Teachers' Stated Needs and Their Actual Use of Technology

Kitiya Khamprem and Atipat Boonmoh
King Mongkut's University of Technology Thonburi, Thailand

Abstract

This research investigated teachers' stated needs regarding their use of technology, and the kinds of technology that they actually used to facilitate learning in their classrooms. Questionnaires were distributed to 10 language teachers at a technical college in Thailand to learn about their present use of technology, as well as their stated needs for technology training. The technology training was then designed to match their needs. After 10 weeks, semi-structured interviews were conducted to determine the teachers' use of technology, the kinds of technology used, and their reasons for use or non-use of technology in their classrooms. A survey questionnaire revealed teachers' positive attitudes toward technology. They expected to learn new technological skills, to keep themselves updated regarding current developments, and to apply them in their classrooms. The semi-structured interview findings revealed, however, that some teachers did not use technology to facilitate classroom learning because of poor Internet connections, lack of supporting facilities, excessive teaching work, and related issues. Based on these findings, the pedagogical implications are discussed.

Keywords: *Factors influencing, teachers' technology use, technology training*

Introduction

Technology has become an integral part of our lives, including modern-day teaching and learning patterns. The Internet and smartphones are examples of tools that are used to develop our knowledge. At present, teachers need to understand the role of technology in the learning process, as well as learn how to integrate technology in their classrooms. According to Courville (2011), when technology is directly applied to an educational setting, it will increase the teacher's knowledge and have an impact of increasing learning among students. Moreover, technology is a powerful tool that can support and transform education in many ways. For example, it is easier for teachers to create instructional materials to enable students to learn and work together in new ways. It can change education effectively and efficiently. On account of technology, learning is available to everyone, everywhere. Nowadays, technology has influenced classrooms through digital learning tools: for example, tablet computers and PCs, smartphones, and smart digital white boards.

In Thailand, teachers use technology in their classrooms either by their own initiative or due to external directives. In fact, use of technology in classrooms stemming from a top-down policy has proven unsuccessful (Wiangsima & Boonmoh, 2018). This could be because teachers were not ready to integrate technology into their classrooms, as such integration may negatively affect their teaching. According to Wiangsima and Boonmoh (2018), policy has a controlling influence on the methods of instruction and affects students' engagement in class. For example, when *"The Tablet Project"* was introduced, teachers had to set up objectives and design classroom activities related to the tablets, but when the project was cancelled, tablets were simply no longer used in classrooms.

Besides a top-down policy, there are other factors that can cause teachers to struggle to integrate technology in the classroom. Yordming (2017) listed some major challenges. These included teachers' lack of confidence and competence in using technology in classrooms, lack of knowledge about the technology itself, lack of adequate ICT support, infrastructure, time, and so much more. Moreover, Yordming asserted that teachers needed more professional development to enable them to integrate technology in their classrooms.

This leads to the question: Should the use of technology come from a top-down policy or from teachers' own initiatives? Thus, studying teachers' stated needs and their actual use of technology

could reveal the stated needs of English vocational teachers in order to introduce technology applications successfully. It could also give information on the level of training needed to enable the use of such applications in the classroom. It would also enable collection of statistics on how often the teachers used or chose not to use technology applications that they had been trained to utilize.

Literature Review
Top-down and Bottom-up Approaches

In terms of using technology to facilitate classroom instruction, there are two main approaches. One is the top-down approach. According to Wiangsima and Boonmoh (2018), language policy using a top-down approach dictates the curriculum and teaching methods in language learning. A report showed that the National Education Act created a mind-set for teachers, but there were gaps that prevented that mind-set from being transformed into language policy. Wiangsima and Boonmoh (2018) argued that using a top-down policy has proven unsuccessful. Several policies and projects utilizing a top-down approach had been launched by the Thai Ministry of Education since 2005, e.g., Ordinary National Educational Test, One Tablet per Child, Moral School Project, Teach Less Learn More, and STEM Education.Teachers, especially those in government schools, have to apply myriads of projects and policies, all of which influence their way of teaching. However, due to technical and practical limitations, some projects such as One Tablet per Child were cancelled shortly after their initial implementation. Therefore, teachers had to continually adjust their pedagogical practices in response to abrupt policy changes (Wiangsima & Boonmoh, 2018).

