

Chapter Two

Literature Review

In this chapter, the researcher discussed literature reviews related to the research being studied. The first section is Information and Communication Technology (ICT) which contains types of ICT and the use of ICT in English learning. The second section is benefits of using ICT in English learning. The third section is ICT in Indonesian secondary schools. The fourth section is factors influencing the use of ICT. The fifth section is students' attitude on the use of ICT in language learning. The sixth section is review of related studies. The last section is conceptual framework along with hypothesis at the end of this chapter.

Information and Communication Technology (ICT)

Information and communication technology (ICT) is all kinds of technologies which support activity, include information gathering, storing, processing and presenting and involve collaboration with communication. ICT then falls under information technology (IT) and communication technology. To differ, information technology includes all technologies used to collect, process, protect and store information (Celebic & Rendulic, 2011; Singh, Kumar, & Singh, 2015). It also includes hardware, computer programs (software), peripheral and computer networks (Mason, 2015). Moreover, ICT includes information technology used to convey, manipulate and store (Perron, Taylor, Glass, & Leys, 2010). It means involving transfer and use of various information, for example, emails, chat groups, group discussions which are afforded by Internet and World Wide Web (White, 2008), and other various kinds of ICTs. ICTs applied to

education include computers, the Internet, broadcasting technologies (radio and television), and telephony (Khan, Hasan, & Clement, 2012).

In the beginning of 1980s, computers in term of education began to go public. The governments from many countries also started to develop the use of computers with brands of microcomputers that they prefer to make their own brands (Pelgrum & Law, 2003). This first step was one of ways to build the effective education by using technology. With high belief, the government hoped that the computers integration would help the process of teaching and learning. Unfortunately, this led to disappointment from many policy makers because of technology disintegration. Many schools only used computers as thing that should be implemented in the contemporary curriculum, not as tools for teaching and learning. Nevertheless, technology has been a part of people's life in this current century. Since the term 'technology' was replaced with the term 'ICT' and ICT becomes popular, ICT can help to provide today's education systems to provide effective and advantageous teaching and learning process (Findikoglu, Alci, & Karatas, 2015; Wajszczyk, 2014). Therefore, the development of ICT brings more uses for many aspects of life including education.

Types of ICT. ICT can include device or system which consents to storage, retrieval, manipulation, transmission and receiving digital information (Millea, Green, & Putland, 2005). ICT also includes hardware, software or computer programs and computer networks in which the notion concerns shift and utilisation of all sorts of information. The elucidations, according to Celebic and Rendulic (2011), are as follows.

Hardware. The model of hardware embraces computer components which are physical parts of the computer. There are kinds of popular hardware that can be used in the teaching and learning process.

A personal computer (PC). The use of PC is intended for individual, but then it can be used by a number of people at once. PC has much better performance ratio and easier to upgrade. However, PC cannot be moved from one position to another due to the large size, so it is useful to be used for who does not intend to move computer frequently. Besides, it also consumes more electricity.

Laptop or tablet PC. These are used by individuals just for visual reasons. The laptop looks like a personal computer where the data are computed via keyboard and mouse. In contrast, the data computed in tablet PCs are inputted via a touch screen. Fortunately, one can optimise the use of them for little requirements.

Portable digital devices. These devices include mobile phone and smartphone. The mobile phone is a device used for remote communication, and it is a portable electronic. It has multi-functions such as short text messaging (SMS), electronic mail, Internet access, calculator, clock, alarm, recording and photograph displaying, recording and playback of video clips, sending or receiving multimedia messages (MMS), audio recording and playback, and other functions. In modern society, this device is tremendously of use where people can involve and participate. Different with a mobile phone, a smartphone is created due to the development of the basic application which uses operating systems.

Software. Software is defined as insubstantial part of the computer. These are types of software: 1) operating system, 2) application software (utility programs), 3) text processing software, spreadsheet calculations software, and software for presentation. Simply, text processing software is to create the text document other functions such as inserting images, charts, and tables. The examples are OpenOffice.org Writer and Microsoft Word. Afterwards, spreadsheet calculations software as its name is presenting charts from calculations and results of presentation. The software is like OpenOffice.org Calc Writer and Microsoft Excel. Finally, software for presentations is utilised for presentations. There are slides that one can insert graphs and texts, and be displayed using a projector. Examples of such software are OpenOffice.org Impress and Microsoft PowerPoint.

