
INVESTIGATING TEACHERS' BARRIERS TO ICT (INFORMATION COMMUNICATION TECHNOLOGY) INTEGRATION IN TEACHING ENGLISH AT SENIOR HIGH SCHOOLS IN PEKANBARU

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Abstract

As numerous issues of effective use of ICT (Information and Communication Technology) in English teaching and learning contexts, many teachers worldwide have been starting to deploy either simple or advanced technology products. However, some challenges are still inevitable, which affect the effectiveness of ICT integration in teaching and learning process. In this case, this paper reports an effort of investigating teachers' barriers to ICT integration in teaching English at Senior High Schools in Pekanbaru. This study worked on descriptive research design in which qualitative and quantitative approaches employed to analyze the underlying barriers of ICT integration in English language teaching. Questionnaires were distributed to fourteen Senior High School teachers in Pekanbaru, and afterwards open-ended interview was also carried out to gather further information about the teachers' barriers in integrating ICT. Then, the findings indicated that some barriers encountered by the teachers in term of accessibility of ICT, time, professional development, and technical support. Hence, these linking barriers suggest the teachers should be fully motivated and supported to engage with ICT in their teaching activities.

Keywords: Barrier, ICT, English

1. INTRODUCTION

Information and communication technology (ICT) has been widely used in many realms. In education field, teachers are required to be able to integrate it in teaching and learning activities, either in the classrooms or out of the class because of its usefulness for creating new education environment, developing teaching method, and improving education quality.

In English language teaching context, the existence of the ICT can transform the learning atmosphere to be more interesting and meaningful. Despite explaining the lesson, the teachers as facilitators can deploy some ICT devices or products in the process of presenting and delivering information to the students, such as; using video and inviting the students to perform a dialogue based on the example in the video. So, the deployment of the video provides new learning experience for the students. Then, they can also have multimedia environment in their classrooms. In addition, the process of learning is not merely in the classrooms, but it can be conducted out of the classes in virtual learning setting. Then, it will positively affect the students' interest, participations, and also understanding.

The use of ICT can also influence the development of teaching method due to the needs of applying more effective ways in utilizing the ICT during the teaching and learning processes. Conventional ways of teaching cannot be successfully run in ICT integrated classrooms. In this case, the teachers have to enrich their methods in teaching, for example; when deploying video in English language teaching context, the teachers can conduct the teaching and learning activities well by applying the best methods, such as freeze framing, sound off and vision on, full viewing, and so forth (Harmer, 2001). In other words, the integration of ICT in the classrooms will steadily affect the development of teaching methods.

Instead of creating new education environment and developing teaching method, the deployment of ICT also significantly influences the improvement of education standard, (Liu, Xia et al., (2014:1668)). In English language teaching context, the students can easily enhance their language skills because they do not always depend on the teachers as their sources of information, but

they can learn the language independently based on the real context of communication. The teachers only need to facilitate the students to improve their skills by providing learning sources in video or audio format, sharing free tutorial sides in internet, creating online group discussion, and training the students to learn the language in fun ways by using technology. So, the ICT certainly can bear the students' attainment and improve their quality.

However, integrating ICT in teaching practices seems to be a challenge for the teachers. Three points are addressed as rationales to effectively integrate the ICT in teaching and learning process;

Firstly, most of the students nowadays were born in digital era, they have been familiar with technology since they were child. Hence, the teachers are not only required to have good competence on their subjects of teaching, but also being skillful in integrating the ICT to enhance the students' knowledge and competences. The teachers' failures in utilizing the ICT will influence the quality of teaching and learning process.

Secondly, the ICT presents more positive values among teachers and students. Its existence influences education environment, teaching methods, and education quality. In this case, more interesting and challenging classroom activities can be created, meaningful methods can be implemented, and high level of education quality can be reached.

The last but not least, the teachers are also required to cover some problems in the implementation of the ICT in teaching. Although some problems are unavoidably appear in the process of teaching and learning, they need to anticipate some other ways that can be considered as solution to be successfully in integrating the ICT.

Based on the phenomena above, the teachers are required to be knowledgeable and skillful to encounter some barriers that might appear and affect the deployment of the ICT in teaching. Obviously, there have been many studies investigated the teachers' barriers to integrate ICT in teaching (Alwani and Soomro, (2010), Eleman (2016), Liu and Pange (2015), but this study is urgent to be conducted to explore the teachers' barriers in specific subject area, English language teaching.