The second approach, called the bottom-up approach, is seen as being influenced by teachers' beliefs, opinions, or attitudes. Xu (2012) pointed out that the bottom-up approach could affect teachers' pedagogical practice. For example, their beliefs may influence how they plan their lessons and make decisions of what and how to teach. In addition, Roche (2017) also mentioned that the bottom-up approach means thinking about the smallest component of what people need to know before moving onto the bigger picture. In terms of education, the bottom-up approach means understanding through the needs, motivations, and opinions coming from teachers.

Technology in Teaching and Learning

Integration of technology in classrooms has many benefits for both teachers and students. Gorra and Bhati (2016) stated that technology has a positive impact on student learning. For example, it enhances classroom learning-related activities, promotes student communicative capacities, improves teaching effectiveness and student-teacher interaction, creates a context for language teaching, and provides flexibility in course content, among other benefits.The use of technology in classrooms has become an increasingly important part of higher and professional education. Technology supports classroom teaching through creating opportunities for learners to complete assignments using a computer rather than by pencil and paper. Ahmadi (2018) stated that technology use in classrooms aims at improving students' performance by creating and managing various technological processes and resources in or outside of classrooms.It not only helps improve the way students learn, but it also helps motivate students and encourage individual learning, providing easy access to educational material, helping students learn new subjects, and so on.

Today's classrooms are different from traditional classrooms, reflecting the general belief that technology can help to facilitate knowledge construction. According to Muir-Herzig (2004), classroom technology can provide authentic learning opportunities for students. Teachers can draw on technological applications to stimulate real-world environments and create actual environments for experiments, so that students can explore new knowledge as well as use a variety of tools to gather information and solve problems. Technology has influenced classrooms through digital learning tools, both hardware and software (Muir-Herzig, 2004).

Integration of technology in classrooms is a broad concept, and several aspects affect teacher perceptions of technology. Thus, the researchers placed previous studies into different categories.

(*1*) *Teachers' Interest in Using Technology and Their Purposes.* Many researchers have explored technology integration projects worldwide and reported positive impacts on teaching and learning. Gentry and Lindsey (2008) conducted a survey to examine teachers' perceptions about technology and its use in their classrooms. The results indicated that teacher perceptions about technology in general, and their effectiveness as technology users, directly impacted on the type and amount of technology used in their classrooms. Moreover, the data suggested that teachers with more experience in educational technology perceived themselves as more effective technology users.

In a similar context, Wright and Wilson (2011) examined teacher perceptions of technology integration and use in their classrooms. The results indicated that the participants who were more familiar with technology were more likely to facilitate learning through technology. Most teachers were willing to experiment with new technologies to facilitate students' learning, improve their critical thinking, and help to motivate and support students learning. Some teachers adopted technologies that allowed students to take control of their own learning.

In a similar vein, the studies of Eristi, Kurt and Dindar (2012) and Wright and Wilson (2011) indicated that teachers were generally willing to use technology in their classrooms. However, it was apparent that they needed constant support regarding the use of technology in their courses. The limited number of technological support staff hindered teacher efficacy in technology use. Examining a different context, a study by Cote and Milliner (2018) examined teachers' perceptions of the use of technology in language teaching. The results indicated that all of the teachers in the English program were confident in using digital technology, and they also had very positive perceptions of the use of technology in their classrooms. They were willing to learn and facilitate more classroom technology because they saw its potential for improving their teaching and enhancing student learning.