Network. Network is related to communication technology that has the purpose of 'communication'. Here are the networks settled on a computer network and the Internet. The computer network can be connected by wire or wireless. The connection is able to access data, access to other devices and permit users to communicate and have socialisation. Besides, the Internet is the 'network of all networks' that all people in the world have used it. In the field of economy, socialising, information, healthcare and education do people use for. Consequently, it is not surprised that the Internet gives an enormous impact on all elements.

ICT in everyday life. ICT consists of “information technology, telephony, electronic media, and all types of process and transfer of audio and video signals, and all control and managing functions based on network technologies.” (Celebic & Rendulic, 2011). These ICTs are in everyday life. The examples are Internet services, e-learning, teleworking, e-mail, Instant Messaging (IM), Voice over Internet Protocol (VoIP), Really Simple Syndication (RSS), blog, podcast, and virtual communities.

Internet services. There are some services that Internet provides for users. It has been developed for the ease of people’s society. It comprises e-commerce which is to browse and purchase the online products, e-banking which lets the users manage their accounts and e-government in which high information technology makes good access to information in the governments.

E-learning. In terms of learning, e-learning is all varieties in transferring knowledge using electronic technologies. The process does not enable teacher-student interact directly in the classroom. The students will not use books from paper, but they will use multimedia such as e-books. In addition, e-learning benefit students in that it is accessible everywhere and whenever as wanted to, the lecturers also do not need to repeat lessons, and it decreases education cost.

Teleworking. Teleworking means using ICT tools from home or office. There should be a good quality of IT infrastructure, computer literacy and types of work provided in the organisation, so that employees can operate it for work. By using ICT, people at work can work in a team in the place of work, and

communicate and exchange information, have good organization and have professional attitude towards work.

E-mail. E-mail is used for broadcast of text messages through the Internet. Users can either send files such as images, documents, sounds, and others or receive them from other users. @ (at) sign and domain name are contains of email addresses. In learning, the teacher can use e-mail to send learning materials to students, give feedback and interact with students so it creates student-centered (Jayanthi & Kumar, 2016; Sharndama, 2013).

Instant Messaging. IM service enables users to send a message instantly. It is a type of online chat over Internet. It is intended to textual communication, video conferencing and transferring files. Instant messaging can be used to transfer file, click hyperlinks, add Voice over IP, and add video chat. Kind of this service is Skype, Windows Live Messenger, and Google Talk.

Voice over Internet Protocol (VoIP). It is digitalisation and transferring sound or video in excess of Internet. It is like in telephone call which allows audio or video communication between users. VoIP refers to communication services such as voice, fax, SMS, voice-messaging over the public Internet.

Really Simple Syndication (RSS). RSS is a group of web formats in the web pages in which every particular time is updated. It enables information like an article in the web pages publish. The users can gain new information and receive it from various portals without visiting all the web pages. RSS also enables to read new titles and access new summaries.

Blog (web log). It is a variety of Internet media. It is used for many purposes such as for personal or general. The users can publish anything on the entry of the blog. Besides, they can upload any files such as text, pictures, sound, or video. For learning, the teacher can post learning materials for students to download and post assignments or exercises such as worksheets, crossword puzzles, colour pictures, texts for reading and gap filling, vocabulary and grammar exercises (Sharndama, 2013).

Podcast. Podcast is an episodic series of digital audio files. People can download and listen to the audio in the Internet. Internet distributes podcast using RSS technology which is an enclosing content of audio or video. The distributor upload the podcasts on a server or web feed which can be accessed through Internet. To access it, the users need portable media players.

Virtual communities. Virtual communities include a group of people who communicate via social networks, forum, IM service, and blogs. They participate in a group which has the interest, so it is called community. 'Virtual' means that it does not involve physical contact to communicate. It is used ICT technologies. Social networks are free online services which provide various forms of presentation and communication, for example, Facebook, Twitter, and Google+. Besides, forum is a service which allows users to exchange opinions, for example Reddit and TED Conversations.

