

USING INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN THE EDUCATION SECTOR: OPPORTUNITIES AND CHALLENGES IN ENGLISH LANGUAGE TEACHING (ELT)

Tira Nur Fitria

Institut Teknologi Bisnis AAS Indonesia

tiranurfitria@gmail.com

Abstract

This research explains the opportunities and challenges of using Information and Technology Communication (ICT) in the English Language Teaching (ELT) process. This research is library research. The analysis shows that educators (teachers/lecturers) have opportunities and challenges in adopting ICT in their classrooms. The development of ICT requires educators to adapt to the technology. The opportunities for using ICT in ELT are improving the quality of education, encouraging the development of new teaching methods, getting get unlimited ease of information easier, providing instant access to various learning resources, changing learning styles, making ELT activities more flexible, allowing teachers to use/create interesting learning media in teaching, having the potential to reduce the price of textbooks and education costs, increasing student learning interest and motivating students to learn. While, several challenges of using ICT in ELT are the emergence of various disturbances, growing lazy mindset, requiring expensive costs, limitations of social interaction between teacher and students, difficulty in understanding learning materials in digital form, having a dependence on technology, distracting students on ICT tools, and disconnect students from face-to-face relationships. Besides, other challenges are the teacher's self-confidence is lacking use of ICT, lack of teacher competence, teacher attitudes and inherent resistance against change, the teacher's level, and the institutional or school level, limitations in the field of access, limited time available to prepare ICT, limitations in self-potential development through training of using ICT. The infrastructure problem and limitations in technical support in terms of using ICT also influenced the challenges in ICT implementation.

Keywords: *education, English Language Teaching (ELT), Information and Communication Technology (ICT), technology*

Introduction

The term information technology became popular in the late '70s (Yustina & Putra, 2022). Information technology was once termed computer technology or electronic data processing. Information technology processes and distributes data utilizing hardware, software, computers, telecommunication, and digital electronics. Information and communication technology (ICT) aspects related to the use of telecommunication and

technology collect, store, manipulate, and provide quantitative information covering all machines (computers used to distribute and convey large amounts of information (Kurniawan et.al., 2023). ICT is an umbrella term that covers all the technologies used to manipulate information and communications (Liliweri, 2010). It is a set of hardware and tools and software used to store information (Abdurrohman et.al., 2023). It means that ICT is a form of communication with remote information utilizing digital or binary standards (Suryana, 2021). The purpose of ICT is to solve a problem, open up creativity, and increase effectiveness and efficiency in doing the job (Kessi, 2019). The role of information technology in human activities at this time is indeed so great (Syafri & Zen, 2019). Technological advances have a fairly broad influence on every front of human life (Ajizah & Munawir, 2021).

ICT covers two aspects, namely information technology and communication technology (Rahim, 2011). ICT can be a driving force toward the progress of the nation, one of them being in the field of education (Miftah et.al., 2021). Technology, information, and communication play an important role in influencing education in Indonesia (Hasan et.al., 2023). Because it improves the efficacy and efficiency of the learning process, ICT is one of the learning media that is widely used in various domains of education. The presence of technology plays a crucial function in education (Yusuf & Widyaningsih, 2022). In the learning process, one of the applications of ICT in the sphere of education is the use of multimedia facilities and Internet media (Lukitoyo, 2021). The various roles of ICT in education cannot be avoided anymore (Adiputra, 2020). The role of ICT in education is expected to improve the quality of education (Rachmayanie et.al., 2020). The development of information and technology in the millennial era currently encouraging educators as educators to learn and master technology as a support in the learning process including in learning activities (Japar et.al., 2019).

In the field of education, teachers are required to master four competencies, namely pedagogical, social, professional, and individual competencies. In the pedagogic competence, it is explained that teachers must be able to use and utilize ICT in carrying out learning. In education itself, technology now has its role in the teaching and learning process. We can apply the increase in technology in this modern era of globalization to education as more and more sophisticated facilities expedite the learning process delivered. The importance of technology is to always follow its development. The results of

technology have long been used in education. The invention of paper, the printing press, the radio, film, TV, the computer, and others were utilized for education. In essence, these tools are not made specifically for educational purposes, but these tools can be used in the world of education.