Although most teachers are willing to introduce the use of technology in their classrooms, they need consistent support regarding such use, and the basic facilities should be provided in their class. This is reflected in the findings in Davidson, Richardson, and Jones (2014) who studied teacher perspectives on the use technology in the classroom. Interviews with teachers indicated that their limited use of technology resulted from inadequate access to equipment, inability to troubleshoot minor technological problems, and the absence of training in learning activities. The study suggested that technology integration could enhance teaching and learning in English language art classes, and participants wanted training in the effective use of technology as an instructional tool.

(2) *Barriers to Teachers' Use of Technology in Classrooms*. Regarding factors that can complicate efforts to integrate technology in classrooms, Kotrlik and Redmann (2009) found that technology education teachers also experienced minor barriers to technology integration, and some technology anxiety, as they strove to integrate it into their instruction. Examples of perceived barriers included insufficient availability of technology for the number of students in class, lack of technical support in the teaching and learning process, and lack of time to develop lessons that used technology.

Moreover, studies by Merc (2015) and Solano et al. (2017) found that barriers to integrating technology in classrooms included lack of facilities and equipment. The results from the former study indicated that student teachers were not benefiting at the desired level from the technology available to them in their teaching practice. Furthermore, student teachers were not utilizing technological aids for particular reasons, for example, lack of basic facilities in the practicum school, insufficient training, the cooperating teacher's choice, and the university supervisor's choice. The latter study investigated the current state of technology use in English language classrooms. The results gathered from surveys and observation sheets showed that the teachers did not use technological tools in classrooms because they did not have enough facilities to incorporate them in the English as a Foreign Language (EFL) classroom, and that more training for teachers was needed in the use of technological tools for teaching English as a foreign language.

The findings of Zehra and Bilwani (2016) correspond with the studies of Merc (2015) and Solano et al. (2017) in showing the barriers that teachers faced in the integration of technology. In their study, Zehra and Bilwani investigated the perceptions of teachers in both elite and ordinary schools,

and their use of technology in classrooms. The results from self-administered surveys indicated that the teachers' use of technology for teaching and learning could be frustrating and time consuming. It was suggested that the use of technology in classrooms could prove inefficient and ineffective for teachers who are not trained to teach using advanced technology.

Besides lack of facilities and equipment, inefficient training is another factor that causes teachers to struggle to integrate technology in classrooms. A study conducted by Basal (2015) showed that the problems in training language teachers included teacher training programs that were inefficient in equipping teacher candidates with the necessary knowledge, skills and pedagogical approaches, an insufficient number of technology courses, and insufficient integration of technology into the teachers training courses. The study also found that teachers' attitudes towards technology were important in shaping their future practices.

In the Thai context, Saenkhot and Boonmoh (2019) investigated factors that either facilitated or hindered their use of technology in the Thai EFL classroom. The results showed three main factors that hindered teachers' use of technology in classrooms—lack of confidence and relevant knowledge, no necessary facilities provided in the typical classroom, and students' lack of attention. When examining the impediments to using technology in classrooms, lack of Internet access and available equipment or facilities were found to be major ones. In addition, there were technological problems and insufficient teacher' training programs.The aforementioned studies mostly focused on the use of technology in classrooms in elementary schools, English language art students, and language classrooms in overseas contexts. However, use of technology in classrooms of vocational teachers is an under-explored research area, especially in Thailand. Therefore, more research is needed in order to study teachers' stated needs and their actual use of technology before introducing technological applications and training the teachers in their classrooms and, after such training, to see if and how often the teachers use such applications.

Research Questions

Two research questions arose from the literature review as follows:

1. What are teachers' stated needs regarding the use of technological applications?

2. What kinds of technological applications do teachers use to facilitate learning in their classrooms?

Methodology

Participants

The participants of this study were 10 English teachers from Kamphaeng Phet Technical College, Kamphaeng Phet, Thailand, in the 2018 academic year. These participants were selected by using convenience sampling. All of the participants were English teachers, with a range of one to more than 10 years of teaching experience. The participants were seven women and three men, and ranged in age from 25 to 59 years. All participants held a bachelor's degree in English, and two of them held a master's degree in English as well. Most participants had 26 to 30 teaching hours per week, and some had attended the *"Rosetta Stone"*professional development workshop.

