HIGH SCHOOL ENGLISH TEACHERS' ICT LITERACY IN TEACHING ENGLISH

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ABSTRACT

This study was aimed at investigating high school English teachers' ICT literacy with more specific objectives, i. e., to investigate: (i) how well high school English teachers were familiar with various types of ICT for educational purposes; (ii) the extent to which English teachers implemented ICT in their teaching; and (iii) the obstacles English teachers faced in implementing their knowledge of ICT in their teaching. Generation Z are those who were born in digital era and are exposed to technology since their young age. To teach this generation, teachers need to be technology literate and must master certain knowledge that enables them to integrate technology in their teaching. Quantitative decriptive research design was employed in this study. A set of five-point Likert scale questionnaire was distributed to English teachers who taught in Junior and Senior high schools in Surabaya and was analyzed using descriptive statistics. The findings revealed that majority of the respondents' familiarity with the types of hardware and software were ranging from quite well to very well; the majority of the respondents' frequency in using ICT was very often; majority of the respondents' proficiency in using ICT was moderate; and the only obstacle the teachers faced was lack of effective training to implement ICT in teaching. The present study may give insights for teacher development programs to improve their proficiency in implementing ICT in their classes to teach generation Z.

Keywords: ICT, ICT literacy, TPACK, English teaching, generation Z

INTRODUCTION

Both the development of technology and the increasing number of human beings are two things that never be stopped. As technology has influenced the world in many aspects, how human being interact with their surroundings is also influenced as it happens in educational aspect. The technology has changed how students interact with things in educational realm such as reading, that now they prefer to read online. Based on the finding of Collins' study (as cited in Rahmat, Rahman, and Hassan, 2018), today's pupils prefer to read online as "the reading behaviour of the youths had significantly changed over the years". It is also related to Castro and Alves' statement (as cited in Marwan, 2015) that information, communication, and technology (ICT) can influence the way students learn. Besides on the students' side, the influence of technology is also found on teachers' side. As Rabbani (2017) states, teaching writing is always challenging throughout the ages that "has gone through stages of evolution and experimentation over the past few decades". Furthermore, the media for learning are also evolved as the technology advances. It reveals that technology facilitates learning (Reinders and White as cited in Tomlinson, 2012; Muslem, Yusuf, Juliana, n.d.).

The generation who was born in the advanced technology era is called generation Z or genZ (Rabbani, 2017; Rahmat, Rahman, & Hassan, 2018). They require different ways of teaching in their education (Reeves &

Oh, 2008) because they are very close to technology and social media since from their young age (Rahmat, Rahman, & Hassan, 2018).

In order to teach genZ students using technology, teachers should have a certain knowledge that helps them to implement technology properly in their teaching. The knowledge is called technological, pedagogical, and content knowledge (TPACK). As the name suggests, there are seven knowledge domains: technology knowledge (TK), content knowledge (CK), pedagogical knowledge (PK), pedagogical content knowledge (PCK), technological content knowledge (TCK), technological pedagogical knowledge (TPK), and technological, pedagogical content knowledge (TPACK) (Rahayu, 2017; Pusparini et al., 2017; Koehler and Mishra, 2009).

Previous studies reveal that there are tools that are used by teachers to be implemented in their teaching such as Microsoft PowerPoint, WhatsApp, email (Dewi, 2017), Facebook (Annamalai, 2018), YouTube (Baker et al., 2015), and so on. In addition, previous studies also showcased the challenges the teachers face when they are implementing ICT in their teaching such as lack of competence in integrating ICT into pedagogical practice (Bingimlas, 2009; Muslem et al., 2018; Nhu et al., 2019; Lubis, 2010; Effiong & Bubaraye, 2017) and lack of technical support (Bingimlas, 2009; Nhu et al., 2019). Therefore, the teachers should be literate to technology as they are going to implement them in their teaching to teach students who are apt to technology. The aims of the present study were to find out (i) how well English teachers were familiar with various types of ICT for educational purposes; (ii) the extent to which English teachers implemented ICT in their teaching; (iii) the obstacles English teachers faced in implementing their knowledge of ICT in their teaching.

