

The urgency of information and communication technology in MI/SD learning

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Abstract

The application of ICT in the learning process greatly affects students' interest in learning, because students get new experiences. For example learning by using computers and projectors, students will be more active and will observe learning carefully. Compared to learning without using technology, students will feel bored if they only listen to the teacher delivering material using only the whiteboard media. Learning through the internet (e-learning) does not require physical needs such as classrooms, teachers and students are facilitated because they can carry out the teaching and learning process anywhere and anytime even remotely. This can be useful for students and teachers who don't have much time to come to schools and classrooms. Not only that, learning through the internet (e-learning) can make students learn independently, so that students have free time to hone skills other than learning done at school. The application of technology in the form of an LCD projector can make it easier for students to receive learning materials because students are actively involved in the learning process. Using an LCD projector can also increase students' interest in learning so that the learning process is more interesting and fun for students. Arie Kurniawan said that during the learning process that utilizes ICT students have high learning inspiration compared to people who do not use ICT because students show positive reactions when using ICT in the learning system.

Keywords: ICT, MI learning, interest in learning

Introduction

The development of information and communication technology (ICT) in the last few decades is running very fast. Various supporting applications have been developed as an effort to facilitate the activities of human life. ICT has made various types of media connected into a single unit, such as television, radio, cameras, telephones, mobile phones, and computer networks (Bourgeois-Bougrine, Latorre, & Mourey, 2018; Mayer & Oosthuizen, 2020; Mitcheltree, 2021). Some brands have even produced media by combining several media devices in one system, for example the Samsung Galaxy and Apple's i-Phone. Information and Communication Technology (ICT) is a very important thing to master in the current era of globalization. Information and Communication Technology (ICT) is a variety of aspects involving technology, engineering and management techniques used in the control and processing of information and its use, computers and machines (computers) and human relations, and matters relating to social, economic and cultural . . . (Bourgeois-Bougrine et al., 2018; Ruggiero & Green, 2017). In this modern

era the internet is a necessity for anyone. Both play a dominant role in students' lives. Students can feel the many benefits of using ICT in learning

The presence of ICT in learning does not provide any other choice but to take advantage of it. Therefore, in 2006 the Ministry of National Education made ICT policies to be included in the curriculum as stipulated in the Regulation of the Minister of National Education of the Republic of Indonesia Number 22 of 2006 concerning Standards of Content for Elementary and Secondary Education (Permendiknas RI No. 22 of 2006). In the world of education, the existence of information and communication systems is one component that cannot be separated from educational activities. This fact encourages the author's desire to reveal more about ICT (Information and Communications technology) in the world of education. (Liu & Butzlaff, 2021; Sharov, Liapunova, & Sharova, 2019) Information and communication technology is also very possible to be used in Madrasahs, resulting in the concept of e-madrasah. The integration of information and communication technology in education in madrasahs improves the quality of education in madrasahs and facilitates da'wah. Impact the integration of information and communication technology in education is to encourage the acceleration of computer literacy in Indonesian society.

ICT in learning is very important for schools and MI/SD students for that this ICT program regulates and implements the interaction of the educational process. ICT in learning has the potential to empower students, namely encouraging the growth of learning skills (learning to learn), higher order thinking skills, written and oral communication skills, and skills in finding various learning resources (Aluri & Fraser, 2019; Baxter, 2019). , & John, 2021; Lim & Plucker, 2001; Morgan, Farkas, & Wu, 2011). In particular, ICT in learning can be used as a learning interaction tool, a vehicle for providing learning materials, accommodating student learning outcomes, and communicating (between students, teachers and students, students with various learning resources), as well as for the professional development of teachers.

Technology in education is very important to create a sense of enthusiasm for students in learning. In fact, the use of technology in education can also increase student interest in learning, because in this case students do not feel bored when participating in learning. Thus, educational technology can facilitate the learning process that is being applied.

Discussion

Information and communication technology

Technology comes from the Greek, namely Technologia according to the Webster Dictionary which means systematic treatment or handling of something systematically, while techne as the basis of the word technology means skill, knowledge or expertise, skill, knowledge. Technology is knowledge aimed at creating tools, processing actions, and extracting objects. The term "technology" is widely known and everyone has their own way of understanding the meaning of technology (Ade Kusnandar, 2008). Technology is used to solve various problems in our daily life, in short; we can describe technology as a product, process, or organization (Luik & Lepp, 2021; Lyons, Lobczowski, Greene, Whitley, & McLaughlin, 2021; Mayer & Oosthuizen, 2020; Perignat & Katz-Buonincontro, 2019). Moreover, technology is used to expand our capabilities, and it makes people the most important part of any technological system. Meanwhile, what is meant by information is often equated with the meaning of data. Data is something that has not been processed and cannot be used as a solid basis for making a decision. Information is a fact or anything that can be used as input in generating information (Bereiter & Scardamalia, 1985; Mayer & Oosthuizen, 2020; Touw, Vogelaar, Thissen, Rovers, & Resing, 2019).