The function of ICT in education has become indispensable. The integration of information technology into the realm of education alters the activities associated with the learning process. As a hub for further education, higher education must provide a learning process that incorporates information and communication technology. Through the digitalization program, the academic community in higher education has access to a greater variety of material sources, unrestricted by formal education barriers. Digitalization can increase learning's effectiveness and efficacy while expanding its accessibility. This digitalization is an innovation in the world of education that has proved its ability to enhance education quality (Sutabri, 2012). Many positive contributions to educational activities and processes. One of the implications of the implementation of e-education is the international network facility (internet). The Internet has become an important thing in doing research and learning for teachers and students to share and obtain information (Wibisono et.al., 2023).

In the current era of globalization, it is impossible to evade the accelerated development of information technology, and its impact on the world of education is inevitable. The world of education must always and continuously adapt technological advances to endeavors to enhance the quality of education, particularly adjustments to the use of information and communication technology for world of education, particularly in the learning process. In this regard, teachers must also be able to acclimate to changes in technology, information, and communication to keep up with the advancements in ICT courses. Existing information and communication technologies tend to be digital (Syafriafdi, 2020). So in this case, ICT provides unique educational concepts and due training opportunities can improve teaching and learning, innovation, and creativity.

Previous studies related to the use of ICT in classrooms including the implementation and students' perception of it. Tekege (2017) states that the teacher paradigm for using ICT in learning is currently restricted to computer media. Internet utilization is currently confined to researching content and networking, not as a new integrated learning system. Social media is not frequently employed as a new learning method to improve learning

efficiency. Technology in education is not new, but using it to form conducive and innovative learners can improve how teachers communicate and interact with students inside and outside the classroom. Utilization facilitated learning. Education must incorporate ICT. Information technology influences schooling. Higher education must use ICT to teach. Digitalization gives higher education academics more material sources without formal education restrictions. Digitalization improves learning efficiency and accessibility. Digitalization in education is a breakthrough that improves education quality. Istiqoma & Prihatmi (2020) state that based on the results of the questionnaire indicate that there are facilities for using ICT in the learning process in the classroom which is considered very important for students, when the relationship between lecturers and students is going well, the delivery of material can also be conveyed properly. It can provide maximum results and make it easier for students to absorb learning material in class because it is considered more interesting than conventional lecture methods.

Teachers can incorporate ICT into the classroom (Budiman, 2012). They consider this technology to help the teaching and learning process, both indoors and outdoors. Many types of ICT can be applied in the teaching and learning process, such as computers or notebooks, telephones or mobile phones, LCD or OHP, language laboratories, and others. By using ICT in the teaching and learning process, teachers find that there is an increase in the enthusiasm of students in their participation in the teaching and learning process.

The use of technology in education certainly provides many benefits that are not only felt by students but also by educators or teachers. Then, what are the actual opportunities and challenges of technology for education, especially education in Indonesia? This study will be explained further. Through this library research, the researcher intends to explain and describe the opportunities and challenges in the use of ICT in English Language Teaching (ELT) by using several references from related previous books and research. Therefore, the purpose of this research is to explain the various opportunities and challenges in the use of ICT in the field of education, especially in the teaching and learning process in schools.

Method

This research uses library research or methods of study of literature. Documentation is going to be used as the approach for gathering the data. The researchers gathered the

necessary information for the study by searching many databases, including Google Scholar and ResearchGate, and gathering a variety of written materials, such as books and academic articles. Researchers make use of some keywords, such as "Information and Communication Technology" (ICT), in their search for the targeted reference. Additionally, researchers hunt for data sources whose titles are pertinent to the topic of this research.

Findings and Discussion

English teachers have potential and have challenges in adopting the use of technology in the classroom (Sokoi, 2015). According to Jumiatin & Lestari (2021), with the demands of teachers in utilizing ICT as learning media, teachers need to master these abilities so that teachers can create a different learning atmosphere. In addition, through ICT teachers can innovate and be creative in carrying out learning, especially in introducing English properly and appropriately. According to Faridi (2009), ICT is a form of progress in science, technology, and art that must optimize its function, especially in the implementation of learning English. ICT provides opportunities to tread global communication so that in facing the era of global competition students need to get adequate supplies. Through ICT-based English learning innovations, it can provide the widest possible opportunities for students to hone and spur their competence on an international scale. (Istiqoma & Prihatmi, 2020) ability to speak English can not be separated from the mastery of four skills, namely: listening, speaking, writing, and reading. ICT can be used in facilitating and enhancing the capabilities of these four skills.