METHOD

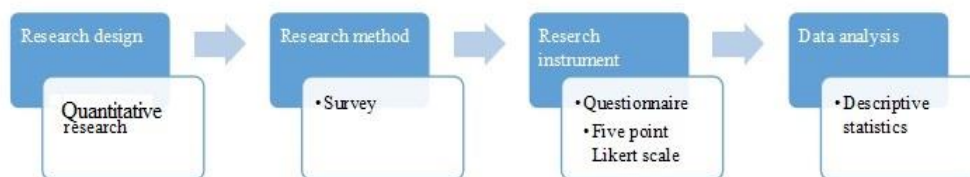The present study research design is presented in Figure 1.

Figure 1. Framework of research design

The respondents of this study are both junior and senior high school English teachers in Surabaya. Some of the respondents are teaching in private schools, while some others are teaching in state schools. Random sampling technique was applied in this research because each teacher in the population has the same opportunity of being a respondent (McMillan, 2012).

After having been tried out and revised based on the feedback gathered from the responses, the questionnaires were distributed to English teachers of junior high and senior high schools in Surabaya. The questionnaires consisted of, part one, questions that addressed demographic information from the respondents; part two, that was aimed to answer the first research question which asked the respondents about the devices they were familiar and how well they were familiar with them; and part three, questions aimed to answer the second research question, which were separated into two sections. The first section asked the respondents about how often they implemented ICT in their teaching and also how skillful they used it. Then, to answer the third

research question, the fourth part of the questionnaire focused on the challenges or obstacles the teachers faced when they implemented ICT in their teaching.

FINDINGS

The result from the first research question that asked the respondents about their knowledge on ICT is presented in Table 1. It shows that the knowledge of the majority of the respondents about hardware and software were ranging from quite well to very well.

Table 1. The respondents' knowledge of ICT

No	Hardware or software	Knowledge
1	Monitor	very well
2	Keyboard and mouse	very well
3	Projector	very well
4	Printer	very well
5	Scanner	very well
6	Smartphone/ tablet	very well
7	Operating systems	well
8	Word processors	well
9	Presentation	well
10	Spreadsheet	well
11	Email clients	quite well
12	Note taking	well
13	Social media	well
14	Messengers	well
15	Online forms	well
16	Online video services	well
17	Online interactive quiz makers	well
18	Cloud based storage	well
19	Video conference	well
20	Webinar	well
21	LMS	well
22	Graphic and multimedia	well
23	Blog makers	quite well
24	Video editors	quite well
25	Search engine	well

The result from the second research question asking about how frequent the ICT (hardware and software) was implemented by the respondents is presented in Table 2. The result shows that the frequency ranges from never to very often.

Table 2. The respondents' frequency in using ICT

No	Hardware or software	Frequency
1	Monitor	very often
2	Keyboard and mouse	very often
3	Projector	seldom
4	Printer	often

5	Scanner	seldom
6	Smartphone/ tablet	very often
7	Operating systems	very often
8	Word processors	very often
9	Presentation	very often
10	Spreadsheet	very often
11	Email clients	very often
12	Note taking	sometimes
13	Social media	very often
14	Messengers	very often
15	Online forms	often
16	Online video services	very often
17	Online interactive quiz makers	sometimes
18	Cloud based storage	very often
19	Video conference	very often
20	Webinar	never
21	LMS	very often
22	Graphic and multimedia	sometimes
23	blog makers	never
24	Vlogging/video editor	never
25	Search engine	seldom

Furthermore, the respondents' proficiency in using ICT was ranging from basic to advanced. Table 3 presents the proficiency of the respondents in using ICT and language skills they taught using ICT.