The Use of ICT in Language Learning

Teachers need to have three components of knowledge that should exist in teaching and learning settings. Those components are content, pedagogy, and technology (Mishra & Koehler, 2006). First, content knowledge leads the teachers to understand the subjects that they teach, for instance, an English teacher must know and understand the knowledge of central facts, concepts, theories and procedures within English subject. Second, pedagogical knowledge is a knowledge about the processes and practices of teaching and learning, educational purposes, values and aims. In other words, the teachers must know and understand techniques or methods to be used in the classrooms, the nature of the students and strategies to evaluate student's understanding. Third, technology knowledge is a knowledge about standard technologies such as books and blackboard and more advanced technologies such as the Internet and video. As technology grows rapidly, the teaching might also change. Consequently, the teachers should have content, pedagogy knowledge, technology knowledge or the combination of these knowledge.

English teachers should take account of technology tools to be used for teaching. In other words, teachers play an essential role in transferring their knowledge to the teaching process, particularly technology knowledge which is implied in the ways of teaching. It means that the way the teachers make use of ICT in teaching will give impact on students' learning as said by Carnoy (2004, p. 5) that "Most analyses of ICT in the educational sector focus on the impact it has

had on pupil teaching or learning.” Hence, the use of ICT becomes one of the components of knowledge that a teacher requires to have.

There are several activities which use ICT in English learning. Yunus, Lubis, and Lin (2009) revealed in their study that averagely students spent only one up to two hours weekly on learning activities. Lei (2009) also found that learning-related study activities gave a proportion of 10.3%. The other activities for learning are writing blogs in English, reading English newspaper online, searching English essay and searching for examination questions. Lei (2009) added other activities using ICT or electronic devices based on the purposes, for example, entertainment (playing games, watching videos, etc.), social or communication activities (chat, e-mail, IM, etc.), practical purposes (find information), self-expression (blogging, commenting, etc.), and constructive activities (creating Web pages, uploading video, audio, music, files, etc.). From their studies, the most students’ interest on the use of ICT in their learning is surfing on the Internet to get information.

Moreover, the teacher can make use of social networking such as Facebook and Twitter (Tri & Nguyen, 2014) and communication platforms such as Edmodo (Getting Smart Staff, 2015) and Schoology (Sherf & Graf, 2014) for students in learning. Teacher can create kinds of activities such as online discussion which permit the teacher and students who are far in distance to share information online and communicate each other. This activity is likely to involve more equal participation (Parvin & Salam, 2015). As stated by Lin, Huang and Chen (2014), what the students can do to support their learning are listening,

speaking, reading, writing and responding by using ICT tools. These activities thus can promote learning process better using various kinds of ICTs.

Benefits of Using ICT in language Learning

There are several benefits for students' learning. According to Abukhattala (2016), the increase of student's motivation on technology use is a key benefit in language classroom. However, this is not the only benefits of using ICTs in language learning. Some researchers found the several benefits in the following.

Motivation. When integrated in classroom, ICT tools make students feel more motivated. Murley, Jukes, and Stobaugh (2013) accepted as true that using technology in learning could increase on students' motivation. It is then corroborated by Carnoy (2004), United States Department of Education (2010) and Yunus, Lubis, and Lin (2009) that the use of ICT motivates the students to keep learning and more engage to the learning, for instance, the use of multimedia in the classroom motivates the students because it attracts their attention and increase their interest in learning (Tri & Nguyen, 2014) and the use of communication tools promote student's motivation and interest if implemented properly (Young, 2003).

Achievement. Learning process using ICT tools can improve student's learning skills, competence and outcomes. Houcine (2011) revealed that student's listening skills are developed in case the teacher gives regular exposures such as audio and video recordings, podcasts and pronunciation software. The students are also aware of language skills such as grammar skills when reading selected and updated articles from the Internet, so that they can have a good achievement.

Their vocabulary enrichment is also increased (Yunus, Lubis, & Lin, 2009). Hence, ICT influences students' achievement when it is implemented aptly (Sabzian & Gilakjani, 2013; Shirvani, 2014; Findikoglu, Alci, & Karatas, 2015).