Instruments

The instruments used in this study were a questionnaire and semi-structured interviews. The questionnaire (constructed using open-ended questions) elicited information from English teachers in three main parts—background information, their present use of technology, and their stated need to use technology in classrooms to help design a training program. The semi-structured interview was conducted after the training, and asked English teachers about their classroom use or non-use of technological applications. The factors that determined their decision were assessed, as well as the kinds of technological applications those teachers used to facilitate learning in their classrooms.

Procedure

The procedure of this study was divided into three stages. First, a questionnaire was distributed to all 10 English teachers to learn their stated needs. Second, the content of the training sessions

was determined based on teachers' stated needs as reported in the questionnaires. Then, all of the teachers participated in appropriate training.

Finally after two months, semi-structured interviews were conducted on an individual basis to evaluate whether or not the teachers had used the applications they were trained in, and the reasons for their use or non-use of such technology in their classrooms. Each participant was given 7–10 minutes to answer all of the questions. The collected data were analysed by transcription and categorized into themes before the research was written up.

Data Analysis

The analysis was divided into two main parts. The completed questionnaires were analysed by counting the frequencies; the data were then converted into percentages and rankings. The purpose was to focus on the teachers' interest in technology, and to determine what the training should include. After training, semi-structured interviews were conducted. Teachers' responses were recorded and then translated into English by the researcher. The keywords from the participants' responses were allocated and categorized based on their answers to learn how often they had used the technological applications they were trained in.

Findings

Teachers Stated Needs

The findings from the questionnaires and semi-structured interviews are reported in this section. The questionnaire was used to elicit the teachers' background information and their use of technology in the classroom, as shown in Table 1 below.

Table 1 *Teachers' Use of Technology in the Classroom*

Information Sought	Response (%) and Technology Used/Purpose
1. Do the teachers use technology in their classrooms?	100
2. The programs/applications teachers use to support their teaching	36.3—MS Word; 27.3—MS PPT; 22.7—YouTube; 13.7—MS Excel
3. Applications teachers use on smartphones	26.7—Facebook; 26.7—Messenger; 26.7—Line; 13.3—Instagram; 6.6—Others (dictionary online, Pinterest)
4. Do teachers use smartphones to support their teaching?	80—Yes; 20—No
5. Reasons that teachers use smartphones to support their teaching	62.5—information; 25.0—translation; 12.5—new game information
6. The applications that teachers find beneficial in teaching and learning	70—Quizizz; 30—Kahoot
7. Expectations of what will be learned in training program	42.9—application of technology in classroom; 28.6—explore types of technology; 23.8—updating 21st century skills; 4.7—discovering key elements of each type of technology
8. The important aspects in learning for which technology is used in the classroom	18.2—motivate students to learn; 17.9—help students practice language skills; 14.5—create a relaxing classroom environment; 13.3—help assess students' learning; 12.0—increase students' engagements/participation; 10.8—help me check students comprehension; 6.8—keep records of students' learning; 6.5—save time making quizzes/exams

Table 1 shows the results of the questionnaire regarding teachers' use of technology in their classrooms. There were two main types of technology that were used. The first type was hardware. It can be seen that all of the teachers used computers. For software, Microsoft Word was most often

used by the teachers, followed by Microsoft Power Point, YouTube, and Microsoft Excel. Moreover, the results showed that eight out of the 10 teachers used their smartphones, and the applications most often used by the teachers were Facebook, Messenger, and Line in equal measure, followed by Instagram and other applications–for example, online dictionaries and Pinterest.

