

## **CHAPTER 2**

### **LITERATURE REVIEW**

This chapter covers the basic theoretical framework used in this study which is related to the literature review discussed in the preceding chapter. The chapter presents brief literature on ICT, Language assessment, EFL Teachers' Perceptions, and lastly previous studies.

#### **2.1 Theoretical Framework**

##### **2.1.1 ICT**

###### **2.1.1.1 ICT Definition**

ICT is an abbreviation of Information and Communication Technology. There is no single, universal definition of ICT because the technologies, devices, and even ideas related to ICT are constantly evolving. However, the term is generally accepted to mean all devices, networking components, and applications. In general, Information and Communication Technology covers two aspects, namely Information Technology and Communication Technology (Kintoko & Utami, 2019). Information technology includes all devices that can process data and or information, both systemically and sporadically, whether applied to the product or applied in the process (Peñalvo & Francisco, 2021). Communication technology is related to the use of tools to process and transfer information from one device to another (Kintoko & Utami, 2019).

Information and communication technology can also be interpreted as a tool used to process data, including processing, obtaining, compiling, storing, and manipulating data in various ways to produce good-quality information that is relevant, accurate, and timely. Blurton in Isnani (2019) stated that information and communication technology (ICT) is described as a broad set of technical tools and resources used to transmit, generate, distribute, collect, and organize information. Another definition is that ICT is a scientific, technological, and engineering discipline and management

technique used in handling information, its application, and its association with social, economic, and cultural matters (UNESCO; Ratheeswari, 2018).

Along with globalization, the use of ICT has become a necessity or mandatory requirement for everyone. The use of computers to access, process, and present information, both individually and in groups, on the intranet and on the internet, is a primary need in the digital era. (Kintoko & Utami, 2019). This refers to the fact that the development of ICT has been affecting humans in almost every aspect. In education, Hernandez (2017) claims that school is one of the venues where technology has had the greatest impact, which in turn has had an effect on the role of the teacher and has become a part of the school's everyday life.

#### **2.1.1.2 ICT in Learning and Teaching**

Information and Communication Technology (ICT) has emerged as a powerful force for enhancing teaching and learning in the traditional educational environment. ICT in teaching and learning refers to the use of technology, such as notebooks (such as Chromebooks and Prime books), and tablets with learning applications, with or without the Internet, to improve the educational experience for both teachers and students (Wiranda et al., 2020). Shahabul (2018) portray ICT as a device of education that can supplement, advance, and change education to improve things. Hughes in Luhama et al. (2017) defines technology integration in teaching and learning as the use of digital ICTs by teachers and students that support the constructivist teaching and learning process. The role of ICTs becomes very important in the learning process because it can improve the efficiency and effectiveness of learning so that it can increase the attractiveness and attention of students. Parvin & Salam (2015) stated that ICT plays a role in the changing language classroom to be more innovative in learning. Moreover, the integration of ICT into the pedagogical process facilitates interactive communication between educators and learners, and fosters innovative pedagogical approaches and practices (Hong et al., 2024).

ICT in teaching and learning can be used in various ways to help teachers and students to learn about their respective areas. Dancsa et al., (2023) stated ICT platforms were available for teaching lessons, sharing resources, assessment, and managing the day-to-day activities of academic institutions. Furthermore, Prasad & Gupta (2020), mentioned ICT can be used both at school and higher education levels in the area such as; teaching-learning, diagnostic testing and remedial, evaluation activities, and instructional material development.

A significant amount of research has shown that the use of ICT in teaching and learning has some positive impact. The use of ICT during the teaching-learning process helps the instructor to promote the transmission of the subject matter and helps students to understand the lesson easily and amusingly (Hasan et al., 2019). ICT helps the teachers transfer the subject matter easily because it provides a lot of learning media, thus the students will enjoy receiving those subjects (Abdulrahman et al., 2022). Teachers also saw the benefits of managing, storing, and other work like preparing reports with time saved (Srivastava, 2016). According to Hosen & Mohammad (2022), ICT increases students' motivation and deepens understanding, promotes active, collaborative, and lifelong learning, offers shared working resources and better access to information, and helps them to think and communicate creatively. Furthermore, Coleman et al., (2016) contend that the appropriate use of ICT in teaching transforms the learning environment from teacher-centered to learner-centered. They stress that this shifting of emphasis from teaching to learning creates a more interactive and engaging learning environment for teachers and learners thus changing the role of the teacher from a knowledge transmitter to that of a facilitator, knowledge navigator, and a co-learner. In addition, the integration of ICT has impacted improving the quality of teaching and learning to become more accessible, affordable, and democratic.