The use of ICT in learning English is closely related to the use of computers (Budiman, 2012). A computer becomes an integral element of the evolution of ICT use. The computer is not only an electronic instrument that makes it simple for teachers to create lesson plans using Microsoft Office (Word, Excel, and PowerPoint), but it is also a means of communication, as it is now possible to communicate with someone thousands of kilometers away. This can happen with e-mail facilities, video conferencing, e-learning, etc.

The accelerated growth of the Internet will be advantageous if teachers recognize the opportunities it presents for teaching English. Internet-based resources can be utilized by educators as instructional resources. For instance, students struggle with writing because it is difficult to express emotions and create them in writing. If the teacher is devoted to

running the program, the use of ICT in English learning can continue continuously. Teachers must always be self-motivated to advance ICT. The word consistent is the key to and location of ICT success, so it can be beneficial for learning English. Ongoing training to develop ICT in learning English will be very important and necessary, as technology continues to evolve.

Suhardiana (2019) states that the application of different media involving the use of new technology is increasingly receiving support from various parties and is often carried out, not only in private schools but also in public schools, where English classes are more commonly accompanied by digital resources. This is because the application of various media involving the use of new technology is increasingly gaining support from various parties. One of the main objectives of teaching English using multimedia technology is to increase students' motivation and interest in learning, which can be an effective method to engage them in language acquisition. This activity's context must be founded on the availability and transparency of instructional materials and data. During the process of optimizing English language instruction based on multimedia technology, it is anticipated that students will not rely too heavily on their native language and will instead be encouraged and guided to communicate with one another.

Regarding technological advancements, the researcher concurs and predicts that the use of multimedia-based technologies in English instruction will be expanded in the future. The English-learning process will become more student-centered but also more time-consuming. Therefore, it is encouraging that the teaching quality and skills of students will be enhanced, which will result in the further development of students' communicative competence. In conclusion, this procedure can be optimized to enhance the abilities and practical language skills of students. According to Suyanto & Jihad (2013), The usage of ICT in language education is described below. First, ICT is a learning object that is typically organized into a variety of specific subjects to acquire ICT literacy. What is learned is dependent on the type of education and the student's level. This curriculum prepares students to use ICT in their education, prospective careers, and social lives. Second, ICT as an instrument, such as when completing assignments, gathering data and documentation and conducting research. Typically, ICT is used for autonomous problem-solving. Thirdly, ICT serves as a medium for the teaching and learning process. The application of technology in the teaching-learning process can improve the process of

setting goals by providing tools/communication tools and organization that make things easy to explain and communicate to teachers, students, and parents of students. Teachers can use various information technology tools for goal setting, such as the acronyms KWHL (Know, What, How, and Learn).

The Role of Educators in Information and Communication Technology (ICT)

Four competencies must be mastered by teachers namely pedagogic, personality, social, and professional (Fitria, 2021). Professional competence can be understood as the ability of instructors to master and utilize a variety of sources and resources to support learning, such as the ability to master science and ICT following the times. Teachers play a crucial role in the implementation of the teaching and learning process; therefore, knowledge, skills, and mastery of ICT that support the learning process are essential for them to possess at this time. One of the abilities that teachers must have in the learning process is to be able to utilize information and communication technology to communicate and self-development (Suhardi, 2023). The teacher is one of the most important parts of the teaching and learning process in the classroom, so it takes a teacher who is inspiring, creative, innovative, and able to utilize information and communication technology in the learning process (Nasution, 2018).

