

CHAPTER II

REVIEW OF RELATED LITERATURE

2.1 Relevant Theories

In this research, the Researcher needs theories to support and strength of this research. The theories will be used for underlying requirement to solve the problem. Therefore, the researcher will present some theories about Concept of ICT, Purpose of ICT, Characteristics of ICT, Kinds of ICT, Manipulative and Non Manipulative factors influencing integration of ICT in education.

2.1.1 ICT in Education

In globalization era, the development of Information and Communication Technology has an impact in the world, especially in education. Education is an organized and sustained communication designed to encourage learning activities about the characteristics of learners. Learners are able to develop their ability to discover, manage, and evaluate information and communication technology knowledge. Therefore, the role of Information and Communication Technology has increased in the modern world because it can support education in the learning process. Learning system that includes planning, management, learning resources, access to education can not be done without the help of information and communication technology.

According to Kent and Facer (2004, p.25) said that Information and Communication Technology (ICT) in an educational point of view supports

teaching, learning and a range of activities in education in various way. So, modern education is best achieved through the use of Information and Communication Technology (ICT) and related facilities and this can only be possible if both the teacher and students are Information and Communication Technology (ICT) educated. Besides that, Ofsted (2004) stated that English Language is one of the most difficult subjects in education. Teachers must create an interactive Information and Communication Technology in teaching and learning atmosphere to make students interest in the subject.

Based on the explanation above, Information and Communication Technology (ICT) in education is very important to students. Because, Information and communication technology can make the students and teachers develop their skills to use it. and also make the classroom more interesting.

2.1.1.1 The Concept of ICT in Education

The concept of developing information and communication technology in the field of education contains a number of ideas. The idea that must be realized is that every human being can develop as much as possible by using the existing information and communication technology well.

According to Sutopo (2012) stated that information and communication technology in education includes two aspects, namely information technology and communication technology. Information technology includes everything that focuses on the process, use as a tool, manipulation and information management.

While, The communication technology is anything that focuses on the use of tools to transfer data from one device to another.

In Education, Information and Communication Technology (ICT) has changed the system of conventional or traditional learning patterns into a media learning pattern, among them computer-based learning. So, the learner can choose the learning materials based on his or her own interests and also learners can be motivated.

According to Hooper & Reinartz (2002) stated that Information and Communication Technology (ICT) refers to the contemporary computer software that contain combinations of texts, graphics, animation, audio and video. They add that ICT refers to several different classes of software that are used to achieve clearly defined educational goals and also make the learner comfortable in learning. Besides that, Information and Communication Technology (ICT) is the application to address current educational needs and problems. It is the process by which the teacher can to determine which electronic tools and methods will be used for applying them appropriate for the classroom situation and problems (Roblyer, 2003).

Based on the explanation above, it can be concluded that the concept Information and communication Technology (ICT) in education is learning by providing benefits to the learner by using electronic devices such as computers, Internet, e-learning etc. ICT also provides motivation for learners who want to learn.

2.1.1.2 The Purpose of ICT in Education

As we know, the use of information and communication technology in education is necessary. Because it can provide goals that will be achieved effectively and also students can understand what the teacher explain by using media information and communication technology provided by the school for teaching and learning in the classroom.

According to Munir (2009) stated that there are three Purpose of Information and Communication Technology in education:

1. Cognitive aspect

Information and communication technology in this cognitive aspect improves knowledge, interest of learners, ability of scientific thinking in technology, and also prepare for education and job in the future.

2. Affective aspect

Information and communication technology in this affective aspect improves the creative, active, independent attitude and appreciative in information and communication technology. Moreover, it can be appreciate in field of information and communication technology.

3. Psychomotor aspect

Information and communication technology in this Psychomotor aspect improves the skills in teaching and learning process in using technology. In this aspect, the information and communication technology includes hardware and

software aspects to gathering, collecting, storing, manipulation and presenting the information.

Besides that, Dang (2011) indicates that this technology also provides information more quickly when required and it is easily accessible for educational purposes. Therefore, learners who grow up in an Information and Communication Technology (ICT) rich environment are exposed to opportunities to experience and develop skills through its use in and outside the classroom. Furthermore, the purposes of this information and communication technology as a diverse set of technological tools and resources used to communicate and to create disseminate, store, and manage information. These technologies include computers, the Internet, broad-casting technologies (radio and television), and telephony (Tinio, 2002).