### **2.1.1.3 Types of ICT Use in Learning and Teaching**

The common types of ICT use in Learning and Teaching can be classified into two categories; they are:

#### **2.1.1.3.1 Physical ICT Hardware or Gadgets**

Hardware is a physical component that is visible, touchable, and has a shape that distinguishes the data that operates inside it. According to O'Brien & Marakas (2011), hardware is all the physical equipment used in information processing. Fahreza in Rianto & Dozan (2020) stated that hardware is the part of the hardware that works according to software instructions. Furthermore, hardware also defined as a computer device that consists of an array of electronic components in physical form (Putri, 2017).

In ICT, hardware is the physical component used for connecting several networks and processing information. (Santi, 2023). For example, computers are the main devices, network devices and also storage devices. In teaching and learning, the common ICT hardware used are; smartboards, smartphones, computer devices, projectors, printers, etc.

#### **2.1.1.3.2 Non-Physical ICT Software**

Software is a computer program that functions as a medium of interaction between users and hardware. The software can also be interpreted as a “translator” of commands executed by computer users to be forwarded or processed by hardware (Septiaji & Nazrudin, 2022). According to Roger (2002), software is a program command in a computer, which when given a command by the user will provide functions and performance as expected by the user. In teaching and learning, ICT software is the term used for any computer software created with an educational purpose. It covers a different range from language learning software to classroom management software to reference software (Hetzroni & Orit, 2016). In general, software used in teaching and learning is in the form of online digital tools. According to Danca et al., (2023), online digital tools are software, applications, technologies, plug-ins, add-ons, or websites that are accessible via an internet connection and enhance learners' ability to

conduct a thorough literature review and to master the knowledge they need to learn. Below is an overview of some online digital tools that are commonly used in teaching and learning;

#### **2.1.1.3.2.1 Google Forms**

Google Forms is a web-based app used to create forms for data collection purposes (Wiemken et al., 2018). Students and teachers can use Google Forms to make surveys, quizzes, or event registration sheets. The form is web-based and can be shared with respondents by sending a link, emailing a message, or embedding it into a web page or blog post. Google Forms can be applied in teaching and learning sessions because it has user-friendly features (Arief, 2017).

#### **2.1.1.3.2.2 Quizizz**

Quizizz is a relatively new digital learning platform that has been gaining in popularity in recent years. It is an online learning application used to create and share interactive quizzes with students (Junior, 2020). This app was created in 2015 by Deepak Joy Cheenath and Ankit Gupta as a tool to increase students' satisfaction and involvement with their education. With its complete and easy-to-use features, Quizizz is a very useful app for teachers and students to enhance interactive and effective learning experiences (Zhao, 2019).

#### **2.1.1.3.2.3 YouTube**

YouTube is the largest and most interesting video sharing platform to be used in learning (Bardakcı, 2019). The use of YouTube provides many advantages in terms of filling current learning needs that are in accordance with the educational needs of the younger generation (Frag et al., 2020). Learning dominated by the use of YouTube as a good means of teaching and assignment has become a current trend (Sakkir et al., 2020). The use of YouTube in learning that is carried out optimally will contribute to the creative

development of students through the process of making video works that collaborate with various sources of information (Sari & Margana, 2019).

## **2.1.2 Assessment**

### **2.1.2.1 Language Assessment**

Assessment is a popular and sometimes misunderstood term in current educational practice. Assessment is frequently confused and confounded with evaluation. The purpose of an evaluation is to judge the quality of a performance or work product against a standard. On the other hand, the fundamental nature of assessment is that a mentor values helping a students and is willing to expend the effort to provide quality feedback that will enhance the students' future performance (Yambi, 2018). According to the Webster Dictionary (2017), assessment means appraisal. Brown (2004) argues that assessment is an ongoing process that covers a wide range of activities. This involves gathering and interpreting information about the student's level of attainment of learning goals. The results of getting the information will be used as a basis for decision-making and subsequent action in gaining knowledge (Arifian, 2015). Furthermore, Baird et al., (2017) mentioned that assessments are used to investigate what people know and can do and to make decisions regarding whether they have learned what was expected.