Educators play an important role in integrating information and communication technology into the education system (Handayani, 2022). Thus, mastering the knowledge and skills of technology and pedagogical in ICT will allow English educators to incorporate resources from these technologies into their teaching practice (Warsah, 2021). English educators who feel competent with information and communication technology will use it more in their classes. The connection between the competence of ICT educators and the use of educational resources in the practice of their teaching is very important for the technology integration process of information and communication. An English educator must be able to utilize information technology to enhance the teaching and learning process at all educational levels (Nita et.al, 2023). This effort was made to prepare superior human resources with global competence and the ability to adapt to the current era. Despite the rapid development of ICT and the accessibility of learning sources, the role of the teacher as an educator cannot be replaced by these technological advances, even if they are adaptable.

English educators (teachers/lecturers) are expected to improve their quality particularly their knowledge of ICT so that they can apply a learning-based system technology to students (Pertiwi et.al., 2022). Information technology is a science that includes collecting, organizing, storing, publishing and use of that information can be in the form of sound, images, graphics, text, numbers, and with using computers and telecommunications. The utilization of ICT allows students to access information from outside the classroom, the learning process is not monotonous, and can learn anytime and anywhere. This can be a motivation for students. Methods based on ICT. applied in education. Associated with model learning in this 21st era, educational technology has the challenge of creating and developing a variety of effective learning designs, to achieve a deep learning process (deep learning) and build new partnerships.

Therefore, educator as an important part of the world education like it or not must be able to apply and use learning in the classroom by utilizing IT technology. With the application of IT advances, the class can be said to have become a digital class and the teacher can be a digital teacher (Amini, 2020). Language learning in digital classrooms is very helpful to students in interpreting learning material, learning will also be more fun, facilitate the teacher in delivering learning material and even evaluate learning outcomes for learners (Fitria, 2022).

The Opportunity for Information and Communication Technology (ICT) in English Language Teaching (ELT)

Updates in technology and learning through technology can help students and teachers succeed in learning. There are many opportunities to be gained when using technology in education. Apart from being practical in the learning process, there are opportunities for using ICT in English Language Teaching, as follows:

1. Encouraging the development of new teaching methods

Instead of teaching students for an hour or having them read entire chapters in silence, instructors and professors now have the option of employing advanced teaching methods. Podcasts, journals, and social media are examples. When engaging with specific groups or individuals, teachers can utilize web conferencing and other online communication tools. In addition, technology provides teachers with universal tools that enable them to educate a diverse pupil population, including those who are struggling or have special needs. This

includes speech recognition, text-to-speech converters, translators, volume controls, software for word prediction, and other assistive technologies. In numerous ways, technology enables children to embrace their natural curiosity. They can attempt new activities without fear of embarrassment because their access to technology grants them anonymity. This process enables students to work, if you will, through trial and error, to determine if various strategies improve their learning efficiency. Even though technology can facilitate learning, students frequently find passive learning monotonous. With the availability of technology, however, teachers/lecturers can make learning more enjoyable by exhibiting videos that capture the attention of students/students so that they pay greater attention to the teachings explained by the teacher.

2. Getting get unlimited ease of information easier and provides instant access to various English learning resources.

Technology is a medium for students to find resources references and explore the knowledge and information they need (Ajizah & Munawir, 2021). The world of education is very complete with the use of ICT to support all academics get information, and the most up-to-date literacy (Pertiwi et.al., 2022). Many online-based applications that offer a variety of information easily accessed by students, such as online newspapers, e-books, and scientific articles where all of that can help the participant's learning process educate. Technology makes it easy to acquire information, such as finishing assignments and debating student content on search engines, which can make challenging learning easier. Students and lecturers/teachers use search engines to better communicate current content.

Technology connects students with so many sources of information through Internet media. In the past, without modern technology, you would need to spend hours finding the topic you wanted to study. Plus, you spend most of your energy finding topics that make the learning process slower. With modern technology, especially digital technology, and the internet, you can find everything you need in seconds. Thus, we save more energy and time to do additional things. We can focus our time and energy on learning and understanding topics. Apart from that, we can also access various sources easily. We could even say, with technology, we never run out of information and resources. Most of these textbooks are now online. Organizational platforms enhance learning with e-books and other technology. With the existence of ICT especially the internet which is developing very rapidly, then anyone will be able to obtain information easily. Access to this

information can be done anytime and anywhere. This will assist individuals in increasing information and the knowledge they have (Syahidi & Asri, 2022). When students feel curious and want to dig deeper into learning material, they do not have to worry about having trouble finding material sources. This is because all kinds of knowledge and issues can be easily traced through search engines like Google. There have been many educational websites that have sprung up and provide many choices of material that are discussed in depth. Not only limited the website but there is also a choice of learning applications or online tutoring that can be used by students who feel that the learning material from the teacher is still lacking. This further proves that the opportunity to explore learning materials and gain new knowledge is increasingly unlimited thanks to technology such as the internet.