In conclusion, the purpose of information and communication technology in education is to give the space to the people who can not join the formal learning and also people can know how the development of education in the learning process.

2.1.1.3 Characteristic of ICT in Education

Information and Communication Technology in Education includes all technical equipment for processing and conveying information from far and near. According to Sutopo (2012) stated that Information and Communication Technology is all activities related to processing, manipulation, management, transfer of information between media. information communication and

technology is a blend of computer technology (software and hardware). such as computers, internet, wifi, etc.

Besides that, According to Munir (2009) stated that the characteristic of Information and Communication Technology (ICT) in education are:

1. The learning program that has been created based on the level and type of education. The time must be in accordance with the program and The program aims to improve students' knowledge, interests and attitudes.
2. On the teaching and learning process, there is no *face-to-face* between teachers and learners. The meeting of teachers and learners just happened when there is a important problem or discuss particular material.
3. There is no face-to-face learning like conventional learning that we know.
4. The students should be independent. The using of Information Communication and Technology focuses on how the students learn independently and can be motivated.
5. All of the learning materials delivered through the learning media like computers, internet, projector.
6. Through the learning media, there is a two ways communication between teachers and learners.
7. The teacher role as the facilitators who helps the learners on learning.
8. The sources of learning are the materials that develop based on the needs and curriculum.

In conclusion, the characteristic of Information and Communication Technology focuses on there is no face to face for teachers and students in

learning process and the usage of Information and Communication Technology such as computer and internet.

2.1.1.4 Kinds of ICT in Education

Lately, the development of technology is very rapid. The use of technology such as computer and internet has advantages and also can be use to improve the effectiveness of education. There are kinds of information and communication technology in education. Those are:

1. E-Learning

E-learning is learning by using electronic devices, especially computer devices. Therefore, e-learning is often referred to as an online course. In the literature, E-learning can be defined as follows:

“E-learning is a generic term for all technologically supported learning using and array of teaching and learning tools as phone bridging, audio and videotapes, teleconferencing, satellite transmissions, and the more recognized web-based training or computer aided instructions also commonly referred to as online courses” (Soekartawi, Haryono dan Liberero, 2002 in Prawiradilaga dan Eveline, 2004).

Based on the expert' above, the researcher conclude that e-learning is an online learning that use the telephone, videotape, audio, satellite or computer transmissions.

According to Rosenberg (2001) stated that e-learning is a learning that use of technology of internet to deliver a learning that can increase the knowledge in wide reach. Besides that, Allen (2006) said e-learning is a learning that use

internet to involve all levels of education for interaction and facilitation. It means that people can access the various information and knowledge required from the existing website.

2. Blended Learning

Blended learning is a learning method that combines the use of face-to-face methods with web-based learning methodology or e-learning. Blended learning provides a more effective environment for teachers and students in implementing learning.

According to Sutopo (2012) said that Blended Learning is a learning model that combine some of the model learning that has been existed. a learning models such as face to face, offline learning, and online learning. The model of online learning can be like the learning that use Web, blog, e-learning, etc. While, *off-line* can be like the learning that use CD and DVD.

On the other hand, Bonk & Graham (2006) said that Blended learning can combine the positive aspects of the two learning environment, that is learning that doing in classroom and learning with e-learning. In addition, McSporran & King (2002) said that Blended learning is a mixed method chosen and that using in implementing different types of leaning according to different needs.

3. Distance Learning

Distance learning is learning methods where teaching activities are conducted separately from learning activities. The separation of the two activities can be physical distance, for example because the learner is away from the location of the educational institution.

According to Rusdestan & Schoenholtz-Reed (2010) said that Distance learning is learning by using media that allows interaction between teachers and students. In the distance learning, the teachers and the learners are not face-to-face, the learning separate the teacher and the learner.

Moreover, Keegan in Smaldino (2008) said that to identify the distance learning system, the distance learning have some characteristic. Those are:

1. The separation between teachers and the learners.
2. The learning program that well-managed.
3. The usage of Information Communication and Technology.
4. Two ways communication.

The communication classroom should work-well to make the function of distance learning achieved. Those functions are:

1. The presentation of information.

The presentation of information is not only delivered by the teachers but centered on the learners such as presentation and demonstration by teachers and learners, texts and illustration, audio and video.