2. REVIEW OF RELATED THEORIES

2.1 ICT Integration in Teaching

In technology and knowledge based era nowadays, the integration of ICT in teaching is characterized by the equipment of the technology devices to support the teaching and learning activities. It is believed that the integration of ICT is needed in the classrooms. It has powerful roles in educational field to enhance teaching and learning quality, Levin and Wadmany (2006). In addition, it can significantly affect ways of teaching and help teachers in their pedagogical practices and assist students in their learning, Bingimlas (2009).

Hsu (2016) adds that deploying advance technology can boost every single component of the students' learning experiences across curricular areas, so it will affect the development of the students' intellectuality. In other words, the technology can be used to improve the students' knowledge, skills, and education standard, Smeda, et. all (2014).

However, some challenges in the educational systems are inevitable, such as how to increase the students' involvement to provide better educational achievement, Smeda, et. all (2014). In addition, the implementation of ICT cannot be successfully run unless teachers have belief, capability and experiences to use it in daily teaching and learning activities, Elemam (2016).

Teachers' belief about technology integration in teaching is one of the influential factors that can affect the teachers' performances during the teaching and learning process. Hsu (2016) concerned on three components of belief to find out teachers' classroom technology use; pedagogical beliefs, self-efficacy beliefs, and the value of the technology for students. Teachers' pedagogical belief is simply defined as teachers' acceptance in utilizing technology to support the students' performances in learning. The teachers are open with the integration of the technology in teaching. Then, self-efficacy belief refers to the teachers' self confidence in using the technology in the classrooms. It closely connects to the teachers' skills and knowledge about the technology uses. Moreover, the teachers' believe about the importance of the technology for students can also influence the

effectiveness of deploying technology in teaching. The positive value of teachers can significantly influence the frequency of using the technology.

Besides setting up the teachers' belief in integrating technology, being skillful in using the technology is another qualification that has to be accomplished. The teachers have to be frontiers for deploying technological innovations to the teaching and learning activities, Goktas, et.al., (2009). Keep upgrading their knowledge about the deployment of ICT in the classroom is an essential factor of the teachers' success in the classrooms recently. Hence, the students can have meaningful learning activities and steadily improve teaching quality in the classroom. In this case, the teachers should be prepared to be more proficient in the integration of ICT during the teaching and learning processes.

Furthermore, conceptual framework called TPACK (Technological Pedagogical, Content Knowledge) is also required by the teachers to know how well they prepare themselves and measure the learning outcomes, Shinas, et. al. (2014). The knowledge will significantly influence the teachers' success in utilizing the technology in the classrooms.

In short, the integration of ICT in teaching and learning activities bear great value towards students' learning experiences and achievements. So, the teachers are called to be skillful in deploying the technology tools in their classrooms.

2.2 Barriers of ICT Integration in Teaching

Despite the development of ICT, some problems are still faced by teachers. Bingimlas (2009) in a study found that teachers obviously have strong willingness of utilizing ICT in education, but some barriers are inevitable in the application of ICT. Elman (2016) also stated that the teachers may have numerous barriers that they encounter in deploying the ICT.

According to Ertmer (1999) in Lin et.al (2014), barriers of technological integration are divided into two classifications, extrinsic and intrinsic barriers. Teachers' problems in term of technological access, support and time are addressed as the extrinsic barriers. Then, the intrinsic barriers relate to the teachers' beliefs about teaching, technology, classroom practice, and willingness to change.

Bingimlas (2009:235) discovered some main components that hinder the effective deployment of ICT by the teachers; low confidence, limited competence, and scarcity of access to resources. In addition, limited classroom management skills, poor administrative support and funding, and insufficient curriculum appear as minor components.

Alwani and Soomro, (2010) also discussed top ten barriers that prevent the deployment of ICT effectively in Science Education at Yanbu, KSA; (1) lack of budget, (2) insufficient hardware, (3) no electronic science text book, (4) limited English training for IT, (5) Lack of time, (6) No Training of ICT integration in teaching, (7) no interest, (8) not compatible curriculum, (9) no internet connection, (10) ineligible classroom for ICT integration.

Liu and Pange., (2015) in a research about "Early Childhood Teachers' Perceived Barriers to ICT Integration in Teaching: A Survey Study in Mainland China" found first- order and second-order barriers are encountered by the teachers; the first-order barriers are addressed as the primary obstacles, such as; lack of hardware, teaching content and material, and pedagogical models. Then, the second order barriers refer to low teachers' interest and lack of teachers' help.