Autonomy. The use of Internet allows the students to choose what is going to learn. They have a freedom to learn by themselves with their own style (Kopinska, 2013). In other words, it creates students' independent learning or promotes student-centeredness. Shy or quiet students may ask questions and communicate with others in the social networking (Jayanthi & Kumar, 2016).

Collaborative learning enhancement. ICT uses also create collaboration and communication in learning activities (Abukhattala, 2016). The students are not only collecting information and resources but also getting connected to the outside of the classroom as a means of communication and it will lead them to shed light the high-quality work.

Self-assessment. Integrating ICTs in the classroom allows the students to assess their own work and the teacher to assess his students' understanding accurately and objectively. The students get an opportunity to monitor their learning progress, for instance, students can test their listening capacity through computer-assisted packages, games, or online exercises on the Internet such as listening to a dialogue and answering the questions (Jayanthi & Kumar, 2016).

Availability of materials. ICTs offer available learning materials provided by the teacher or in the Internet. The students are possible to experience learning English anywhere, so the accessibility to get the learning materials are easy (Isisag, 2012).

Authenticity. The use of ICTs creates authentic learning environment and enables the students to access authentic materials found in the Internet. Because the authentic learning materials are attractive and accessible, the students find learning English more enjoyable (Tri & Nguyen, 2014).

ICT in Indonesian Secondary Schools

Indonesia is aware of the existence of ICT for aspects of life. It is shown in 2001 that the Government of Indonesia formulated ICT National Plan under *Intruksi Presiden Republik Indonesia Nomor 6 Tahun 2001 tentang Pengembangan dan Pendayagunaan Telematika di Indonesia* (President Instruction Number 6 in 2001 about Development and Implementation of Information and Communication Technology in Indonesia). The instruction concerns on a five-year National Information and Communication Technology Action Plan for Indonesia in which education is given priorities, namely development of ICT networks for education and research, development and implementation of ICT curricula, use of ICT as an essential part of the curricula and learning tools in schools, universities and training centres, facilitation of the use of internet for more efficient teaching-learning process (Firman & Tola, 2008). It leads the government to always do improvements for ICT uses in education. However, the schools seem to do improvements due to the ICT utilization. Based on the data from UNESCO (2014) in 2012, secondary schools in Indonesia have 37% computer laboratories, but there was no ICT support services. It means that the schools are rare in using computer for teaching and learning. In addition to this, the proportion of secondary schools having Internet

and Internet-assisted instruction is not balance. Internet-assisted instruction, which is “an interactive learning method using content from the World Wide Web for pedagogical purposes” (p. 23), had no value, while the Internet connectivity in secondary schools was 52%. These data show that ICT in Indonesian secondary schools still need to be improved with respect of teaching and learning process using ICT.

Based on a white paper of communication and information technology of Indonesia year 2016 (Kominfo, 2016), the percentage of computer use in private senior high schools in Indonesia is 91.32%, 3.38% lower than public schools. However, this percentage ranks high in order of computer use in high schools. Besides, private senior high schools in Indonesia also facilitate the students with Internet connectivity with the percentage of 82.61%. It is followed by the use of Internet by the students. 74.71% of senior high school students have the highest use of Internet access among junior high school students (61.66%) and elementary school students (25.17%). These statistics about the use of ICT in private schools show that the private schools also aware of ICT development in their schools.

Factors Influencing the Use of ICT

There are many factors influencing the use and integration of ICT. The factor can be from personal characteristics, namely attitudes, ICT competence, computer self-efficacy, gender and teacher’s experience, institutional characteristics, namely professional development, accessibility and technical support, and technological characteristics (Andoh, 2012; Barakabitte, Kitindi,

Sanga, Kibirige, & Makwinya, 2015; Afshari, Bakar & Luan, 2009; Balash, Yong & Abu; 2011).

Attitudes. The success of integrating ICT in the school depends on teacher's attitudes since it is a part of teacher's needs. Teacher attitudes and beliefs are ones of the factors among other factors that influence the most in the successful integration of ICT (Lin, Huang, & Chen, 2014). Not only teacher's attitudes, students' also become the factor that influences the integration of ICT in their learning as stated by Baz (2016).