In terms of using smartphones to support their teaching, eight participants used them to support their teaching in order to find information, facilitate translation, and find new games. *Kahoot* and *Quizizz* were applications that all teachers had heard of, and they were very popular. Moving to the teachers' expectations of applications from training programs, most teachers expected to explore and learn how to apply different types of technology in their classrooms, to be kept updated with necessary 21st century skills, and to be made familiar with key elements of each technology type.

The last question involved important aspects in learning for which technology was used in classrooms. It was intended to show the nature of teachers' aims in learning different types of technology and their applications. Most participants wished to use applications in their classrooms because they wanted to motivate their students to learn. This was followed by a desire to help students practice language skills, create a relaxing classroom environment, help in assessing students' learning, and increase students' engagement and participation (represented 18.2%, 17.9%, 14.5%, 13.3%, and 12.0% respectively). For additional needs, 10.8% mentioned these applications could help them check students' comprehension, followed by helping them keep records of students' learning, and save time in making quizzes and examinations (6.8% and 6.5% respectively).

To align with teachers' circumstances and their stated needs, four applications were selected for review: Padlet, Kahoot, Quizzizz, and Plickers.

Teachers' Use of Technology

As mentioned before, training was given to participants based on answers to previous questions. After two months, semi-structured interviews were conducted; results are shown in Table 2.

Table 2 *Teachers' Use of Technology*

Participants (Age)	T1 (25)	T2 (25)	T3 (29)	T4 (30)	T5 (32)	T6 (36)	T7 (37)	T8 (40)	T9 (57)	T10 (59)	Totals
Did the teachers actually use these applications in their classrooms?	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes = 60% No = 40%
Use of Applications in Classrooms — Padlet	x		x			x	x	x	x		0
Kahoot	√		x			√	√	√	√		5
Quizizz	x		x			x	x	x	x		0
Plickers	√		√			x	√	x	√		4
Totals	2	0	1	0	0	1	2	1	2	0	

As shown in this Table, six teachers used at least one of these applications in their classrooms, and four teachers did not use any of the aforementioned applications (60% and 40%, respectively). It is interesting to note that the six participants who used applications were the younger teachers, and Kahoot seemed to be the most popular application (chosen by five out of six application users, or 83%). However, Plickers was also used by four participants, though it is more complicated than the Kahoot application. None of the teachers used Padlet or Quizziz.

Table 3 presents teachers' reasons for the use of applications in their classroom. Three teachers (23.0%) stated that using these applications could save them time. Two teachers (15.4%) stated that they were easy to use, could help them to record students' scores, reduce paper usage, and encourage students in the classroom. Only one teacher (7.7%) mentioned that these applications were already familiar to students, and that they could analyse the tests from student scores.

Table 3 *Reasons for Teachers' Use of Applications in the Classroom*

Reasons for Teachers' Use of Applications in the Classroom	Total Mentions Number (%)
Time-saving	3 (23.0)
Ease of use	2 (15.4)
Recording scores	2 (15.4)
Reducing paper usage	2 (15.4)
Encouraging and motivating students	2 (15.4)
Familiarity to students	1 (7.7)
Analysing tests	1 (7.7)

The following quotes from interviews provide more details of the teachers' reasons:

"I used Kahoot and Plickers in my class for recording students' scores because students can know their scores in real time; it helps me to save my time for doing other things. Moreover, it is easy to use, especially the Kahoot application. I can also analyse my test from the percentages of students' answers ...." (Participant 1).

"I used only Plickers in my class because of an Internet problem, and this application helped me to reduce the paper usage. I used it for both my pre-teaching and post-teaching in every chapter ...." (Participant 3)

The data presented in Table 4 shows the problems that occurred when teachers used the applications in the classroom. Five teachers (62.5%) reported having problems with the Internet and Wifi connections, the main problem being that the Internet and Wifi were not available in all areas. Two teachers (25%) mentioned that students did not always have their own smartphones, and one teacher (12.5%) observed that their students always guessed the answers in the Kahoot application.