Eleman(2016) assessed the utilization of ICT at the five Public Sudanese Secondary Schools was poor due to paucity of ICT skill, financial support, and time. Hsu (2016) also found four barriers of ICT integration encountered by the Kindergarten through the Sixth Grade Teachers in the Midwestern United States; the students' lack of computer skills and the teachers' lack of training in technology, time to implement technology-integrated lessons, and technical support.

In other words, some barriers in integrating ICT are encountered by the teachers due to internal and external factors. So, the teachers are required to identify the problems and figure them out.

3. RESEARCH METHOD

Due to there are varieties of interesting issues that can be raised in integration of the ICT. This study focuses on analyzing some barriers encountered by the teachers in integrating the ICT during the teaching and learning context, especially in English language teaching at Senior High

Schools in Pekanbaru. It is important to be analyzed to help the teachers to figure out their problems and successfully run the teaching and learning activities.

This study worked on descriptive research design in which qualitative and quantitative approaches were employed to analyze the underlying barriers of ICT integration in English language teaching. Questionnaires were used to gather information about teachers' hindrances to ICT integration in teaching. According to Jhonson and Cristensen (2014) in Eleman (2016), Questionnaire is an instrument to collect personal data of research participants by completing any information needed. Self-Designed Questionnaire was employed in this research which based on several previous studies findings; Bingimlas (2009), Alwani and Soomro (2010), Liu and Pange (2015), Eleman(2016), (See table 1 for the indicators). The questionnaires were distributed in two parts; demographic factors and barriers to implement ICT in English language teaching context at several Senior High Schools in Pekanbaru. Then, open-ended interview was also conducted to explore whether any significant information appears as the teachers' barriers in integrating ICT during the teaching and learning process.

Table 1: Indicators of Constructing Questionnaire

Basic Personal Information	
Gender	
Teaching Years	
Educational level	
Pre-Service Training	
ICT Use in Daily Life	
Barriers in ICT Integration	
Confidence (CF)	
Competence (CP)	
Facilities (FC)	
Time (TM)	
Technical Support (TS)	

The population of this study was English teachers from private and State Senior High Schools in Pekanbaru. From Seventy Senior High Schools in Pekanbaru, one teacher of each school was selected as the representative. Information about the populations is represented in the following table.

Table 2: Population

Schools		Number of English Teachers
Private	State	
51	19	70

Purposive sampling was adopted in selecting the participants. According to Gay (2000), it is one of the methods to choose sample that refers to the researcher's point of view to be representative of a given population. In this study, the population was English teachers from private and public Senior High Schools in Pekanbaru. Then, twenty percents (25%) of the population was selected as the samples in this research to represent the teachers' barriers in integrating the ICT in English language teaching contexts. The description of the samples can be seen in the following information:

Table 3: Sample

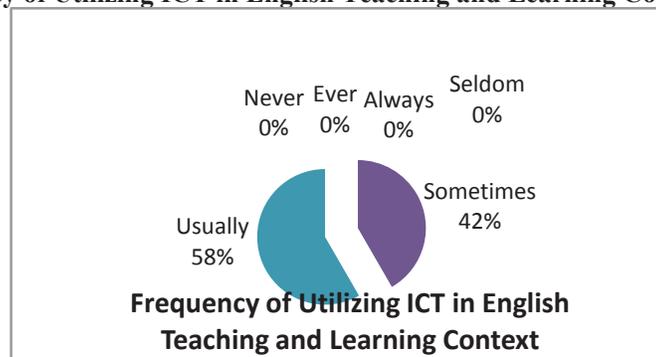
Population	Sample	Sample Selection Technique
70	14	25 % of 70

4. DATA ANALYSIS AND DISCUSSION

Based on questionnaire sheets distributed to the fourteen English teachers of Senior High Schools in Pekanbaru, all of the teachers had been integrating ICT in their classrooms. In other words, ICT integration in the classroom is not something new anymore, it has long journey. However, the integration of the ICT is not smoothly run by the teachers. Some influential factors of the ICT integration during the teaching and learning process were found, such as teachers' age, teaching experience, and educational background.