ICT competence. ICT competence refers to teacher's ability to use various applications for various purposes. The teacher should be familiar with to which tools to select, how to use these and understand how the tools can assist their student's learning (Kaindio & Wagithunu, 2014). ICT competence is also about confidence to use technology. It is not related to students, but it will affect the student's attitude and belief to use technology. If teacher's competence is good in using ICT, then the students also perceived good in using ICT in their learning.

Computer self-efficacy. Teacher and student's belief on their own abilities to perform the use of ICT is defined as computer or ICT self-efficacy. It deals with the confidence in ICT competence. Teacher computer self-efficacy is usually greater than student's (Andoh, 2012) since the teacher is the one who will use ICT in front of a class so they feel somewhat anxious.

Gender. Generally men and women have different ability in communication and interaction styles. Men tend to focus on task-oriented

activities, whereas women focus more on social-oriented activities so they are more expressive (Ilie, Slyke, Green, & Lou, 2005). When it comes to the Internet and communication, women like to do messaging, conversation and ask more questions as these deal with social activities. In contrast, men tend to talk less and be aggressive and argumentative when they are in chat rooms. Then, there are many studies about gender differences and the use of ICT. The studies found that male students have more positive attitudes towards pedagogical use of ICT (Andoh & Yidana, 2014) and ICT usage and ICT knowledge and skills (Kubiatko, 2010) than the female students. On the contrary, Opoku and Kuranchie (2014) found that female perceived more positive attitudes towards ICT. However, Teo's study (Teo, 2008) found no gender differences. It can be said that gender influences the use of ICT in learning, but is not a predictor of the successful integration of ICT (Rahimi & Yadollahi, 2011). Gender differences, thus, have led to achieve different purposes in using ICT which are task and social and led to different attitudes.

Teacher's experience. Another factor is found in teacher's experience in using ICT in teaching and learning. Although teacher's experience is not a clear and only factor influencing ICT, the more experienced teachers will perform better in teaching using ICT in their teaching and learning. Thus, the teacher need to be professional. Institution plays a role as instructional characteristics influence the successful use of ICT. Balash, Yong and Abu (2011) even believed that teacher's professional development is a key factor to successful integration of ICT.

Professional development. Professional development is related to training program for professional development. It includes technical issues and effective technical support in using ICT. It also includes ICT pedagogical training in which it will help teachers implement technologies in teaching and learning process (Andoh, 2012). It is believed that teacher's professional development is a factor to succeed the integration of ICT into teaching.

Accessibility and technical support. ICT supported infrastructure and lack of resources become a factor that influences the integration of ICT since the schools should have a condition where the availability and accessibility of ICT resources are provided. Access to computer, updated software and hardware are key elements to successful integration of technology (Andoh, 2012), so that the teachers will have encouragement to use them. It is also believed that the technical support to technology influences the teacher to apply ICT in their classroom. If there is troubleshooting problems, it might discourage the teacher to use ICT then.

Technological characteristics. Technological characteristics are related to teachers' innovations. Andoh (2012, p. 145) stated that "Technological characteristics influence the diffusion processes of an innovation and are significant factors impacting an innovation adoption." The examples of innovation attributes are relative advantage, complexity, trialability and observability. These influence the use of technology when integrated in the teaching.

Students' Attitude on the Use of ICT in Language Learning

There are many definitions about attitude. Sabzian and Gilakjani (2013) asserted that attitude forms beliefs, feelings and behavioural tendencies towards

certain objects, groups, events or symbols. It denotes that individuals' attitudes resolve their behaviour towards things and people. Borkowski (2011, p. 44) defined attitude as "a mindset or a tendency to act in a particular way due to both an individual's experience and temperament". It is a complex combination of things namely personality, beliefs, values, behaviours and motivation. Jain (2014) added its concepts such as preferences, feelings, emotions, expectations, judgments, appraisals, principles, opinions, and intentions. So, when we talk about someone's attitude, we refer to person's emotional and behaviours. Therefore, an attitude can be defined as a strong feeling that sets up person to respond constantly in a positive and negative manner when dealt with a particular thing.

Attitudes are formed through learning, modelling and experience (Borkowski, 2011). Since attitude is a dynamic influence on person's behaviour, someone can even form, change and measure the attitudes. In respect of ICT use in learning, students can form their attitude through learning and directly experiencing with people and situations where in this case it is an experience in using ICT in their learning process. In other words, attitudes can be formed continuously through the process of someone's socialisation.

