

ADAPTATION OF ICT LEARNING IN THE 2013 CURRICULUM IN IMPROVING UNDERSTANDING STUDENT'S OF DIGITAL LITERACY

Dessy Putri Wahyuningtyas^{1*}, Nanny Mayasari², Siti Rohmah³, Erwinsyah Satria⁴, Rinovian Rais⁵

Universitas Islam Negeri Maulana Malik Ibrahim^{1*}, Universitas Nusa Cendana², Institut Ilmu Al-Qur'an (IIQ) Jakarta³, Universitas Bung Hatta⁴, Universitas Indraprasta PGRI⁵
dessyputriwahyuningtyas@uin-malang.ac.id, nanny.mayasari@gmail.com, lilikaziz71@gmail.com, erwinsyah.satria@bunghatta.ac.id, rinovian.rais@unindra.ac.id

ABSTRACT

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The growth of information and communication technology (ICT) has a substantial positive impact on education. There is a technology disruption that creates changes and new discoveries due to technological affluence, so bringing about changes in education, particularly in the adaptation of the school's learning curriculum. ICT learning in curriculum 2013 has a favorable effect on ICT learning. In addition to boosting students' ability to comprehend and implement digital literacy, it is possible to express that the predicted benefits would also increase students' character education in preparation for the digital era. This study intends to assess the adaption of ICT learning in the 2013 curriculum, taking into account both the good and negative effects of technology on education, as well as the resources available to schools for implementing ICT learning. Become a proposal for the integration of ICT into the education system and schools, comprised of emerging, applying, integrating, and changing stages. So that it can serve as a model for applying ICT to improve student competence in utilizing information technology devices, as students require comprehension and digital literacy abilities in order to acquire improved competencies. According to the 2013 curriculum, it is anticipated that student competencies, particularly those linked to digital literacy competencies, will enhance as a result of this research.

Keywords: ICT Learning, Adaptation Technology, Digital Literacy, Student Knowledge

1. INTRODUCTION

Education is a crucial aspect that has benefited from the advancement of information technology. Due to technical advancement, there is a technological disruption that produces changes and new discoveries [1]. In the subject of education today, the use of technology as a medium in the classroom is essential for supporting and enhancing students' comprehension of the offered material. Information and Communication Technology (ICT) education is one form of technology application in education; it is a science that stresses direct observation and experience and is intended to encourage students to take an active role in learning so that it can be enjoyable[2]. Unquestionably, Information and Communication Technology (ICT) has the capacity to aid in the resolution of educational issues, particularly in the areas of administration and instruction. Specifically for learning, ICT can be used to transform the abstract into the concrete. It is anticipated that the presence of ICT will enhance the quality of learning. So that the function of information and communication technology in Indonesia's educational curriculum can support learning.

In Indonesia, there have been several changes to the school curriculum, which is now the 2013 curriculum. Information and communication technology classes are no longer part of the curriculum



for 2013[3]. Information and Communication Technology doesn't become a subject, but it does become a part of learning all subjects. This is called ICT-based learning, and it happens most often in schools and classrooms with enough educational resources and teachers who know how to use them. Curriculum 2013 is different from the old curriculum in ways that affect how students learn and how teachers teach. Teachers, who are in charge of putting the new 2013 curriculum into place in schools, must change to meet the new requirements. By using information and communication technology to help students learn, teachers need to try new things and make changes.

It is anticipated that Information and Communication Technology would enhance the quality of education. However, the process of adapting ICT-based learning to the 2013 curriculum is not simple, as ICT-based learning can only be used best in schools with suitable facilities, and instructors are one of the most essential aspects in the application of ICT-based learning. Educators must also be proficient in the operation of a variety of ICT-based devices, in addition to the equipment utilized for instruction. Various problems in the adaptation of ICT-based learning in the 2013 curriculum have been presented in research [4] about the importance of teacher readiness and school support in implementing the 2013 curriculum; other studies explain that the obstacles for teachers in ICT learning are at the planning, implementation, and evaluation stages of learning [5]; and yet another study [6] explains that the barriers for teachers in ICT learning are at the planning, implementation, and evaluation stages of learning. Not all instructors have competence in ICT learning, but curriculum 13 mandates that, in addition to mastering subjects that teach science to students based on their areas of expertise, teachers must also be able to instruct students in relation to ICT. If the teacher is unable to be the leader in the application of ICT learning, then students' comprehension of information and communication technology is poor, and this has an effect on the development of students' digital literacy. As we are aware, the use of technology is restricted to self-gratification and playtime with children[7]. Due to the fact that the education sector is one of the pillars of the national strategy in the government's program, increasing competitiveness in the field of education, particularly early childhood education, can be carried out and developed in a stimulative and integrated manner with the transfer of digital literacy knowledge[8].