Table 4 *Problems of Using Applications in the Classrooms*

Problems that Occurred When Using Applications in Classrooms	Total Mentions Number (%)
Problem with Internet and Wifi connections	5 (62.5)
Students not owning own smartphones	2 (25)
Students guessing the answers	1 (12.5)

The following quotes from interviews provide more details of the teachers' reasons:

"Internet connection is a big problem, the Wifi is quite low speed and does not cover in all areas ...." (Participant 1).

"The problem that I found is about the Internet. The Wifi is very slow, and it does not cover all parts of the college, including some classrooms ...." (Participant 3)

However, there were also some English teachers who did not use applications in their classrooms. Four teachers did not use application because of factors shown in Table 5.

Table 5 *Reasons for Teachers' Non-use of Applications in Classroom*

Reasons for Teachers Non-use of Applications in Classroom	Total Mentions Number (%)
Poor Internet connections	3 (37.5)
No projector	2 (25.0)
Lots of teaching work	1 (12.5)
Focusing on other skills	1 (12.5)
Students not having their own smartphones	1 (12.5)

According to Table 5, three teachers (37.5%) cited a poor Internet connection as their reason for not using the applications. Two teachers (25%) said no projectors were provided in their classrooms, and one teacher (12.5%) each mentioned that they focused on other skills; the application in this study could not support their teaching, they had lots of teaching work, and some students did not have their own smartphones. Excerpts of interviews with participants supported this:

"I don't use those applications because of the time limitation and workload. I don't have time to create my lesson. Besides, the Internet connection is also a big problem …." (Participant 2).

"I would like to use those applications, but the problem is that no projector is provided in my classroom, as well as the low speed of the Wifi and Internet connection …." (Participant 4).

From the results, it should be noted that students not having their own smartphones are not always an issue for teachers using these applications in their classrooms. With the Plickers application, students do not need to use their own smartphones, as noted in the interview with Participant 3, who mentioned that she used Plickers because in doing so she avoided the problem of students who did not have their own smartphones.

Discussion
Teachers' Stated Needs
The findings from the needs analysis questionnaire showed that all of the teachers had integrated technology in their classrooms. Software and hardware were the two main types of technology used. Computer hardware was used by all teachers, even though it was not provided in all classrooms. Regarding software, the results showed that the Microsoft Word program was used most often, followed by Microsoft PowerPoint, YouTube, and Microsoft Excel, which agrees with the findings of Saenkhot and Boonmoh (2019). They mentioned that Microsoft Word and PowerPoint were most often used by the teachers. Moving to teachers' expectations from an applications training program, most teachers expected to learn how to apply types of technology in the classroom, to explore types of technology, to be kept updated with necessary skills in the 21st century, and to become familiar with key elements of each technology type.

Before the training program was conducted, the English teachers were asked about their stated needs regarding the use of technology in the classroom in order to provide applications in line with their stated needs. The results from the questionnaires showed that the stated needs of all English vocational teachers were to motivate students to learn the most, followed by helping students practice language skills, creating a relaxing classroom environment, helping to assess student learning, increasing student engagement and participation, helping to check student comprehension, keeping records of student learning, and saving time for marking quizzes or exams. Therefore, to answer their stated needs, four applications were provided—Padlet, Kahoot, Quizizz, and Plickers—and the results are shown below.