Table 3. The respondents' proficiency in using ICT and the skills they taught

No	Hardware or software	ICT Proficiency	Language skills they taught
1	Monitor	advanced	
2	Keyboard and mouse	advanced	
3	Projector	intermediate	
4	Printer	intermediate	
5	Scanner	intermediate	
6	Smartphone/ tablet	advanced	
7	Operating systems	intermediate	
8	Word processors	intermediate	Reading, Writing, Vocabulary, Grammar
9	Presentation	intermediate	Listening, Speaking, Reading, Writing, Vocabulary, Grammar, Pronunciation
10	Spreadsheet	intermediate	Vocabulary
11	Email clients	intermediate	Writing
12	Note taking	intermediate	Writing
13	Social media	intermediate	Listening, Speaking, Reading, Writing, Vocabulary, Grammar, Pronunciation
14	Messengers	intermediate	Listening, Speaking, Reading, Writing, Vocabulary, Grammar, Pronunciation
15	Online forms	intermediate	Writing
16	Online video services	intermediate	Speaking
17	Online interactive quiz	intermediate	Listening, Speaking, Reading, Writing, Vocabulary, Grammar, Pronunciation

	makers		
18	Cloud based storage	intermediate	Listening, Speaking, Reading, Writing, Vocabulary, Grammar, Pronunciation
19	Video conference	intermediate	Listening, Speaking, Reading, Writing, Vocabulary, Grammar, Pronunciation
20	Webinar	intermediate	Listening
21	LMS	intermediate	Listening, Speaking, Reading, Writing, Vocabulary, Grammar, Pronunciation
22	Graphic/multimedia	intermediate	Listening
23	blog makers	intermediate	Reading
		basic	Writing
24	Vlogging/video editor	basic	Listening, Speaking, Reading, Writing, Vocabulary, Grammar, Pronunciation
25	Search engine	intermediate	

The last research question was about the challenges the teachers faced when they implemented ICT in their teaching. The most of the challenges asked in the questionnaire were not experienced by the respondents as showed in Table 4. There was only one challenge experienced by the respondents, i. e., lack of effective training to implement ICT in teaching. Additionally, there were four (4) additional challenges stated by the respondents as additional challenges.

Table 4. Challenges faced by the respondents

No	Challenges	Respondents' Opinions
1	Lack of confidence	disagree
2	Lack of competence in integrating ICT into pedagogical practice	disagree
3	Resistance to change or negative attitudes	strongly disagree
		disagree
4	Age	strongly disagree
5	Lack of effective training to implement ICT in teaching	agree
6	Lack of devices availability and accessibility	strongly disagree
7	Lack of technical support	strongly disagree
8	Lots of workload	strongly disagree
9	Lack of internet accessibility	strongly disagree
10	Lack of time to plan or prepare before the class	strongly disagree
11	Lack of time in class	strongly disagree
12	Poor financial conditions for ICT facilities	strongly disagree
		disagree
13	Oversized classes	strongly disagree
14	Strict school rules	strongly disagree
15	Lack of students' participation	strongly disagree
16	Lack of ICT based materials	strongly disagree
17	During the COVID-19 pandemic, there were some students' devices that were not working properly, so the teachers could not communicate with the students well that affected to the assignments submission negatively	Additional challenges from respondents
18	Overloaded working schedule	

| 19 | There was no mentor | |
| 20 | Various teaching methods | |

DISCUSSION

The findings of the first research question showed that the English teachers' knowledge on hardware and software was ranging from quite well to well. There are two factors influencing their knowledge of ICT, the first was the instruction from the educational authority to implement emergency remote teaching during the outbreak of COVID-19 and the second was the area where the English teachers live, i. e., Surabaya, as one of the big cities in Indonesia. The implementation of emergency remote teaching positively forced the teachers to know and use both software and hardware. Both software and hardware features that had never been used for teaching before the pandemic were used during the emergency remote teaching such as web cameras, recording presentation feature which is built in the presentation software, and video conference software. In addition, there were some kinds of software that became popular during the pandemic, such as video conference software, LMS, and online forms that positively forced teachers to learn how to use the software and implement them in their teaching.