Students' inability to follow changes in information and communication technology may be hampered by their lack of awareness of digital literacy, which may also contribute to a reduction in students' skill levels. Students who are not only able to use technological platforms but also have abilities in communication and socialization are said to have a digital literacy. Digital literacy is both an ability and a talent. In order for it to be possible for it to be realized at the school level so that it may adapt ICT learning according to the curriculum in 2013 in an effort to develop students' grasp of basic technology platforms in order to increase students' knowledge and abilities. The application of information and communications technology has a beneficial effect on enhancing students' levels of comprehension and can inspire students to continue their education.

This study aims to analyze the adaption of ICT learning in the 2013 curriculum, taking into account the positive and negative effects of technology on learning as well as the school's resources for implementing ICT learning. In the proposed paradigm for the integration of ICT into the education system and schools[9], there are four stages: emergence, application, infusion, and transformation. So that it can serve as a model for implementing ICT in training students and adding insight, conveying more information about the integration of ICT in education, and increasing student competence in using information technology devices, because students require comprehension and digital literacy skills in order to acquire better competencies. According to the 2013 curriculum, it is anticipated that student competencies, particularly those linked to digital literacy competencies, will enhance as a result of this research.

2. METHOD

2.1 Education in the Digital Age



In this age of digital technology, the changes that occur can have a significant effect on many facets of human existence, including the field of education. Because of the COVID-19 pandemic, schools are forced to participate in learning activities that are centered on digital platforms. This can become a new habit in learning activities and indirectly stimulate higher quality learning through the implementation of new learning patterns, namely activities based on digital learning [10]. In a similar vein, the progression of information technology has an impact on the field of education. Literacy is essential in today's world, particularly in light of the Fourth Industrial Revolution, which necessitates proficiency in three primary areas: data literacy, social literacy, and technical literacy. Learning activities can be carried out by employing hybrid or blended learning as well as case-based learning [11]. This is possible if one follows the trend of the current era. The fourth industrial revolution has brought about significant shifts in many aspects of the educational landscape. Because of its emphasis on development and educational skills, future learning activities will be more individualized as a result. Therefore, in order to produce high-quality students, professional instructors also need to be adequately prepared [12] [13].

2.2 Digital Literacy

The ability to use a device from technology, information, and communication is only one component of digital literacy; it also involves the ability to learn to socialize, as well as the ability to think critically, creatively, and inspiringly in the context of digital competition[14]. Digital literacy is an ability (life skills) that involves all of these components. Students are going to need to have skills in digital in order to be successful in the 21st century[15].

2.3 Information and Communication Technology (ICT)

ICT comprises two concepts: information technology and communication technology. Information technology is a technology used to process data, including processing, obtaining, compiling, storing, and manipulating data in a variety of ways to produce quality information, namely information that is relevant, accurate, and timely, used for personal, business, and governance purposes, and is strategic information for decision making[16]. The ICT integration model in the education system and schools divides the application of ICT in education into four stages. These four stages, which UNESCO labels Emerging, Applying, Infusing, and Transforming, are continuum stages[17][18].

