the researchers will be able to evaluate the use of technology for teaching in classes from all the regions of Thailand: North, South, East, and Northeast. The results from a large-scale sample can demonstrate the effect of school size on teachers' perceptions and use of technology. Although a larger sample may be more representative of school teachers throughout Thailand, this work that focused on in-depth interviews with a smaller number of teachers has provided much need insight to further develop future research methods and directions.

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