The second factor was the area where the English teachers lived and taught, Surabaya, one of the biggest cities in Indonesia. The availability of reliable internet providers is higher than in other areas, such as smaller cities or even remote areas. Also, it is easier to afford technical supports in Surabaya compared to that in smaller cities or even in remote areas. Having reliable internet connection made English teachers in Surabaya have more possibilities to find tutorials on the internet on how to operate or use certain hardware or software so that they know how to use them. In addition, the availability of newest technology is also higher than in smaller cities or even in remote areas. The teachers can search for new devices, even new software they need easier than those who live in remote areas. As previously mentioned, living and teaching in Surabaya were the second reason why the English teachers' knowledge on hardware was very well and the knowledge on software was ranging from quite well to well.

The related to the second research question, i. e., the extent to which English teachers implemented their knowledge of ICT in their teaching. In terms of how often the respondents used ICT in their teaching, there were three factors influencing the teachers' frequency in using ICT.

Firstly, the emergency remote teaching which allowed the teachers to work from home had changed the way they worked and taught their students. In order to teach in an emergency condition during the outbreak, the teachers needed to use software that could be run in a low speed internet connection and in mobile devices (lightweight software). In addition, the teachers also needed to use user friendly software which did not need certain expertise or was not too complicated, such as video editors and blog makers. As mentioned above, certain software that needed powerful devices, high speed internet connection, and certain expertise were never used by the respondents, such as webinar, blog makers, and video editors. On the contrary, software that is user friendly, lightweight (not require fast CPU, high capacity of RAM, and fast internet connection) and available in mobile version is suitable for emergency remote teaching. Certain types of software can even promote collaboration skills. Therefore, these types of software were used more frequently, such as word processors, presentation software, spreadsheets, email clients, social media, messengers, online video services, cloud-based storage, video conference, and LMS. This software had been used by the teachers in daily basis since long

before the pandemic began. Even during the emergency remote teaching, the teachers did more work than before, such as scanning certain documents that were used offline before. To some extent, teaching in emergency remote teaching and working from home made the teachers use presentation software online most of the time.

Secondly, the frequency of using ICT could be influenced by teachers' habit. For example, if teachers have a habit of note taking using their physical books rather than using software, they might rarely use note taking software or even they did not use it at all.

Thirdly, one last factor influencing the frequency of using ICT in teaching was flexibility. The more flexible certain software is, the more frequent it will be used. For example, an interactive online form which provides many types of questions and can be used conveniently, and the online tools which provide a self-paced feature, so that students could do their assignment based on their own pace or asynchronously were preferably utilized by most of the respondents.

In terms of how proficient the respondents were in in using ICT, the finding showcased that their proficiency varied over the hardware and software. For example, in using blog makers and video editors, the respondents' proficiency was basic. The first possible cause was the software is not suitable for emergency remote teaching because this software needs more resources in terms of both the devices and the internet. Another cause was that the software is not related directly to their profession as teachers. They were not obliged to use the software. In addition, the present study also presented that certain respondents had intermediate proficiency in using blog makers. The possible reason for this was that some of the teachers, to some extent, had tried to use blog makers either for personal or professional purposes, so that these teachers had the proficiency in using blog makers although still limited.

Furthermore, the rest of the hardware and software that were asked, such as projector, printer, scanner, operating systems, word processors, presentation, spreadsheet, email clients, note taking, social media, messengers, online forms, online video services, online interactive quiz makers, cloud-based storage, video conference, webinar, LMS, graphic/multimedia, blog makers, and search engine, the respondents' skill was intermediate. The causes why the skill of the respondents was intermediate were that the respondents, to some extent, were able to use the hardware and software to finish their duties in daily basis. However, there was a limit where they could not use the software until the uttermost of the software ability. In this case, they needed assistance from others to use certain features of the software they had not mastered yet.

In using monitor, keyboard and mouse, smartphone, and tablet the respondents' proficiency was advanced. The possible cause for this was that the teachers had been using the hardware in daily basis. The more frequent they used the hardware and software, the more proficient they were. It was also possible that the teachers had used the hardware since long before they became a teacher.