There are three components of attitudes, namely affective component, cognitive component and behavioural component (Borkowski, 2011; Jain, 2014; Liu, 2009; Siragusa & Dixon, 2008). Firstly, affective component refers to feeling or simply liking or disliking. It relates to neural process and emotional response to objects or people, for example, "I dislike English subject" or "Learning through ICT makes me motivated". Secondly, cognitive component refers to thoughts and

beliefs or simply belief or disbelief. It relates to mental process and evaluation of the objects or people, for example, “Teacher should explain clearer” or “Student does not like writing an essay”. Thirdly, behavioural component refers to verbal or nonverbal behaviour of individual. It relates to actions to do something if a person is involved in favour or unfavour of something. So, the attitudes leads us to behave in a particular way, for example, “I write clearly in student’s notes because it upsets me when I can’t read someone else’s handwriting”. In short, affective and cognitive component deal with person’s internal in which its results come from behavioural component.

Many researchers were interested in conducting a research related to both teacher and student’s attitudes towards the use of ICT or technology. The studies showed mostly students’ positive attitudes towards the use of various ICTs in learning (Andoh & Yidana, 2014; Baz, 2016; Can, 2010; Findikoglu, Alci, & Karatas, 2015; Ilhan, Celik, & Gemcioglu, 2016; Kopinska, 2013; Kubiato, 2010; Opoku & Kuranchie, 2014; Tri & Nguyen, 2014). A study by Kopinska (2013), as an example, was exploring the role of learners’ attitudes towards the use of ICT, such as the Internet in EFL classroom. Data obtained was from a questionnaire of a total of 150 items distributed to 27 students of a public post compulsory secondary school in Vitoria-Gasteiz, Spain. Afterwards, this study discovered students’ overall positive attitudes towards ICT in learning English. The students also perceived that English is regarded important, above all, for surfing on the internet, as well as for information search.

Review of Related Studies

A number of studies were conducted to investigate the attitudes on the use of ICT. The study entitled *Language Learning via ICT: Uses, Challenges and Issues* by Yunus, Lubis, and Lin (2009) explored the use of ICT for learning English, the students' challenges using ICT for learning English and their attitudes in learning English among the urban schools of Malaysia. This study was taken place in Kuala Terengganu, Malaysia and collected the data by distributing the questionnaire. Because of the habits of the students in using technology, the results revealed that only do they use ICT for learning English, with a percentage of 21.3% of the samples accounted the negligible use and percentage of 1.5% students who used 6-10 hours and 11-15 hours. ICT is also believed that it is able to improve their language skills: speaking, vocabulary, writing, and grammar, in which vocabulary was perceived as the greatest score. Similarly, the participants perceive that the ICT assists in increasing English and ICT skills, giving the easiness to find information, widening the knowledge, and raising motivation. However, the problems emerge as the participants did not get enough training on ICT. As the result of 'using ICT in learning English not difficult', the students' attitudes towards ICT are positive. This study gives detailed information to the researcher's study on information about the use of ICTs in English learning. Besides, the researcher used the questionnaire in this study.

The study from Andoh and Yidana (2014) were secondary school students' pedagogical use of ICT, their attitudes toward integration of ICT and the differences in their attitudes based on gender, school type and location. The

instrument was questionnaire distributed to random samples of 4500 students from 24 public and private secondary schools. After being analysed using descriptive statistics, MANOVAs and multiple regression, this study found that the students' use of ICT in their learning was low, yet positive attitudes towards ICT are held by them. The findings also showed that there were differences in students' attitudes based on school types and gender which males have more positive attitudes. However, no difference was attitude in terms of expectancy of success all locations. Besides the result of the attitudes showing positive attitudes, the result of which males have more positive attitudes in this study will add the reference for recent study.

Opoku and Kuranchie (2014) also conducted an explorative survey study about students' attitude towards ICTs. The senior high school students were randomly stratified and selected to be samples. 340 students made up of 170 boys and girls fulfilled the questionnaire which were analysed using independent t-test. The result showed the female students demonstrating more positive attitudes toward the learning of ICT than the male students. On the contrary of Andoh and Yidana (2014) study, the result of that female students perceived more positive attitudes become another reference about gender differences.