Teachers' Actual Use of Technology
After the training, six of the 10 English vocational teachers in the study used the applications they had trained on in their classrooms, and the applications used most often were Kahoot and Plickers because these applications were easy to use and could save their time. However, unexpectedly most teachers who used the applications had more than 10 years of teaching experience, and were 30 to 57 years old. The results of this study were not in agreement with previous studies by Gentry and Lindsey (2008) and Wright and Wilson (2011), who found that age was the main factor affecting teachers' perception regarding the integration of technology into their classrooms. The previous studies showed that pre-service and younger in-service teachers had more positive views of seeking professional development and were more willing to be trained to improve their ability in integrating technology in classrooms, compared to teachers who had more than 10 years of teaching experience. This study found that age did not affect teachers' perceptions in

seeking professional development or their willingness to train on integrating technology. It did not matter whether they were 25 or 60 years old, as long as it served their stated needs, they were willing to be trained on integrating technology in classrooms. The 57 year-old teacher encountered in this study, who was not familiar with new technology or applications, could integrate applications in her classroom following being trained in the applications that met her stated needs. Moreover, this study also contradicts that conducted by Gentry and Lindsey (2008) who reported that teachers with more experience in technology perceived themselves as more effective technology users. Our study found one 25 year-old teacher who perceived herself as a more effective technology user, even though she did not integrate the use of technology in her classroom.

The most-often cited reasons that English vocational teachers gave for using the applications in their classrooms were time saving and ease of use. These findings are in accordance with those of Saenkhot and Boonmoh (2019), who mentioned convenience as the factor that prompted teachers to use technology. Even though six of the teachers integrated technology in their classrooms, some problems occurred during their use of applications. Not having an Internet connection and Wifi not being available in all areas were the common problems, followed by students not having their own smartphones, and students guessing the answers in the Kahoot application.

Moving to the reasons why four teachers did not use the applications in their classrooms, the major problem was a poor Internet connection, followed by having no projectors, having a great deal of teaching work, focusing on other skills, time limitations, and students not having their own smartphones. These findings did not in agree with the studies of Kotrlik and Redmann (2009) and Merc (2015). They mentioned that lack of basic facilities and availability of technology for all students in classes were the major barriers for teachers struggling to integrate technology in their classrooms. The findings of Saenkhot and Boonmoh (2019) coincide with the reasons given in our study (Tables 4 & 5). They found that teachers do not use technology because the facilities were not available. In the study reported here, Internet problems and lack of equipment (projectors and smartphones) were the biggest reasons technology was not used.

Conclusions

In order to answer the first research question on teachers' stated needs regarding the use of technology, all English vocational teachers wanted to train in and use applications or technologies that helped them to motivate students to learn, aid students in practicing language skills, create a relaxing classroom environment, facilitate the assessment of student learning and comprehension, increase student engagement and participation, assist in record keeping, and save time for making quizzes or exams. Therefore, training in four applications (Padlet, Kahoot, Quizizz, and Plickers) were conducted and delivered to English teachers in accordance with their stated needs.

After training was conducted, answers were gathered to the second research question regarding teachers' actual use of technology in their classrooms. The results from this study showed that only six of the 10 teachers had integrated the technology in their classrooms. The applications that they used most often were Kahoot and Plickers because these applications were easy to use and could save their time, help them to record student scores, reduced paper usage, encouraged students in the classroom as the students were familiar with them, and they could readily analyse results from student scores. However, some problems occurred during their use of the applications. For example, an Internet connection and Wifi were not available in all areas, not all students had their own smartphones, and students guessed the answers to the Kahoot application. The four teachers who did not integrate the technology in their classrooms cited a poor Internet connection, having no projectors, focusing on other skills which the applications could not support, having lots of teaching work, time limitations, and students not having their own smartphones.

Implications

Technology commonly used in classrooms includes computers, programs and websites, such as Microsoft Word, Microsoft PowerPoint, and YouTube. Therefore, teachers in the 21st century need

to understand the role of technology and learn how to integrate technology in the classroom in order to support their teaching. Previous findings revealed that training teachers in new technology or applications arising from a top-down policy was not successful, as teachers may not be interested in the topics of training and may lack technological knowledge (Wiangsima & Boonmoh, 2018). However, if the technology training comes from a bottom-up rather than a top-down policy, and it is based upon teachers' stated needs, teachers are more willing to integrate technology in their classrooms. The findings of this study indicated that the successful integration of technology in classrooms does not depend on the teacher's age or years of teaching experience, but rather depended upon their stated needs and willingness to learn. The results showed that a 57-year-old teacher who was not familiar with new technology or applications, upon being trained in the applications that met her stated need, could integrate those applications in her classroom. In future studies, more time might be provided–perhaps one academic year–to assess whether teachers ultimately used the applications they were trained for in the classroom.