2. Practical and feedback.

The learning involved the students actively like question and answer, discussion, groups, and examination.

3. The sources of learning.

The source of learning can access easily like printed paper, audiovisual, database and library.

Based on explanation above, the researcher can be concluded that there are three kinds of information and communication technology (ICT) in education such as E-learning, Blended learning and Distance learning. Each learning method has usefulness or benefits in education.

2.1.1.5 Integration of ICT in Education

Integration of Information and Communication Technology (ICT) bring about improvements in educational quality, but if we change our mindsets to use them reflectively and strategically, teaching and learning processes can be deepened. Creative and contextualized appropriation of new technologies contributes to more active and interactive pedagogies, increased motivation, updated teaching materials, discovery of self and others, and changed roles and relationships among teachers and students and with knowledge. Learning can become more dynamic as teachers and students become partners in accessing information, constructing relevant knowledge.

According to Canny & Rhoten (2002) stated that Although some countries are at the beginning of using new technology, its future use in education cannot be underestimated. It means that integrating of Information and Communication Technology (ICT) brings fundamental changes in teaching learning methodologies process. Moreover, Robinson & Latchem (2003) assumed that as new concepts of learning have evolved, teachers are expected to facilitate learning and make it meaningful to individual learners rather than just to provide knowledge and skills. Recent developments of innovative technologies have

provided new possibilities to teaching profession but at the same time have placed more demands on teachers to learn how to use these technologies in their teaching.

Besides that, John & Sutherland (2005) stated that caution is necessary when talking about new technologies and when assuming that certain media or technology will automatically produce certain learning outcomes. With the development of new technology, people will argue that technology will produce a change in integrating information and communication technology in education.

In conclusion, integration of information and communication Technology (ICT) in education give a good impact, because the increasingly sophisticated technology can changes provide the scope of learning for teachers and students.

2.1.2 Factors Influencing Integration of ICT in Education

According to Brummelhuis in Afshari, Abu Bakar, Su Luan, Abu Shamah & Fooi (2009) stated that there are two factors that influencing Information and Communication Technology (ICT), those are Non-Manipulative factors are factors that can not be influenced by others. While, manipulative factors that can influenced by others.

2.1.2.1 Non-manipulative Factors Influencing ICT in Education

2.1.2.1.1 Teachers' Demographic

Teacher Demographic is one of the factors that influencing information and communication technology in education. There are some factors in teacher demographics such as age, gender and teaching experience influence the

integration of Information and Communication Technology (ICT) in teaching of English education in the classroom. According to Ruthven et al. (2004) stated that the older fear or lack experience to use Information and Communication Technology (ICT). Then, the older feel intimidated by the new technologies than the younger generation. It means that the older teachers feel awkward or can not use information and communication technology (ICT) while younger teachers have the ability to use it.

Besides that, According to Volman & Van Eck, (2001) stated that female teachers gender in using Information and communication Technology (ICT) integration have low levels to use computers because their limited of technology access, interest and skills. Research studies reveal that male teachers use more ICT in teaching and learning process than their female counterparts (Kay, 2006). According to Campbell and Varnhagen (2002) reported that males are more likely to select technology first and then think about its application in teaching, whereas females tend to focus first on their instructional needs (pedagogy) before the technology itself.

According to Markauskaite (2006) stated that gender differences in self-reported ICT experience and ICT literacy among first year graduate trainee teachers. The study revealed significant differences between males and females in technical ICT capabilities, and situational and longitudinal sustainability. Male's more capable to use it.

According to Baek, Jong & Kim (2008) claimed that experienced teachers are less ready to integrate ICT into their teaching. It means that teacher experience

is also important to integrate ICT in the class. Teachers who have years of teaching experience in the classroom are less likely to use communication and technology information than newly taught teachers. it can be assumed that new teaching teachers are accustomed to using ticks and have experience in using technology tools.

2.1.2.1.2 Proper Training

Professional development of teachers sits at the heart of any successful technology and education program. Teachers' professional development is a key factor to the successful integration of computers into classroom teaching. Many school leaders perceive the lack of ICT related knowledge of teachers as one of the main impediments to the realization of their ICT related goals (Pelgrum *et al*, 2001). According to Gan (2001) Training plays an important role in a teacher's readiness to use computers. It means that teacher's training is very important for the teachers to using ICT in the classroom.