Communication is all the procedures by which one person's thoughts can influence another. Communication is the process by which individuals (communicators) convey messages (usually verbal) to change the behavior of other individuals. In addition, communication is also a social process in which individuals use symbols to create and interpret meaning in their environment (Ruggiero & Green, 2017; Yang, 2015). So it can be concluded that information and communication technology is the result of human engineering in the process of delivering information and the process of delivering messages

(ideas, ideas) from one party to another so that it is faster, wider in distribution, and takes longer. saved (Alene, 2020; Sharov). et al., 2019)

Functions of Information and Communication Technology in Learning

Information and Communication Technology (ICT) has three main functions used in learning activities, namely: (1) Technology functions as a tool, in this case ICT is used as a tool for users or students to assist learning, for example in word processing, processing numbers, create graphic elements, create databases, create administrative programs for students, teachers and staff, personnel data, finance and so on. (2) Technology functions as science. In this case technology as part of the discipline that must be mastered by students. For example, computer technology is studied by several majors in universities such as informatics, information management, computer science. In learning in schools according to the 2006 curriculum, there are ICT subjects as science that must be mastered by students with all competencies. (3) Technology functions as learning materials and tools (literacy). In this case, technology is interpreted as a learning material as well as a tool to master computer-assisted competencies (Luik & Lepp, 2021; Ruggiero & Green, 2017; Sharov et al., 2019). In this case the computer has programmed in such a way that students are guided in stages by using the principles of thorough learning to master competencies. In this case, the position of technology is like a teacher who functions as a facilitator, motivator, transmitter, and evaluator (Anglin, 2019; Kim & Hannafin, 2011; McCulloch, 2017).

Knowing the many roles of ICT in education will certainly be able to improve the quality of life which will have an impact on the progress of a country. ICT is also able to make learning innovative so that students are not easily bored when learning takes place when compared to learning that only relies on simple tools (Bourgeois-Bougrine et al., 2018; Hung, Chang, & Lin, 2016; Ruggiero & Hijau, 2017). Simanjuntak (2013) classifies ICT in education into 4 (four) benefit groups, namely: ICT as a storehouse of knowledge, as a learning aid, as a learning facility, and as a learning infrastructure, namely:

1. As a repository of knowledge, ICT is used as a reference for the latest knowledge, knowledge management, expert networks in various fields of science, networks between educational institutions, centers for developing teaching materials, curriculum development vehicles, and competency standards comparison communities.
2. As a learning tool, ICT can be used in the learning process, for example as a tool for teachers and students in using learning methods or resources, as a teacher-student interaction tool.
3. As a learning tool, ICT can be used as: electronic library, virtual classroom, multimedia application, multimedia theater class, distance class, school electronic board, multi-intelligence teaching tool, internet corner, and collaborative communication communication (school intranet).
4. As a learning infrastructure, ICT provides technical and applicable support for learning, both on a medium and wide scale, which includes: various distribution channel technologies, various applications and software, programming languages, database systems, personal computers, digital devices, operating systems, network systems and data communications, as well as information technology infrastructure (transmission media) (Harlen Simanjuntak, 2013).

The role of ICT in education is very important to assist teachers and students in using learning methods or resources. Not only that, ICT also plays a role in facilitating the delivery of learning materials in the form of multimedia. (PGMI VI student) Information and Communication Technology (ICT) as Media and Learning Resources at MI Utilization of ICT as a learning resource can produce extraordinary learning resources, where these learning resources can be accessed anytime and anywhere. The emergence of technology is an effort to develop the effectiveness and efficiency of learning outcomes (Lim & Plucker, 2001; Ninies Eryadini, 2021; Suryanto, Degeng, Djatmika, & Kuswandi, 2020). ICT has become an important technology for society, especially in the world of education, because it can be used as a medium and source of learning that can be reached anytime and anywhere.

The results of technology have long been used in education. The invention of paper, printing press, radio, film, TV, computers, and others was immediately used for education. In essence, these tools

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are not made specifically for educational purposes such as films, radio, TV, computers, and so on. However, these tools can be used in the world of education. Maybe it's just a "Teaching Machine" that is purposely made specifically for educational purposes. Educational technology tools can change the role of teachers. Apart from teachers, there are other learning resources. However, the role of the teacher cannot be eliminated and will always be needed.