The second research question also included language skills and components that the teachers taught using ICT (listening, speaking, reading, and writing, pronunciation, grammar, and vocabulary). There were some types of software that could be used to teach all the skills mentioned, while some others could be utilized to teach certain skills only. Again, the outbreak of COVID-19 had changed the education world. As the instruction of emergency remote teaching had been applied, the teachers and students should work and study from home. Consequently, the teachers needed to utilize hardware and software that were suitable with the emergency situation. The software should be able to be run in a low internet bandwidth and lightweight (no need

powerful devices). With the development of the technology, there were certain types of software that are available in mobile version and free of charge. Also, some of them promoted collaboration. The examples of software that had these characteristics were word processors, presentation, spreadsheets, email, messengers, social media, online forms, LMS, cloud based storage, online audio and video services, and video conference.

The findings related to the third research question showed that there was only one challenge from 16 challenges listed that the respondents agreed with, i. e., lack of effective training to implement ICT in teaching. The rest of the challenges, the intrinsic ones such as confidence to implement ICT, competence in integrating ICT into pedagogical practice, willingness to improve themselves, and age were not agreed by the respondents. Similarly, the extrinsic ones such as availability and access to devices, technical support, workload, accessible internet connection, time to plan or prepare before the class, financial support for ICT facilities, oversized class, strict school rules, ICT based materials, and students' interaction also were not agreed by the respondents either.

The English teachers were able to use ICT in their daily basis for personal use, however, they needed more assistance in implementing ICT in their teaching because using ICT, for example social media, for personal use and for teaching were different things. Using social media for teaching was driven by certain things that should be followed by the teachers, such as the learning outcomes as the last destination where the teachers have to bring their students to. On the contrary, using social media for personal use did not require the teachers to follow learning outcomes at all. The same principle was required when the teachers used video conference software or other software. Therefore, using ICT for teaching requires the teachers to master TPACK as suggested by Koehler & Mishra (2009), and to put it into realization, training and workshops should be provided.

In addition to that, there were four challenges mentioned by the respondents in the questionnaire: (i) during the COVID-19 pandemic, there were some students' devices that were not working properly, so the teachers could not communicate with the students well and this could negatively affect the submission of the students' assignments; (ii) teachers' working schedule was overloaded; (iii) there was no mentor; and (iv) teachers' lack of various teaching methods.

The first challenge was one of the consequences of emergency remote teaching to prevent the outbreak of COVID-19. As it was unplanned, there were some elements—the teachers, the students and their parents, and even the internet providers, who were not ready to provide reliable and proper devices or services to run emergency remote teaching well.

The next is related to the second and the third opinions. The second opinion (teachers' working overload) needed parties to overcome the challenge. The parties could be the school administrators, the policy makers, and the teachers themselves, also the numbers of teachers and students as overload working schedule could be an issue from more than one sources. The third opinion was related to the training workshop mentioned earlier that teachers needed to be guided or assisted on how to implement ICT in their teaching. Furthermore, the last opinion was related to certain teaching methods. It might be caused by the lack of knowledge and practice on how to implement ICT with different teaching methods.

CONCLUSION AND SUGGESTIONS

The outbreak of COVID-19 and the area in which the English teachers live, which is a big city, positively forced them to learn, know, and use both software and hardware in their teaching. The findings of this

study revealed that the English teachers' knowledge on hardware and software were ranging from quite well to very well. However, the extent to which they implemented their knowledge of ICT in their teaching varied in terms of the types of hardware and software they knew. They admitted that they needed assistance in implementing ICT they already knew to their teaching but there was lack of effective training to implement ICT in teaching. Teachers might be literate in using technology for personal purposes but not for teaching, therefore, educational authorities are encouraged to provide more trainings or workshops for English teachers on implementing ICT in their teaching. Those who are teaching using technology need TPACK. Additionally, English teachers could search by themselves for free online trainings or workshops provided by either local or international campuses or educational institutions and join them to upgrade their capability in implementing ICT in teaching English. Furthermore, they can also read related journal articles and try to implement what they get from the articles they read.

This study was participated by teachers living in a big city only, for future research in the field of teachers' ICT literacy, it is suggested that it expand the areas where the participants live including rural ones. Additionally, various educational levels of the teachers (teachers who teach in primary schools until senior high schools) or even lecturers could be involved. An extended research issue could also be conducted, i. e., how teachers implement ICT in their teaching.

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