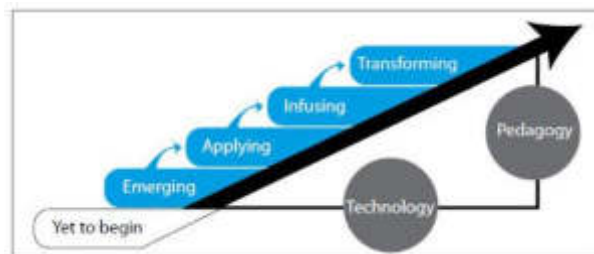


Figure 1. Stages of ICT Implementation in Education [19]

Figure 1 can be explained as follows: technology refers to all scopes of ICT, and pedagogy is the art and science of teaching; there are several stages: 1) at the emerging stage, they have just realized the importance of information technology for learning but have not yet attempted to apply it [19]; 2) at the applying stage, information technology has been used as an object to be studied (subject); and 3) at the infusion stage, information technology has been infused into the curriculum 2013. In Indonesia, the integration of information technology is still in its infancy. This is shown by the need that teachers use technology in the classroom. In addition to addressing the technical challenges of learning as a learning medium, the use of information technology also addresses the

substantive problems of learning as a teaching resource. The acceleration of digital literacy in Indonesian society is another effect

3. RESULTS AND DISCUSSION

3.1 The role of teachers and students in adapting ICT learning

The judicious application of emerging technologies in education should result in beneficial outcomes. The lack of awareness and competence on the part of teachers to make good use of ICT in the classroom is the primary obstacle facing the implementation of ICT in education. The type of learner, the subject they are studying, and the learning goals they have set will determine which forms of information and communication technology are utilized. ICTs offer a rapidly expanding and engaging learning environment, blurring the lines between formal and informal education and engaging teachers to develop new ways of teaching and enabling students to learn[20]. They also blur the lines between what is considered to be "education" and what is considered to be "information." As a result, the roles that both students and teachers play in the classroom have evolved in response to adjustments made to the curriculum and the integration of ICT[9] [19][21].

The Teacher's role in ICT learning

- a. In the teaching and learning process in the classroom, the teacher functions as a knowledge-transferring agent and a key source of information. In the 2013 curriculum, the role of the teacher has shifted to that of a learning facilitator, collaborator, trainer, knowledge navigator, and student partner.
- b. All parts of learning are managed and guided by the teacher, who also gives pupils more freedom and accountability for self-directed learning.

The Student's role in ICT learning

- a. Information consumers shift from observers to participants in the educational process (student center learning)
- b. subjects in recognizing the knowledge gained via education as their own activities in creating this knowledge with other students.

3.2 ICT Learning Difficulties and Advantages

The application of information and communications technology in educational settings presents a plethora of possibilities and advantages. The ability of information and communications technology to reach students wherever they are and at any time ushers in a fundamental shift in the conventional educational paradigm by disproving the assumption that study time is equivalent to classroom time[9] [19][21].

Table 1. The Possibilities and Gains That Can Be Obtained From Utilizing ICT in Education [19]

Benefit	Opportunity
Access to high quality learning materials from remote locations	Access to high quality learning materials from remote locations
Learning materials are developed anywhere and can be accessed by students anywhere	Learning materials are developed anywhere and can be accessed by students anywhere
Opening connectivity between students Free flow of information within and between groups of students	Opening connectivity between students Free flow of information within and between groups of students
Interactive learning goes beyond the limitations of simple access to information	Interactive learning goes beyond the limitations of simple access to information
ICT networks enable interaction between students, with teachers, and the development	ICT networks enable interaction between students, with teachers, and the development



of learning programs
 Flexible learning activities that are comfortable for students Eliminate time constraints on learning allow different levels of progress
 Removing spatial constraints in the learning environment Reducing physical constraints on access to learning, minimizing travel and living costs, and distance are no longer determinants of marginalization
 Development of intermediary services to support learning Use of a network of teachers and advisors to structure processes and distribute ideas and materials to a wider audience
 Learning management can display a wealth of data on data about student learning progress and performance Interactive systems can generate formative data on learning progress and link to adaptive learning according to student needs
 Assessment and certification can be administered using ICT Assessment and certification can be carried out online with the possibility to reduce costs, increase security and standardize assessment tasks
 Education service providers can use ICTs to improve efficiency, service delivery, and reduce costs Financial, administrative and resource management systems can use ICT-generated data at various levels of analysis to improve services

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Table 1 shows that adapting to ICT in learning has both good and bad effects. This is expected to lead to a knowledge-based society where growth, development, and innovation are driven by the best use of information technology. Another common benefit is that educating people about values builds virtue, character, and a sense of purpose in life. At school, our kids learn about their own values and the values of other people. So, based on the positive effects of ICT learning, it can be said that the expected benefits include not only making it easier for students to understand and use digital literacy, but also giving them a better idea of how to act in the digital age[22].