Besides that, According to Clark (2000) stated that when teachers are insufficiently trained they will not be confident enough to carry out full integration of ICT in the classroom. With proper training on how to implement ICT, teachers can offer crucial advice on how to select, integrate and evaluate computer tools to support teaching and learning as they are the backbone in any curriculum innovation. According to Becta (2004), lack of Information and Communication Technology (ICT) concentration in initial training is a barrier to teachers' use of ICT in integrating it in the subject matter. Therefore, where there

is no effective training on ICT, teachers will not be able to use ICT resources for integration purposes. Becta (2004) also stated that many teachers who do not consider themselves to be well skilled in using ICT feel anxious about using it in front of a class of students who perhaps know more than they do. Further, Sandholtz & Reilly (2004) stated that teachers' technology skills are strong determinants of ICT integration, but they are not conditions for effective use of technology in the classroom. Research has shown that teachers require experts in technology to show them the way to integrate ICT to facilitate students' learning (Plair, 2008). So, Information and Communication Technology (ICT) related training programs develop teachers' competencies in computer use.

2.1.3 Manipulative Factors Influencing Integration of ICT in Education

2.1.3.1 Facilities of ICT

The using of Information and Communication Technology (ICT) facilities in teaching learning process is very important to teachers and students in the classroom. According to Ajayi (2008) stated that the effective utilization of Information Communication and Technology in teaching and learning process depends on the availability of these facilities and teachers or lecturers competence in using them.

Besides that, Ozoji in Jimoh (2007) defined that Information and Communication Technology (ICT) as the handling and processing of information (text, images, graphs, instruction, etc) for use, by means of electronic and communication devices such as computers, cameras, telephone. Similarly, Ofodu

(2007) also defined that Information and Communication Technology (ICT) as electronic or computerized devices, assisted by human and interactive materials that can be used for a wide range of teaching and learning as well as for personal use. From these definitions, ICT could be defined as processing and sharing of information using all kinds of technologies for the manipulation and communication of information. There are some facilities such as radio, television, computers, overhead projectors, optical fibres, fax machines, CD-Rom, internet, electronic notice board, slides, digital multimedia, video/VCD machine and so on. It appears some of these facilities are not sufficiently provided for teaching and learning process in the classroom.

2.1.3.1 Teachers' Attitude

Attitude is an important concept in social judgments and behaviours and thus, is one of the most important concepts in decision making (Venkatesh *et al*, 2003). One of the factors influencing the use of information and communication technology in education is teachers' attitude. According to Buabeng-Andoh (2012) stated that the more experience teachers for using computers, the more likely they will display positive attitudes towards for using computers in teaching and learning process. It means that if teachers' attitudes are positive towards the use of educational technology then they can easily provide useful insight about the adoption and integration of Information and Communication Technology (ICT) into teaching and learning processes and Negative attitudes towards technology on the other hand among teachers is a key obstacle to successful integration.

Besides that, Attitude towards ICT influences teachers' acceptance of the

usefulness of technology, and also influence whether teachers integrate ICT into their classroom (Huang, 2005). Moreover, the findings study by Palak and Walls (2009) stated that the strongest predictor of future Information and Communication Technology use were teachers' attitudes toward it. It means that teacher have a good way to use technology implementation in teaching, the teachers' attitude can be a strongest predictor to people opinion.

It can be concluded that if the teacher have a positive attitudes for using Information and Communication Technology (ICT), they can operate the technology and also give a motivation to students in teaching learning process. On the other hand, if the teacher have a negative attitudes for using Information and Communication Technology (ICT) they can not integrate the technology in teaching learning process.

2.1.3.1 Teachers' Workload

Some studies have stated that the teacher's workload influence their acceptance of technology in teaching learning process in class. According to Becta (2004) stated that the problem of lack for time exists for teachers in many aspects of their works as it affects their ability to complete tasks. Teachers lack enough time to locate internet advice prepare technological problems and receive adequate training. It means that teacher should be have many times to prepare their lessons to teaching in the class.