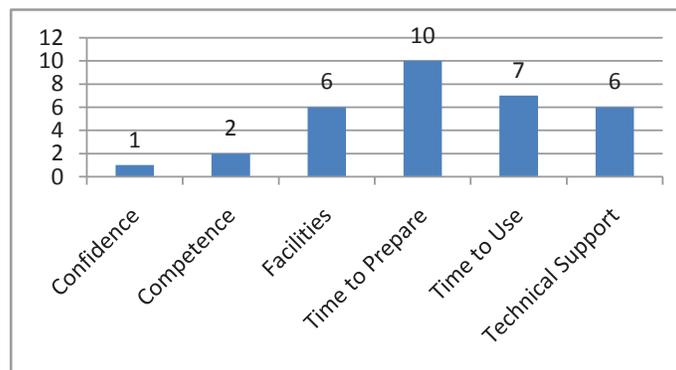
The teachers' performances on ICT Integration were affected by their age which links to teaching experiences and educational background. In this case, most of the teachers were at 31-55 years old who hold bachelor degree of English language teaching with 6 up to 25 years teaching experience. They had been familiar with educational technology devices uses to support their teaching and learning activities in the classroom. However, the ICT is not always integrated during the teaching and learning process, the following chart represents about the frequency of the ICT integration in English language teaching context

Chart 1: Frequency of Utilizing ICT in English Teaching and Learning Context



The chart above depicts that 58 % teachers had regularly integrated ICT during the teaching and learning activities even though in some conditions they did not use it. Then, it was followed by 42% teachers who sometimes teach with the ICT. Based on interview conducted with the teachers, they said that the use of ICT during the teaching and learning process should refer to the content of the lesson in the syllabus. So, the ICT was not always used by the teachers as the teacher just needed the students to practice or do exercises about the lessons. Then, some challenges are encountered by the teachers in term of ICT integration that affected the frequency use of ICT, such as lack of competence, facilities, time, and technical support. The following information will describe the teachers' barriers in integrating the ICT:

Chart 2: Barriers of Utilizing ICT in English Teaching and Learning Context



The chart above presents that more teachers who identified their lack of time to prepare and use technology devices to support the teaching and learning activities in the classroom as a barrier. The teacher seemed having limited time to prepare all the things needed when teaching by using technology. Then, it was followed by lack of facilities, technical support, competence and confidence. The detail information about the barriers is discussed in the following:

a. Lack of Time

As the development of technology nowadays, the teachers realize about the importance of integrating the ICT devices during the teaching and learning process, especially in English language teaching context. However, lack of time inevitably appears as one of the teachers' barrier due to the needs of presenting meaningful learning materials through the ICT.

As the teachers said, to design learning materials by using technology were not simple things to be completed even though there are numerous learning materials that can be easily accessed in internet. They are required to present effective learning materials that cover all the students' needs and represent curriculum standard. Then, the teachers are also challenged to develop their creativity to present the best learning materials in which interesting and meaningful for the students. In this case, the teachers need to prepare all the things well before integrating the ICT during the teaching and learning process, so they have to allocate more time to successfully integrate the ICT.

In addition, some teachers claimed that they spent most of their time for teaching, so they did not have enough time to involve with technology. The teachers also said that they need more time to prepare technology based learning materials and learn to use the technology devices. Afterwards, the teachers also added that there is not adequate time to integrate the ICT into their daily teaching activities as the ICT use requires more time, such as to prepare lessons and resources, explore and practice of using the technology devices, handle technical problems, and receive adequate training.

In short, the teachers got problem to manage their time in term of preparing and integrating the ICT devices during the teaching and learning process as they got busy with some other daily routines.

b. Lack of Professional Development

Teachers' familiarity with the use of technology is another factor influences the effectiveness of integrating ICT during the teaching and learning activities, specifically in English language teaching context. Based on the data from the survey, most of the teachers stated that there was not regular training in term of enhancing the teachers' competence in ICT. When they got training, they just received simply training of using ICT equipments. The specific training of ICT integration in term of English language teaching context was rarely organized. So, they encountered difficulties in selecting and applying appropriate hardware or software. Based on this condition, a few number of teachers may just run conventional ways of teaching rather than integrate the ICT during the teaching and learning context. Then, most of the teachers said that one of the most common technology products used by the teachers was video as there are numerous educational video that can be deployed in the classroom. In addition, most of the teachers just worked on simple technology devices by deploying all designed-content in English laboratory. Furthermore, most of the teachers said that their interest in the ICT has influential factor towards their skill in integrating the ICT as they keep learning and exploring all information about ICT.

c. Lack of Facilities

Based on the result of interview, most of the teachers said that their schools had been facilitated with English laboratory which is used to enhance the students' English competence and provide more meaningful experiences in using the language in real communication context. However, some problems in relation to the facilities of integrating ICT were still faced by the teachers, such as lack of physical resources, poor quality of resources, and limited access of ICT for teachers.