3.3 ICT adaptation stages

At this point, it can be shown how well the research fits with the stages of putting ICT to use in education shown in Figure 1. So that the results and discussion can be broken up into different parts, such as:

1. Emerging Stage

At this stage, this is accomplished by transferring knowledge to students about the significance of digital literacy, particularly in the implementation of ICT in the learning process, as well as knowledge about applications that can support the student's process of learning basic computers, such as Microsoft Word and others, so that students can maximize the capabilities of laptop devices in



implementing computer skills. ICT-driven. At this first stage the school prepares ICT infrastructure, both in the form of hardware and software.

2. Applying Stage

At this point, there have been contributions made and efforts made to implement ICT in the framework of educational administration and instruction. ICT has been utilized by educators and educators for completing work connected to the management of schools as well as tasks based on the curriculum. The presentation of the material has been modified so that it better aligns with the learning materials required by the curriculum for 2013. Additionally, schools have made efforts to modify their curricula in order to increase their use of information and communication technology (ICT) in a variety of topics by utilizing specific software. It is still challenging for teachers to fulfill their responsibilities by making use of information and communication technology (ICT) due to a combination of reasons, including a lack of understanding and age-related barriers that prevent teachers from learning.

3. Infusing Stage

It is envisaged that students will be able to complete the school curriculum with the use of ICT, particularly in ICT learning, which comprises objectives and content, learning activities, exercises, assessments, and learning outcomes. Therefore, it can serve as a catalyst for technology-based learning techniques used in schools, such as e-teacher, e-test, e-library, e-assignment, e-education, and e-learning. Even rural places may use communication tools like WhatsApp to impart education. The use of ICT for education can also benefit from autonomous learning materials like interactive CDs, interactive multimedia[23], and learning materials with animation. In order for them to interact with or use the learning media packages as teaching tools. Information technology can be applied to learning resources based on linked information technology as learning resources (learning resources) from the internet with all of its components. One such example is the use of computer software for learning. The efficacy and flexibility of learning can both be increased, which are two of the many benefits that can be attained through the use of e-learning. Learning can be done anytime, anyplace, and without regard to place or time, thanks to e-learning. The use of e-learning in schools can offer a wide range of learning opportunities, boost interest in learning and the development of ICT skills[20], and prepare future teachers to be adept at utilizing technology in learning that will be helpful when they are teachers in the future. Sometimes, having strong cognitive abilities is not enough to become a professional teacher; you also need to have particular skills, like those in ICT. Online journals, libraries, and courses are just a few examples of the various sources of information that are accessible online and can be used effectively[24].

4. Transforming Stage

At the stage of transformation, it is envisaged that the utilization of ICT would hasten and make it easier for the learning process to take place in the classroom, both on the part of the instructor and of the students. Massive technological advancements do not necessarily place limitations on students' use of technology; however, with direction that is adapted to the requirements of applications used in learning, the incorporation of ICT in educational settings can become a model for enhancing students' understanding of how to make effective use of technology and deepening their comprehension of digital literacy. At this point, the institution is making an attempt to organize and restructure its operations in a way that is more imaginative. At my school, using computers and other forms of digital technology has become into a routine aspect of both my personal and professional life. The use of information and communications technology (ICT) as a tool that is consistently utilized to support learning in such a way that it is fully integrated in all learning that takes place in the classroom. The student is put at the center of the curriculum, and connections are made between the many topics and the outside world.



4. CONCLUSION

Information and communication technology (ICT) has been included into the process of producing communicable and high-quality information; in education, ICT has been applied to the learning process. What must be emphasized is that the adaptation of ICT in the 2013 curriculum is extremely important because all ICT-based learning, the challenges of ICT adaptation in remote areas with limited infrastructure, and technologically literate resources require special attention from each and every educator. The role of the teacher in the implementation of ICT learning in the 2013 curriculum has shifted from that of a source of knowledge transfer to that of a learning facilitator, collaborator, trainer, knowledge navigator, and student partner in the improvement of ICT skills in everyday life in order to improve digital literacy.

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