Teaching and learning activities in Indonesia have been supported more by books or other media, most of which are textual. However, with the presence of technology in the world of education in Indonesia, the learning media that can be used by students is becoming more diverse. For example, with the existence of learning media such as audio and video together with the presence of computer technology, smartphones, and tablets. Many developers or developers are also increasingly interested in developing learning technology through software and mobile applications. Like the online tutoring application which provides a new way of learning for students. This makes the world of education get better learning support and can even support remote teaching and learning activities.

Utilizing ICT-based learning media is difficult. To utilize the media to its fullest extent without deviating from its intended purpose, it is necessary to adhere to some techniques when utilizing it (Wartana & Ardita, 2021). As a result of the use of technology in education is access to more interesting learning materials. Many students may feel lazy to study because of the large amount of material that must be studied. In addition, learning material delivered in an unattractive manner also makes students' interest low. With the help of technology in the world of education, this problem can slowly be overcome. The more interesting learning materials, of course, will also increase the desire of students to explore a material. That way, slowly the problem of low interest in learning will be resolved little by little. With the existence of information and communication technology and the internet, educators and their students can access all information relating to learning materials (Wahyuni & Ridha, 2021). Educators can help students to provide resources and information related to the material being taught.

3. Changing learning styles and teaching activities are not monotonous

Educators and students can also benefit from using technology. For educators, the presence of educational technology helps teachers to prepare learning materials that are anti-mainstream or monotonous. This will also be useful for attracting students' interest in learning something material. For example, when learning materials are wrapped using videos or other interactive media, it will be easier for teachers to attract students' attention and make them more focused on learning. However, in this case, the creativity of educators is also needed to present learning materials that are more interesting and not monotonous for their students. Multimedia-based teaching systems (technology involving text, images, sound, and video) can make the presentation of a topic of discussion interesting, not monotonous, and easy to digest (Wahyudin & Fadhli, 2022).

4. Making teaching and learning activities more flexible

Advances in technology applied in the world of education can help the learning process become more flexible. One form of technological advancement is the Internet which can help learning activities become more flexible. Educators and students can carry out teaching and learning activities online or online, making them more flexible and not limited in time. Before the learning process of learning and teaching face-to-face, now there is no need to do that anymore. Students and teachers can carry out learning activities online. So, the learning and teaching process by using online students and teachers made it easy, and time efficient (Veronica, 2022). It is undeniable that technology-based learning is more sophisticated it also has weaknesses, one of them Internet Network. Teachers and students are required to follow technological developments, to learn and teach more optimally. The benefits of this technology have also helped educators and students a lot during the Covid-19 pandemic ago. As the impact of internet technology, as long as teaching and learning activities are restricted during the Covid-19 period, teaching and learning activities can continue. You can imagine that when technology was not as sophisticated as it is today, teaching and learning activities during Covid-19 would experience problems.

ICT competence plays a role in the interaction and communication process during the learning process at a higher level (Setianto, 2021). ICT competence plays a role in the interaction and communication process during the learning process at a higher level (Setianto, 2021). Even if they are in various locations and separated by great distances, instructors and students who utilize ICT engage in interactions while learning. Teachers

and learners can collaborate and communicate online utilizing digital technology and ICT abilities. During the Covid-19 pandemic, interaction, communication, and collaboration in learning can be conducted via email, messaging functions on various social networks, and video conferencing platforms, among others. During a pandemic, ICT skills support distance learning by facilitating access to information and information management Covid19 (Fitria, 2020).