Insufficient number of computers and other devices to support the English language teaching process were still found by the teachers in the classroom. One of the teachers said that lack of number of computers and other devices (loud speakers or earphones) were influenced by some technical

problems, such as some computers were broken, hence the technicians need more time to fix them all. Afterwards, it disturbed the teaching and learning process. Another example when some earphones were broken, to change them with the new one cannot be done right away, but it needs long process to replace the old one. In that case, the teachers could not effectively run the ICT integration in the classrooms.

Then, in a few schools, the teachers admitted about the poor of quality resources whether it related to hardware or software uses. As the lab was built several years ago, some old equipments and learning materials programs were still used by the teachers. In some conditions, the hard and soft devices could not properly run. It could be a problem at first, but soon after that, the teachers got familiar with the problems and knew how to figure out them all. In addition, electricity access could also stop the deployment of the ICT as it has link with the power of electricity. In several schools did not provide their electricity power to keep running the teaching and learning process. In other words, keep updating and maintaining all technology devices need to be regularly supervised out and guided by the teachers, and together with the students and school principals.

Furthermore, the teachers' limited access of ICT also influenced their performances in integrating the ICT, especially about their access to prepare all the things before the teaching and learning activities were conducted. Unfortunately, the teachers had limited access to use English laboratory and all ICT devices in it as there were some other students from different classes or grades to study in the laboratory. Hence, the teachers sometimes got problem to anticipate some unpredictable matters during the integration of ICT in teaching and learning process, so it influenced the effectiveness of the teaching and learning activities. On the other hand, when the teachers could get easily access to the English laboratory and other devices in it, they would have better presentation of the learning materials and anticipate some other barriers that might be encountered.

d. Lack of Technical Support

Many teachers in the survey agreed that technical support is needed in the schools to enhance the teachers' performances in integrating ICT during the teaching and learning process. As commonly known that the technology devices can easily break down when they are used by a person who does not understand well about the devices. In this case, not all of teachers are familiar with software and hardware deployed in English classrooms or laboratories. However, they have to apply it during the teaching and learning process as it is required by the curriculum. To integrate the ICT is not an easy job for the teachers, the teachers are not only required to be capable in deploying the devices, but they also need to be skillful in solving some technical problems appear. When the teachers cannot figure out their own problems in the classes, someone to help when something get wrong is really needed. Unfortunately, not all schools provide technical support to help the teachers in integrating the ICT. Most of the schools just depend on the other teachers who know about computers well, such as computer teachers. Then, a few teachers said that they usually got afraid to integrate the ICT in the classrooms due to lack of technical support, as they said that it's hard to get a hand when the things go wrong.

e. Lack of Competence and Confidence

Only a few number of teachers stated that their limited competence in deploying the technology devices appeared as their problems. It has link to the teachers' confidence in presenting the learning materials through the ICT. However, those problems were only faced by certain teachers who had limited competence to utilize the technology devices. Besides that, the teachers' age significantly influence to this matter. The teachers said that they could not teach well through integrating the ICT because the teachers considered that ICT integration could not be easily performed in the class. When, the students had to work on the ICT, it was hard for the teachers to invite the students to be focus on the lessons. Then, the teachers could not effectively share information and guide them successfully during the teaching and learning process.

5. CONCLUSION

The integration of ICT (Information and Communication Technology) in English language teaching context has been implemented by the fourteen English teachers that were randomly selected from several public and private Senior High Schools in Pekanbaru. The result of survey and open-ended interview revealed several common problems were still encountered by the teachers that include lack of time, professional development, facilities, and technical supports. The teacher seemed having limited time to prepare all the things needed when teaching by using technology since they got busy with some other daily routines at school. Then, regular training of ICT integration were needed by the teachers as they rarely invited in the program. The training was required by the teachers to keep updating their information about the current approach of ICT integration in English language teaching context. Besides that, the other problem link to the facilities used in integrating the ICT during the teaching and learning process, such as lack of physical resources, poor quality of resources, and limited access of ICT for teachers. The last, but not least, lack of technical support, and lack of competence and confidence were also encountered by the teachers as their limited skill to figure out some technical problems during the integration of ICT in teaching and learning process. Hence, these linking barriers suggest the teachers should be fully motivated and supported to engage with ICT in their teaching activities.

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