In language learning, assessment is defined as a systematic method of gathering, analyzing, and interpreting data about an individual's language proficiency (McNamara, 2019). Furthermore, Purpura (2016) stated that language assessment is a broad term referring to a systematic procedure for eliciting test and non-test data (e.g., a teacher checklist of student performance) to make inferences or claims about certain language-related characteristics of an individual. Assessment is important in language learning because it allows teachers to see how well their students are grasping the concepts presented in class. The effectiveness of a learning process can be evaluated with the help of assessment, which is a crucial

technique (Tridane et al., 2015). Teacher evaluation of classroom learning conditions is also based on assessment results (Msosa et al., 2021). In learning English as a foreign language, teachers assess both linguistic skills and communicative skills. Seftika & Kurniati (2017), stated that language communicative skills assessment includes; assessing listening, assessing speaking, assessing reading, and assessing writing. Furthermore, linguistic skill assessment includes assessing grammar, assessing vocabulary, and assessing pronunciation. Each type of class might have its own assessment objectives, nevertheless, the previous interrelated areas are usually taken into account.

### 2.1.2.2 Assessment Principles

Assessment is the process by which educators assess the knowledge, understanding and skills of their learners. High-quality assessment practices are needed to provide results verifying and promoting targeted student learning. Therefore, assessment principles and procedures are necessary to become the foundation for conducting assessment. Fundamental aspects of such high-quality assessment according to Chen & Fox (2017), are:

**Alignment:** The degree of agreement among curriculum, instruction, standards, and assessments (tests). To achieve alignment, it is needed to select appropriate assessment methods, which reflect or represent clear and appropriate learning outcomes or goals.

**Validity:** The appropriateness of inferences, uses consequences that result from the assessment. This means that a high-quality assessment process (i.e., the gathering, interpreting, and using of the information elicited) is sound, trustworthy, and legitimate based on the assessment results.

**Reliability:** The consistency, stability, and dependability of the assessment results are related to reliability. This quality criteria guards against the various errors of the assessments. For example, reliability is the indicator of the number of errors we are making in marking students' work and how consistent our marking is.

**Fairness:** This is achieved when students are provided with an equal opportunity to demonstrate achievement and assessment yields scores that are comparably valid. This requires transparency, in that all students know the learning targets, criteria for success, and what and how they will be assessed.

**Practicality and Efficiency:** Practicality relates to cost of a test, time allotment, test administration, human resource, test construction, and test scoring. (Chen & Fox, 2017)

Meanwhile, JISC in Isnaini et al. (2021) mentioned the principles of assessment in the digital era are as follows:

**Authentic Assessment:** Authentic assessment allows learners to express themselves in a way that feels natural to them and preparing the learner for what they are going to do next.

**Accessible and Inclusive Assessment:** Assessment should become more accessible and inclusive. All technology used should be accessible to all learners, including learners with special needs.

**Appropriately Automated Assessment:** Easing teachers' marking and feedback workload, and providing quicker, more detailed and more actionable feedback for students.

**Continuous:** Rich in practice opportunities and reflecting that students today need to be capable of lifelong learning, to adapt to changes in the world of work and across their lives rather than succeeding at one high stakes, high-stress exam.

**Secure:** Ensuring that the right student is taking the right assessment and that the work they are submitting is their own and abides by the rules.

Apart from the assessment principles stated above, other principles also might be practiced in evaluating and designing assessments. Language assessment is an extraordinarily broad discipline with many branches, interest areas, and issues (Brown & Douglas, 2004). The process of designing effective assessment instruments is far too complex to be reduced



to the principles stated above. However, the principles cited here serve as an excellent foundation for evaluating existing instruments.

### **2.1.2.3 Dimension of Assessment**

According to the Oxford Dictionary, dimension means "a measurable extent". To assess learning progress, it is needed to make several kinds of measurements. Cheng & Fox (2017) mentioned that there are two terms that best represent the dimensions of assessment, namely assessment of learning and assessment for learning, otherwise also known as summative assessment and formative assessment. Teachers engage in both dimensions of assessment practices. The collaboration of formative assessment punctuated with the use of summative assessment is the best way to support our students' learning.

#### **2.1.2.3.1 Summative Assessment.**

At the conclusion of a lesson or unit, teachers use a technique called summative assessment. Summative assessment refers to assessments that happen after learning has occurred, to determine whether learning has happened. They are used to make statements about a student's learning status at a particular point in time (Cheng & Fox (2017)). Summative assessment is used primarily to make decisions for grading or determine readiness for progression. Typically, designed to judge the learner's overall performance. Brown & Abeywickrama (2019), stated summative assessment aims to measure, or summarize, what a student has grasped, and typically occurs at the end of a course or unit of instruction. Summative assessment includes things like course finals and standardized tests of knowledge and skill (Winna & Sabarun, 2023). In Assessment of Learning, the results are expressed symbolically, generally as marks across several content areas to report to parents.