Information technology can be a tool for driving the progress of the nation. One of the biggest impacts is development in the field of education. It is a bridge to developing countries where people can have the tools to help them grow their business and enjoy the results easily, cheaply and evenly. Something that serves as an access framework for all to navigate the 21st century (Kotler, 2003; Lim & Plucker, 2001; Ruggiero & Green, 2017). The use of ICT as a medium and source of learning is growing rapidly and is used as a form of progress for a school. Achieving the use of ICT as a medium and source of learning is highly dependent on the skills, abilities or creativity of teachers in applying ICT in the learning process (Bourgeois-Bougrine et al., 2018; Brady & O'Reilly, 2020; Mayer & Oosthuizen, 2020; McCulloch, 2017). (student of PGMI VI). Basically the influence of technology on the development of education in Indonesia is very dynamic. Technology can give a new color to teaching and learning activities in schools. And it is capable of changing the way people view ICT. Because the implementation of learning according to the 2013 curriculum at the elementary level will be easy to implement if the school provides various media related to the topics being taught. If it is not available, the teacher must find it himself. Finding teachers themselves who live in urban areas and can access material resources will be easier, but for elementary school teachers who mostly live in rural or remote areas, this is not an easy job. For this reason, it is necessary to provide knowledge about the 2013 curriculum and ICT for all elementary school teachers in Indonesia. So that elementary school teachers are accustomed to using ICT in learning, it is necessary to provide technical guidance on ICT-based learning models (e-learning). In general, e-learning has two things: first, learning using ICT and second, using ICT for learning. From this concept, teachers who do not have basic skills in using ICT tools need to be given training on how to use ICT tools, while teachers who already have skills in using ICT tools need to be given training on how to use ICT tools for learning. With e-learning, it is expected that students can deepen their knowledge, create knowledge, and share knowledge.

With ICT in the K-13 application, the implementation of learning will be a little easier because learning resources can be obtained by accessing the internet and other sophisticated applications. So the teacher is not only based on a monotonous and old-fashioned way of teaching, but with ICT-based learning it is fun (PGMI VI students). The application of learning through the internet (e-learning), is a new media that can overcome the passive attitude of students. According to Arief S. Sadiman et al., (2006:17), the use of appropriate learning media is very useful for: a. Increase enthusiasm for learning, b. Allows direct interaction, c. Enable students to study independently (Kohn & Frazer, 1986; Woods, Ahmed, Katz, & Morrison, 2019). Independent learning is a way of learning that is done by students freely determining learning goals, planning their own learning process, learning strategies independently, using learning resources of their choice, making academic decisions, and carrying out activities to achieve learning goals (Aluri & Fraser, 2019; Sol, 2020). Therefore, independent learning requires willingness, sincerity, motivation, tenacity, discipline, responsibility, and curiosity to advance and develop in science. (Marimis Yamin, 2011:107).

Learning through the internet (e-learning) does not require physical needs such as classrooms, teachers and students are facilitated because they can carry out the teaching and learning process anywhere and anytime even remotely. This can be advantageous for students and teachers who do not have much time to come to schools and classrooms (Belton, Folley, & McGown, 2021; Bourgeois-Bougrine et al., 2018; Martín-Páez, Aguilera, Perales-Palacios, & Vilchez-Gonzalez, 2019). Not only that, learning through the internet (e-learning) can make students learn independently, so that students have free time to hone skills other than learning done at school.

Therefore, the presence of ICT as a learning medium helps teachers in many ways, including:

1. Learning becomes more interesting and interactive. The use of learning media in the form of photos or videos can attract students' attention when compared to oral descriptions. Teachers can

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make various activities that vary and activate students through photos or pictures of the objects discussed.

2. Learning becomes more concrete and real. The use of learning media at the elementary school level, especially in the lower grades, is in accordance with the characteristics of students who are still in the "concrete operational" stage. With this media students will more easily learn everything that can be seen, heard, held and felt directly.
3. Learning management is more effective and efficient. With learning media, teachers can be helped not to need a lot of writing or illustrating on the blackboard. The required illustrations and writings can be fulfilled by the teacher in a timely and fast manner through the pliers available on the computer.
4. Encourage students to learn more independently. Learning media that have been specifically designed for certain learning can be used by students to study both individually and in groups.
5. Improving the quality of learning. With the learning media, the learning process becomes more effective and efficient, and can improve the overall quality of learning.
6. The learning process can be done anywhere and anytime. Audio, video, computer programs (offline and online) are learning media that can be used anywhere and anytime according to the conditions and situations of teachers and students.
7. Generating positive attitudes of students towards the learning process. The use of media designed according to student learning needs can lead to positive attitudes of students towards the teaching and learning process.

So it can be concluded that, ICT has a fairly important influence for students and teachers in the teaching and learning process so that learning objectives are achieved. Moreover, primary school students are generally aged 7-12 years, at which age students want more time to play (Pitcher et al., 2007; Woods et al., 2019). With the presence of ICT as a medium and source of learning, students become more enthusiastic in participating in the learning process because students can explore using technology freely.