In Indonesia, there are few studies examining student's attitudes towards the use of ICT. There are recent studies taken place in Indonesia from Palekahelu, Hunt, and Thrupp (2016) and Suratno and Aйдawati (2016) that the researcher reviews. The first study from Palekahelu, Hunt, and Thrupp aims at identifying the range of ICT accessed and used by students in Kota Salatiga from school

levels of elementary, lower secondary, senior secondary and vocational and both from urban and periurban areas. 1738 students fill the questionnaires. Due to access to and use of ICT, 16.7% of students use email at school and 94.1% of students have used Microsoft Word at school. Attitude to School and ICT use are shown from 97.3% of students expressing their opinion that they learn a lot of new things at school. The uses of ICT and the attitudes from this study can be used to be reference.

Suratno and Aйдawati (2016) also conducted a study to know the perceived and use of technology for language learning-related activities inside and outside classroom contexts. Total number of 400 students from 4 public and 4 private senior high schools were selected randomly to fulfill the survey questionnaire. Gender and school status were considered to see their attitudes. The findings indicated that the students generally use their gadgets for positive activities related to learning. However, the students did not use them to improve and learn English skills. Another finding indicated higher male's positive perceived use of ICT in language learning.

In brief, the researcher used these previous studies to become references in conducting the recent study. As seen, the previous studies used different types of ICTs in the study, purposes, samples and settings. In the recent study, the researcher chose gender as dependent variable in the significance testing, while the previous studies chose school type and location.

Conceptual Framework

Information and communication technology (ICT) as mentioned and discussed in the literature review is obviously explained that in teaching and learning educators, teachers, and institutions promote ICT as a good invention to be implemented in schools. Indeed, to succeed it, there are things to be considered to this. The attitude of ICT users is one of the factors influencing the use of ICT in learning. Furthermore, this study endeavours to investigate student's attitude on the use of ICT in learning, particularly students of Yogyakarta Muhammadiyah senior high schools. It focuses on their attitudes on the use of ICT in English learning and whether there is any significant difference between students' gender and their attitudes on the use of ICT in English learning.

Firstly, the study focuses on the attitudes of senior high school students on the use of ICT in English learning. The use of Internet for learning English becomes the main focus in the recent study. The activities related to the use of Internet as suggested in the study from Yunus, Lubis, and Lin (2009) will be investigated in the recent study to see the frequencies of using ICT in English language learning. Besides, the statements showing the students' beliefs on the benefits use of ICTs in English learning and the students' attitudes are also examined to find out whether the students have positive or negative attitudes towards the use of ICTs in learning English. Moreover, questions on what purposes to use electronic devices in general are also obtained.

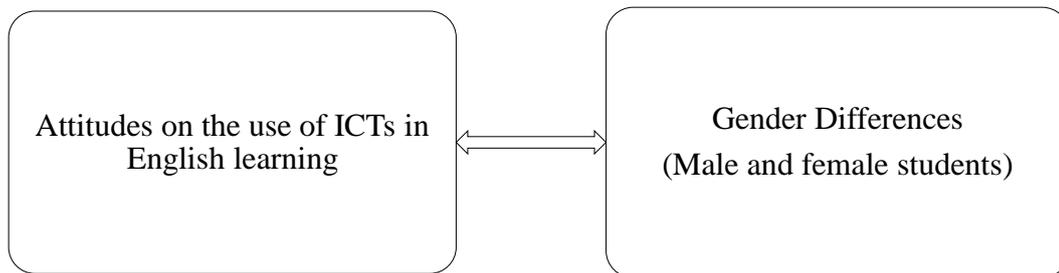


Figure 1. Conceptual Map

Secondly, since gender is one of the factor influencing the integration of ICT coming from personal characteristics, the study also attempts at examining whether there is a statistically significant difference between students' gender and their attitude on the use of ICT in English learning.

Hypothesis

The researcher also wants to know the significant difference between students' gender and their attitudes on the use of ICT in English learning. The researcher then determines the hypothesis in the following.

H1 : there is a statistically significant difference between students' gender and their attitude on the use of ICT in English learning at Yogyakarta Muhammadiyah senior high schools.