#### **2.1.2.3.2 Formative Assessment**

Formative assessment is an educational measurement that is used to inform the teaching and learning process. Cheng & Fox (2017), define Formative assessment as the process of seeking and interpreting evidence

for use by students and their teachers to decide where students are in their learning process, where they need to go, and how best to get there. Black & William in Zhou (2023) further interpreted that practice in a classroom is formative to the extent that evidence about student achievement is elicited, interpreted, and used by teachers, learners, or their peers, to make decisions about the next steps in instruction. The purpose of formative assessment is to provide feedback on students, which can be used to identify strengths and weakness and hence improve future performance. According to Brown & Abeywickrama (2019), formative assessment evaluates students in the process of forming their competencies and skills with the goal of helping them to continue that growth process. The key to such formation is the delivery by the teacher and internalization by the student of appropriate feedback on performance, with an eye toward the future continuation of learning. Furthermore, Dolins & Evans (2018) explained that formative assessment aims to seek the students' achievement and decide the following action. In addition, formative assessment is also the component of teaching in which teachers find out about the effectiveness of the learning activities they are providing (Voinea, 2018).

Formative assessment is a type of assessment presented in the middle of a teaching program. Usually in schools, formative assessment is generally emphasized on the learning materials that a teacher will teach or before proceeding to the new learning materials, repeat or explain which parts the students have not mastered or understood. Thus, formative assessment aims to improve students' mastery of the material and simultaneously improve the learning process (Zarghami & Dumrak, 2020). Formative assessment instruments can be tests, assignments, projects, or other activities designed to provide helpful feedback for students and teachers in supporting learning (Widiastuti & Mantra, 2024). Formative assessment collects data on how much students have progressed in mastering targeted competencies. The data obtained will be interpreted carefully so teachers can choose practical learning activities for students to

master the material/competencies optimally (Widiastuti et al., 2022). In addition, the results of formative assessment are useful for teachers and students. The benefit for the teacher is that the teacher will know the extent to which the learning material has been mastered and can estimate the results of the summative assessment (Stanja et al., 2023).

#### **2.1.2.4 Integrating ICT in Language Assessment**

The rapid adoption of Information and Communication Technology in education has brought with it a transformative effect on assessment practices. The integration of ICT in formative assessment involves the use of software, applications, and online platforms to collect data about students' understanding (Rasmini et al., 2023). Irving (2015) asserted that these ICT tools assist in the formative assessment process by supporting classroom environments that allow students and teachers to assess learning and providing mechanisms to present information about student learning during instructional sequences. There are a number of ICT's software that aid teachers to use formative assessment during the instructional process which enhance learning and assessment. Some of these software are: Google Forms, Quizizz, and YouTube which have been overviewed previously.

Central to many technology-integrated assessments is the Constructivist Learning Theory, proposed by Piaget (1954). This theory posits that learners build knowledge based on their experiences. Modern technologies, such as ICT, offer environments where students can actively construct knowledge through exploration, reflection, and application (Lim et al., 2023). However, the explosion of technology in learning also brings challenges. One significant concern is the potential of overwhelming students with excessive information. The Cognitive Load Theory, introduced by Sweller in Houchi & Sarnou (2020). Addresses this concern, suggesting that learners have a limited cognitive processing capacity. As such, assessment tools, especially those employing technologies, must be optimized to balance cognitive load, ensuring students are neither under-challenged nor stretched beyond their limits (Lim et al., 2023)

Using ICT tools with formative assessment has many advantages. Using technology to develop assessment methods has offered new opportunities to increase interaction personalization, and student engagement in the learning process (Rasmini et al., 2023). Furthermore, the use of ICT-based assessments also has the advantage of being able to conduct assessments in the form of multiple-choice tests and or descriptions as well as being able to analyze student scores automatically (Marina, 2016). Another advantages of ICT-based formative assessment is its ability to provide instant feedback to students. By using digital tools, students can receive information about the correctness of their answers and get a deeper analysis of areas that need improvement (Lyon et al., 2021). The use of technology in assessment also help teachers in collecting and analyzing data from the assessment. In addition, ICT-based assessment can save costs because it is shared online, and users no longer need to print questions using paper. (Wijaya et al., 2020)