ICT as Inspiration and Motivator in Learning

According to Wina Sanjaya, motivation in learning activities is a very important dynamic aspect. Motivation is a very important determining factor, thus influencing someone to do something (Aluri & Fraser, 2019; Lim & Plucker, 2001; Soleas, 2020; Woods et al., 2019). motivation is the main part in every action because without motivation, action will be empty (Yusvidha, 2017). The results of the research found by Mukaromah, that the use of ICT in the learning system can generate motivation and change students' attitudes to be more motivated in learning, with media that are able to handle the speed of learning and provide students with a more advanced experience. This finding is based on the results of interviews where most students like to learn to use information and communication technology because the use of ICT for students is interesting and not boring, for example by using an LCD projector to explain material and using the internet to complete assignments. Hasriadi; Sudirman; Arifuddin, 2021).

The application of ICT in the learning process greatly affects students' interest in learning, because students get new experiences. For example, learning by using computers and projectors, students will be more active and will observe learning carefully. Compared to learning without using technology, students will feel bored if they only listen to the teacher delivering material using only whiteboard media (Bourgeois-Bougrine et al., 2018; Frostenson & Englund, 2020; Kemmis, 2009). Arie Kurniawan said that during the learning process that utilizes ICT students have high learning inspiration compared to people who do not use ICT because students show positive reactions when using ICT in the learning system. These positive reactions include: enthusiastic, energetic, focused, high interest, and dynamic in participating in learning. This reaction is more positive than the student's reaction when following ordinary learning (Demirbilek & Talan, 2018; Naismith, Lee, & Pilkington, 2011; Ruggiero & Green, 2017). However, by using ICT in learning, all respondents stated that most students experienced an increase in learning outcomes because they were interested in learning by using data and correspondence innovation (Kurniawan, 2019).

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The results of research based on interviews show that most students like learning that utilizes Information and Communication Technology (ICT), including using LCD projectors in delivering material and using the internet in completing assignments because it is more modern, interesting and not boring. The results of observations and interviews conducted by researchers to SDN II Bataraguru teachers in utilizing ICT-based learning media in the teaching and learning process in schools have very important roles including:

1. As one of the learning facilities and infrastructure that can make it easier for students to understand the subject matter delivered by the teacher because by using ICT-based media the teacher can more easily convey the subject matter and provide a real picture and material. delivered more focus.
2. Using ICT-based learning media can help students be more focused and active in accepting the lessons delivered by the teacher.
3. The use of ICT-based media motivates students more in learning activities, this is because students become more interested and interested in learning with the material presented by the teacher or the media displayed.
4. The use of ICT-based learning media can create a pleasant learning climate and atmosphere for students because the teacher in delivering the lesson displays the material directly and provides real examples related to the material in the form of images or videos that are displayed directly on the LCD projector so that students are happy and not bored following the lesson. .
5. It has been seen that ICT-based learning media plays a very important role in increasing student learning motivation based on observations and observations made by researchers during the learning process (Irsan, 2019).

Based on the results of the interviews above, it can be concluded that the application of technology in the form of an LCD projector can make it easier for students to receive learning materials because students are actively involved in the learning process. Using an LCD projector can also increase students' interest in learning so that the learning process is more interesting and fun for students. The presence of information technology systems has changed the behavior of educators and students. Currently the process of providing education is starting to depend on digital technology systems, starting from learning in class, or completing assignments, including final exams, starting to implement digital systems. Thus, the benefits and direct impact of Digital Learning on individual users and which will then increase learning motivation. Quality digital learning media facilities can improve the quality of student learning and increase student motivation in learning activities (Bourgeois-Bougrine et al., 2018; Demir, 2018; Naismith et al., 2011; Ruggiero & Green, 2017; Touw et al., 2019). This motivation is formed because self-awareness understands how important it is to learn to develop oneself and be equipped to live a future life (Bandura, 1982; Neroni, Meijs, Gijsselaers, Kirschner, & de Groot, 2019). This can prove that ICT is very influential on students' learning motivation because students get new experiences and a pleasant learning climate so that students do not get bored easily in learning.

Conclusion

The development of technology produces various kinds of facilities, qualities and benefits offered by Digital Learning, which aims to facilitate all activities of human life in doing work and accessing various information. The use of ICT as a medium and source of learning is growing rapidly and is used as a form of progress for a school. The achievement of the use of ICT as a medium and source of learning is very dependent on the skills, abilities or creativity of teachers in applying ICT in the learning process. By utilizing Information and Communication Technology (ICT) in the learning process, even though it is only limited to media, ICT-based learning resources students do not feel bored in learning and stimulate students to be more enthusiastic in learning. In the learning process, teachers in elementary schools must be able to use technology as a skill in teaching science to students at school, with the skills possessed will make students happy in learning.

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