References

Ahmadi, M. (2018). The use of technology in English language learning. *International Journal of Research in English, 3*(2), 115–125.

Basal, A. (2015). English Language teachers and technology education. *Journal of Theory and Practice in Education, 11*(4), 1496–1511.

Cote, T. & Milliner, B. (2018). A survey of EFL teachers' digital literacy: A report from Japanese University. *The Journal of Teaching English with Technology, 18* (4), 71–89.

Courville, K. (2011, June 6–8). *Technology and its use in eeducation*: *Present roles and future prospects* [Paper presentation]. The 2011 Recovery School District Technology Summit, Baton Rouge, LA, United States.

Davidson, J., Richardson, M., & Jones, D. (2014). Teachers' perspective on using technology as an instructional tool. *Research in Higher Education Journal, 24*, 1–16.

Eristi, S., Kurt, A., & Dindar, M. (2012). Teachers' views about effective use of technology in classrooms. *Turkish Online Journal of Qualitative Inquiries, 3*(2), 30-41.

Gentry, J., & Lindsey, P. (2008). Teachers' perceptions of technology use in schools. *I-Manager's Journal on School Educational Technology, 4*(1), 45–50.

Gorra, V., & Bhati, S. (2016). Students' perception on use of technology in the classroom at higher education institutions in Philippines. *Asian Journal of Education and E-learning, 4*(3), 92–103.

Kotrlik, W., & Redmann, H. (2009). Technology adoption for use in instruction by secondary technology education teachers. *Journal of Technology Education, 21*(1), 44–59.

Merc, A. (2015). Using technology in the classroom: a study with Turkish pre-service EFL teachers. *The Turkish Online Journal of Educational Technology, 14*(2), 229–240.

Muir-Herzig, G. (2004). Technology and its impact in the classroom. *Journal of Computers & Education, 42*(2), 111–131.

Roche, S. (2017). Listening to the grass roots: Bottom-up approaches to lifelong learning. *Journal of Lifelong Learning, 63*(2), 145–152.

Saenkhot, A., & Boonmoh, A. (2019). Factors affecting teachers' use of technologies as teaching aids in Thai EFL classrooms. *Journal of Liberal Arts, Prince of Songkla University, 11*(1), 269–306

Solano L., Cabrera, P., Ulehlova, E., & Espinoza, V. (2017). Exploring the use of educational technology in EFL teaching: A case study of primary education in the south region of Ecuador. *The Journal of Teaching English with Technology, 17*(2), 77–86.

Wiangsima, A., & Boonmoh, A. (2018). Teachers' perceptions for teaching English in the near future. *Journal of Liberal Arts Ubon Ratchathani University, 14*(2), 1–21.

Wright, V., & Wilson, E. (2011). Teachers' use of technology: lessons learned from the teacher education program to the classroom. *SRATE Journal, 20*(2), 48–60.

Xu, L. (2012). The Role of Teachers' Beliefs in the Language Teaching-learning Process. *Theory and Practice in Language Studies, 2*(7), 1397–1402.

Yordming, R. (2017). Teachers' perspective towards digital teaching tools in Thai EFL classroom. *International Journal of Language, Literature and Linguistics, 3*(2), 45–48.

Zehra, R., & Bilwani, A. (2016). Perception of teachers regarding technology integration in classrooms. *Journal of Education and Educational Development, 3*(1), 1–29.