The existence of application of e-learning learning systems in the teaching and learning process with the help of sophisticated technology (Hakim, 2021). This is an educational concept that utilizes information and communication technology in teaching and learning activities. E-learning is a process of learning to teach by utilizing technology and up-to-date information (platform) both face-to-face directly or remotely (online) to create effective learning (Syamsuri et.al., 2023). Learners can interact with educators or teachers or with participants and other students without having to attend class (Purwantoro et.al., 2023). Material online learning makes it accessible to anyone material without being limited by distance and time.

5. Changing the teacher's learning style

Conventional learning methods require students or students to meet face-to-face with the teacher to obtain learning material. In the modern era, methods like this are becoming less relevant and ineffective. In modern education, it is necessary to have information technology interventions to support the implementation of learning activities both at the school and tertiary levels. In the era of globalization, education needs to adapt to changing mindsets and needs that are fast-paced, practical, and precise. The presence of information technology can serve these needs. With the support of IT, students can access information widely through the use of technology, especially the Internet. The interaction between students and teachers becomes more flexible and flexible. Information technology acts as a learning aid through various modern means of communication. For example computers, cell phones, electronic mail (e-mail), online learning software, and so on. This means that IT support provides an opportunity for teachers to continue providing learning without having to meet face-to-face with their students. Likewise, students can obtain materials, information, and references from a wider range. The presence of Internet technology also makes the implementation of the education system easier and more practical. This can be seen from the development of cyber teaching methods, aka virtual learning that utilizes the

internet. Broadly speaking, the role of information technology, especially for modern education includes facilities that help and complement the teaching and learning process in a practical and modern way. Information and communication technology acts as a vehicle for learning to convey educational material quickly, precisely, and efficiently. Tools that help retrieve, process, store, and present data quickly, precisely, and efficiently.

6. Allows teachers to use or create interesting media to teach students

Learning technology refers to an application or medium that has been designed in a contemporary manner and is used as a resource for theory and practice in learning. Currently, the most prevalent technology in education is information technology. The existence of information used for learning media can have a positive effect on students, namely making it easier for them to locate necessary information during the learning process. Each school can be equipped with computers and the internet as a form of media. With the integration of technology into education, instructors can now incorporate images, videos, and other visuals into their teachings. Certain websites, applications, and programs will also enable teachers to vary their instructional methods. This creates an engaging environment for learning and increases interest in education. Relations between information and communication technology cannot be separated, especially in the learning process. Learning is the process of processing information from designing, processing, receiving, translating, storing, and disseminating messages. The learning process will be effective if the application of information technology and Communication is developed according to the needs and abilities of learners. In this case, one of the supporting factors is the packaging of learning models that involve information technology and communication (Darmawan, 2017).

7. Having the potential to reduce the price of textbooks and education costs

With more readily available and abundant resources, textbook costs may decline. It is also conceivable that, if textbooks are converted to digital format, students will no longer need to purchase them. The physical books can be kept in the classroom, while the contents are stored on the computers of the students. If students learn online rather than in a classroom, tuition costs will also be reduced. By eradicating factors that contribute to higher education costs, such as electricity expenditures and teacher transportation allowances, the overall cost of education will be reduced.

8. Increasing student learning interest and motivating students to learn

Overall, the benefits of technology for education in Indonesia have a great impact on students' interest in learning. The existence of interactive learning methods, learning materials that can be accessed anytime and anywhere, as well as other benefits will more or less encourage students to be more active in learning. Students can learn through books, tutoring applications, websites that provide learning materials, or other media. So, the presence of technology that provides many conveniences can be a driving factor for no longer being lazy or reluctant in learning. So, those are some of the benefits that can be obtained by the world of education in Indonesia with the use of technology. The seven benefits above show that technology does have a sizable positive impact on Indonesian education. The presence of technology is expected to be able to improve the quality of Indonesian education to be better and more advanced.

The development of information technology and communication can provide a stimulus to students to be active in learning (Syaifulloh et.al., 2021). Because of various benefits of the advancement of communication media for education. This development has altered the paradigm of society in searching and acquiring information, which is no longer limited to print and electronic media information; rather, these sources of information are now accessible via the internet network.