Besides that, According to Guha (2000), teachers' lesson workload and time management was a hindrance to the implementation of ICT in teaching. A

research carried out in Malaysian Smart schools in 2010 indicates that many teachers felt time was an important factor in ICT integration. The time factor for the teacher in teaching is teachers' free time, time to prepare lesson and time for teaching. Teachers felt that free time is too short to use ICT to integrate it into the lesson, time to prepare for the lesson should be catered for and the teaching time was inadequate if one was to integrate ICT in the lesson. The more lessons given to teachers per week, the less free lessons are given to students. Therefore, teachers can take time to integrate ICT. Understaffing in schools leads to high lesson workload for teachers and as a result they will get less free time for lesson preparation.

2.2 Relevant Studies

There are some past studies done by other researchers about factors influencing integration of Information and Communication Technology (ICT). These relevance studies are references for researcher on doing this research. So, the researcher can enrich the theory used in this research.

First, the research from Nyakowa (2014) entitled Factors influencing ICT Adoption Among Public Secondary School Teacher: A case of Webuye Sub-County, Bungoma County, Kenya. This Research used correlation research design. The purpose of this research to determine the accessibility, utilization and preparedness in using ICT among public secondary school teachers in Webuye Sub-county, Bungoma County. The target population was Public secondary school under the Ministry of Education Program-computer for schools, TSC

employed teachers, principals and Zonal education officers in Webuye sub-county, Bungoma County in Western Province. There are currently 25 schools and about 360 teachers and five educational zones namely Lugusi, Milo, Webuye, Bokoli and Ndivisi. Therefore the target population will be 360 TSC teachers, 25 principals and 5 zonal education officers making a total study population of 390. The data collection instruments of this research were the questionnaires and interview. The data analysis used Descriptive and facilitated by used SPSS 17.0. The finding of this research showed that ICT to be effective adopted in public secondary schools, more emphasis should put in developing the competence of teachers. Teachers' perception in terms of using ICT were found to be positive but hampered by other aspects such as unavailability of adequate equipment. The researcher recommended that teachers' ICT development should be stepped up with corresponding supply of necessary equipment and training. Further continuous and consistent technical assistance should always be available for the teachers whenever required.

Second, the research from Shiboko (2015) entitled Teacher Factors Influencing integration of Information Communication and Technology in Teaching of English in Public Secondary Schools in Mumias Sub-Kenya. This research used a descriptive survey with qualitative and quantitative approaches. The target population was 3320 participants involved English teachers, head teachers and students. The research instruments of this research were the questionnaires for English teacher and students and interview for the head teachers. Data analysis used the descriptive statistic. The finding of this research

showed that the teachers' demographics such as age, gender, teaching experiences and number of subject are not the only factors that influencing ICT for English lesson in Mumias sub-county. There are other factors that included such as students attitude, support from the head teachers (school) and number of teachers trained in ICT. The researcher recommended that all of secondary schools should be provided with ICT infrastructure and the teacher should be given the training of ICT.

Third, the research from Gode (2013) entitled Factors Influencing Integration of Information and Communication Technologies in Public Primary Teacher Training Colleges in Central Region of Kenya. This research used descriptive study survey with qualitative and quantitative. The target population was 261 academic staff (teacher trainers and administrators) in public PTTC's in Central region of Kenya covering the counties of Kiambu. Data were collected using questionnaires and interview schedules. The obtained data were analyzed systematically using descriptive statistics and presented with help of frequency table, graphs and percentages in the Statistical Package for Social Sciences (SPSS) version 17. The study found that the factors that influenced integration of ICT in the primary teacher training colleges were: adequacy of internet connectivity, adequacy of computer hardware, adequacy of computer software, maintenance of ICT infrastructure, training of personnel in ICT, teacher workload, teacher gender, teacher age, presence of ICT policy and adequacy of funds. The study therefore recommends that primary teacher training colleges should develop

strategies to identify strengths and weakness of various technological resources as well as an evaluation framework.

2.3 Conceptual Framework

Conceptual framework is the systems of concepts, assumptions, expectations, beliefs, and theories that support and inform a study is a key part of your design (Miles & Huberman, 1994; Robson, 2011) in J. Sitko (2013). So, for this research the researcher uses the conceptual framework as gives insights and broadens our understanding.