### **2.1.3 Perception**

#### **2.1.3.1 Perception Definition**

Perception is a psychological process through the experience gained by the five senses, individuals can process responses into positive or negative perceptions. According to Huffman (2010), perception is the process of selecting, organizing, and interpreting sensory information. Obtaining responses is obtained through the stages of selection, interpretation, and reaction (Erin, & Maharani, 2018). Ghadirian, Ayub & Salehi (2017) described perception as a process of actions for acquiring information. Another definition from Saifuddin (2020), that perception is a process that starts from the use of the five senses in receiving a stimulus, then it organized and interpreted so that it has an understanding of what is sensed. From the definition above, it can be concluded that perception arises based on experience and feeling of each individual.

### **2.1.3.2 Teachers Perception**

Someone's perception of something greatly influences what the individual is likely to do concerning that subject. In perceiving the use of ICT in language assessment, it is crucial to consider teachers' perception, because neglecting their function in educational production may lead to underestimating the true effects. Stols et al. (2015), in their conclusion, stipulated that teachers' perceptions that their knowledge and skills were limited seemingly weighed heavier than externally supportive facilitating conditions in the integration of ICT in teaching. The authors' finding indicates that although all the needed facilities and support can be available to the teacher, his beliefs can impede ICT integration in the classroom. Wondemtegegn (2018), stating his problem, posited that the attitude and perception of teachers and students towards educational technology might affect its implementation and utilization for the teaching and learning processes and purposes. The statement demonstrates the necessity to positively influence teachers' perceptions for ICT integration in teaching to be as successful as anticipated. The teacher's good perception is relevant as that pushes him to strive to involve ICT tools in the teaching process, knowing it will benefit his/her students

### **2.1.3.3 Types of Perception**

According to Robbins (2003), perception is divided into two forms, positive and negative perception.

1. Positive perception is a perception that describes all knowledge and responses that continue with the effort to use it. This will be continued by activating or accepting and supporting the perceived object.
2. Negative perception is a perception that describes all knowledge and responses that are not in harmony with the object in perception. It will proceed with passivity or reject and oppose the perceived object.

Thus, it can be said that perception is both positive and the negative will always affect someone in doing something. Positive

perception or negative perception all depends on how individuals describe all their knowledge about an object that is perceived.

## **2.2 Study of Relevant Research**

The study of relevant research is the researcher's attempt to find comparisons and then to find new inspiration for further research. In addition, relevant study helps research position the research and show the originality of the research. In this section, the researcher includes various previous research results related to the research to be carried out and then makes a summary, of whether the research has been published or not yet published. The following is previous research that is still related to the theme the author is studying.

The first research was conducted by Mahdum et al., (2019). The study was descriptive-quantitative research that aimed to investigate teachers' perceptions and motivations for ICT use in learning activities. The data was collected through a questionnaire that was adapted and modified into 40 items which then were grouped into six categories namely Perceived Usefulness (11 items), Perceived Ease of Use (9 items), Self-Efficacy (5 items), Educational Benefit (6 items), Impact on Teaching (6 items), and Training Attended (3 items). The participants of the research were 633 teachers from the four sub-districts in Indonesia. According to this research, the result indicated that teachers have positive perceptions towards ICT use in learning activities. Although they faced several obstacles related to facilities and technical knowledge.

The second is research conducted by Isnani (2019). According to this research before using ICT in English teaching, the teachers should know the role of ICT in their courses to be able to utilize it optimally. The study then applied descriptive qualitative as the research design. The data were collected through interviews with five participants five teachers from different schools in Yogyakarta, Indonesia. The researcher analyzed the data using three flows including data reduction, data display, and concluding/verification. The findings of this study showed that ICT plays a role as a tool, a source, and a motivation for students' English learning.

The third research was conducted by Setiyadi (2021). In his research, the researcher argues that the cognitive aspect is central to the continuity in learning development because authentic assessment is considered complicated to implement. Then, this study aims to produce an authentic ICT-based assessment system that is feasible and effective. The research method uses a one-group pretest-posttest design with data collection techniques in the form of observation, interviews, questionnaires, documentation, and tests for 131 fifth-grade students. Based on the results, the researcher found that an authentic ICT-based assessment instrument is feasible and effective to use to measure the cognitive competence, attitude of responsibility, and cooperation of fifth graders. The application of an ICT-based authentic assessment system can measure students' achievement accurately. ICT-based authentic assessment systems can be used flexibly in line with the needs of teachers.