Challenges of Information and Communication Technology (ICT) in English Language Teaching (ELT)

A challenge is a 'business' that has a goal. These challenges cover various aspects of life, for example, in education especially ICT (Tijan & Sugimin, 2019). Development of information technology and rapid communication results in inequality if not balanced with the knowledge and understanding of each individual both teachers and students about the latest technology. In addition to knowledge of information and communication technology, understanding is also needed about it. The goal is that each individual, both teachers, and students, can take advantage of technological and information developments in an effective way wisely. If we do not apply knowledge of technological developments wisely it can affect its users.

Improving the quality of education in Indonesia is complicated by the fact that not everyone is proficient with technology. As both a means and a source of learning for

students, the application of technology can facilitate the educational process. For government-issued laws and regulations regarding the use of technology in learning, education must evolve with the times and technology (Ferdiansyah et.al., 2022).

Lapisa et.al. (2019) describes the implementation of ICTs in the learning process has not been optimal. This is due to instructors' lack of knowledge in the field of information and communication technology. Moreover, the absence of ICT infrastructure in schools retards the development of ICT-based learning models. To enable the creation of an ICT-based learning model, it is necessary to implement extensive enhancements. There are several challenges of ICT as follows: 1) The emergence of various disturbances. When we have access to many sources on the internet to find the information we want to study, we can sometimes find ourselves accessing other unnecessary sources as well. 2) Growing a lazy mindset. The ease of access to all kinds of information that technology has brought to the education system has the risk of creating a lazy mindset in students. We do not go out of their class and are busy with their gadgets. While the real subject of their research lies out there, in the real world. If a student continues to use this method, they will have the mindset that they don't need to experience it firsthand to find what they need. They just need to use the internet to find the information they need. Whereas the truth experienced directly will give us much more information than using text as your source. 3) Requires expensive costs. If educational institutions want to keep updating their technology systems with the latest and better systems, the costs they need to spend are not small. This can also affect the cost of education. We can easily find many schools or colleges with high fees or even additional fees, to provide them with the latest technology for learning. Costs are getting higher because of the rapid growth of technology. We can easily discover new technologies every year and even every month. To keep technology in education going with rapid growth, more costs are needed. 4) Limitations of social interaction. Technology can reduce social interaction between students and teachers. Physical and social interactions are very important in forming social skills and communication skills. 5) Difficulty in understanding. Students can experience difficulty in understanding learning materials in digital form. Some students may require direct teaching from the teacher in overcoming these difficulties. 6) Dependence on technology. Too much dependence on technology in learning can make students lose the ability to solve problems and overcome challenges without the help of technology. 7) Distracts students. Technology is addicting

like alcohol, narcotics, and other crimes. Students may utilize online features other than learning. To use technology for learning, these issues must be addressed with defined rules. 8) Can isolate students. Online and in-person interactions are different. When anonymous, people lose their filters on their speech and behavior. That's why classrooms need technology. It is not enough to teach students. Helps to cheat. Technology simplifies communication. Communication ease increases fraud risk. If the teacher doesn't control student computer use, one group email can share exam or test answers. Giving separate tasks solves this issue. Thinking instead of memorizing lowers cheating.

The application of ICT in the field of education in Indonesia is still in its early stages and still is not fully utilized. (Pruwodidodo et.al., 2023) states that barriers and problems in the application of ICT in education are partly due to the uneven distribution of infrastructure that supports the application of technology across schools in Indonesia and the unpreparedness of Human Resources (HR) in supporting the application of ICT in schools. Not evenly distributed supporting infrastructure application of ICT in education, is an initial problem that must be resolved immediately by the parties' Authorities. This statement is similar to Sawitri et.al. (2019) that Indonesia is still using ICT in education at a low level). Constraints to ICT use in education include: If there is no infrastructure to enable the use of ICT in education, it will just be a fantasy. The parties' authority must address this issue promptly. Infrastructure is crucial for initial capital and ICT in education. Currently, only select people have ICT access. When the location has superior human resources. Unprepared source human resources to use ICT in learning must also be addressed. Unprepared. Habitual unfinished learning recognizes ICT's role in improving learning quality. Even though the facilities and equipment enable ICT, they are pleased with teacher-provided material and don't wish to seek the Internet for further knowledge.