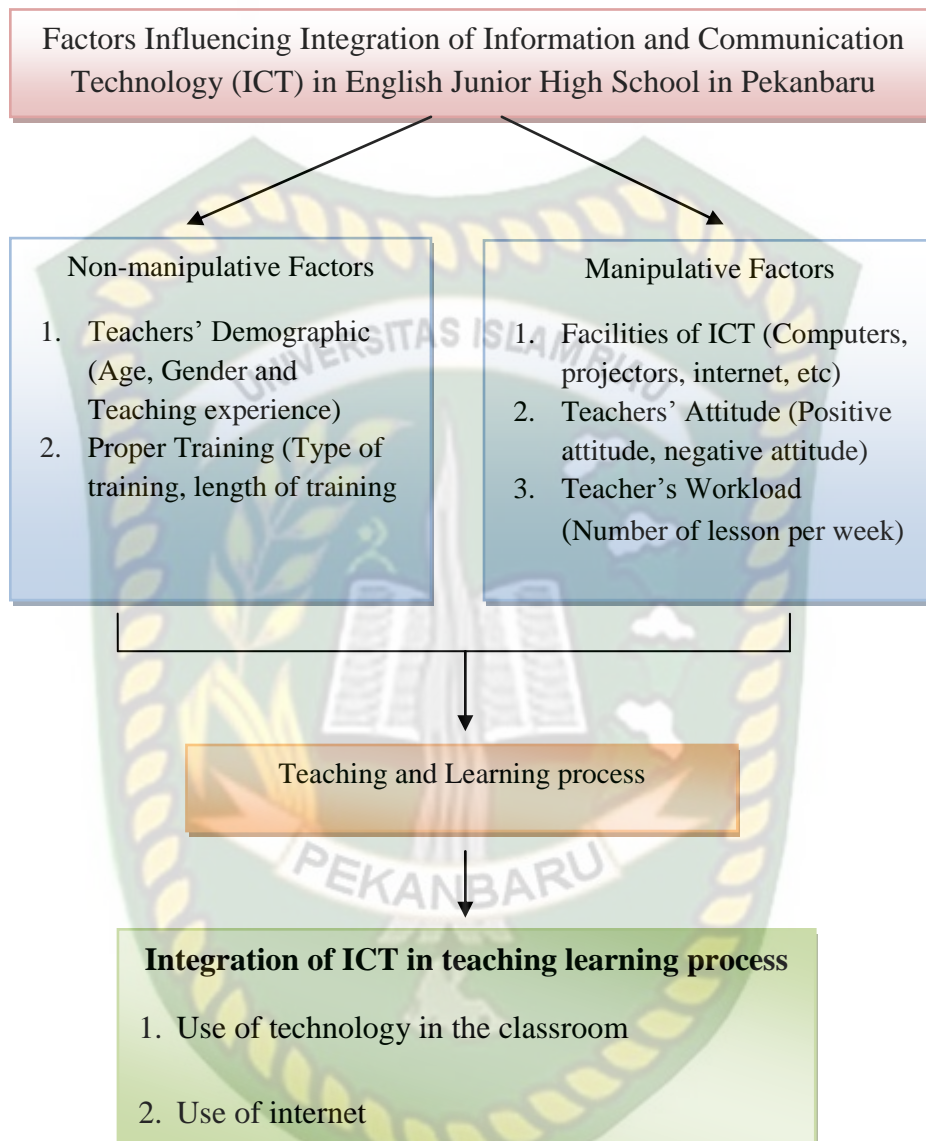


Figure 2.1 Factors Influencing Integration of ICT in teaching

(Adopted from Ten Brummelhuis in Afshari, Abu Bakar, Su Luan, Abu Shamah & Fooi, 2009)

From figure 2.1 we can see the teachers' demographic factors have a positive impact on integration of Information Communication and Technology in teaching. Effective integration of Information Communication and Technology affected by the proper training that gave to the teachers that can makes them enthusiastic and confidence in using technology. The availability of facilities of ICT has the impact on the applying of ICT in teaching and learning especially in the classroom. the students will be interested to learn English. The facilities will support the theory and the training of ICT. The proper training and the availability of ICT facilities will make the lecturer will be adequately prepared to handle their teaching workloads. The teachers' attitudes also influence the integration of ICT because the positive and negative attitudes will give the impact to the utilization of ICT in teaching learning process in the classroom. The result is the change in teaching methods as the teacher is able to use the technology and internet as learning media and they are can improve their skills to use it.

2.4 Assumption

The Assumption underlying the research were:

Non-manipulative and manipulative factors influence the integration of Information and Communication Technology (ICT) in Teaching English at Junior High School.