The schools or institutions involved in ICT-based education must increase the use of ICT for learning, requires a strong commitment of teachers, and strong schools, which can be seen from infrastructure support, learning support content, accelerated mastery support ICT among educators, and support administrative staff of the school (Khotimah et.al., 2019). Need supporting infrastructure such as ICT-based education center division, either at the provincial, district and also the level administrator at school, for Organize system implementation ICT-based education. The increasing need to share information and knowledge by utilizing ICT, as well as the development of the internet, eliminates regional

and time boundaries for communication and access to information (Ali, 2017). The conditions above require the enactment of policies in the ICT field.

Currently, setting up all education systems aimed at maximizing the capabilities of the millennial generation cannot be separated from the equipment latest technology (Akbar & Noviani, 2019). Therefore the solution in the field of education related to challenges in the era of the industrial revolution 4 will always be related to the resource readiness of human beings and infrastructure as users of ICT. Likewise in learning, involving, and effectively teaching millennial students To be effective, the school system must be equipped with the necessary human resource requirements and have the ability related to the use of technological equipment. That ability is referred to as the ability to use ICT to be able to accompany and teach students by utilizing ICT. Having ICT skills must also be accompanied by the understanding that ICT is to be utilized in obtaining learning outcomes positive.

Various opportunities are available for teachers to be able to utilize ICT in learning activities (Siahaan, 2015). The problem is how far each teacher responds to the opportunities that exist, whether to seize the opportunities that exist and then take advantage of them or let those opportunities be missed in vain. When the teacher does nothing and lets the opportunities pass, this indicates that there are obstacles/obstacles faced by the teacher. While, (Bingimlas, 2009) identifies that obstacles/barriers can occur at (1) the teacher's level, and (2) the institutional or school level where the teacher carries out his duties. It was further stated that the obstacles/obstacles that will be described below may occur, both at the teacher level and at the school level. The constraints/obstacles referred to above include (1) limitations in the field of access, (2) reluctance/refusal (resistance) to make changes in carrying out learning activities, (3) limited time available to make various preparations for the use of ICT for learning activities, (4) limitations in terms of self-potential development through training in the field of using ICT for learning, and (5) limitations in technical support in terms of using ICT.

Pruwodidodo et.al. (2023) state the barriers and problems in the application of ICT in education such as in language teaching are partly due to the uneven distribution of infrastructure that supports the application of technology across schools in Indonesia and the unpreparedness of Human Resources (HR) in supporting the application of ICT in schools. Not evenly distributed supporting infrastructure application of ICT in education,

is an initial problem that must be resolved immediately by the parties' Authorities. While Marwa & Andriani (2023) describe the obstacles and challenges from the use of ICT faced by teachers in this study were the problems of availability of facilities, time, leadership support, and lack of ability to use ICT tools. This problem occurs because of the lack of access to ICT in schools, lack of support from school leaders, inadequate teaching time when using ICT to achieve teaching and learning goals, and ICT devices in schools that are left for granted and rarely used by teachers. Constraints like this can be related to what has been found by previous researchers several factors can affect the integration of ICT in classroom learning. The results of the study show that the main obstacle in the process of using ICT depends on the perception of the teacher as the party who uses ICT to change teaching and learning situations for the better. Opportunities for teachers to utilize ICT in learning activities are increasingly wide open, both in terms of the availability and affordability of ICT equipment procurement and increasing the potential of teachers in the field of using ICT in learning activities. Then, the obstacles/obstacles which are also challenges for teachers in the use of ICT for learning can be concluded to be those that come from within (internal) and from outside the teacher (external).

Conclusion

Educators have opportunities and challenges in adopting the use of ICT in the classroom. The analysis shows that the development of ICT requires educators both teachers and lecturers to adapt to the technology. Opportunities for teachers to use ICT in learning activities are expanding, both in terms of the accessibility and affordability of ICT apparatus acquisition and the expansion of teachers' potential in the field of ICT use in learning activities. The constraints/obstacles that also pose challenges for instructors in their use of ICT for learning can be categorized as internal and external. Improving the quality of education in Indonesia is complicated by the fact that not everyone is proficient with technology. As both a means and a source of learning for students, the application of technology can facilitate the educational process. For government-issued laws and regulations governing the use of technology in education, education must evolve with the times and technology.

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