



EDUCATIONAL TECHNOLOGY

Application In Working
And Learning From Home

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FOREWORD

Educational technology is a process of learning and improving performance by creating and managing technological processes and resources or other adequate resources in the teaching and learning process. In the strict sense, technology is a process of interaction between educators and students both in the family, society and at school.

By the existence of the educational technology, the educational process will no longer be disrupted, due to the limitations in distance and time, for example, the process of conducting the thesis guidance can be done from a distance to make the time more efficient, thus, the revisions can be typed directly on the Ms. Word and provide comments as a result of the revision, then correct it immediately according to the guidance of the supervisor. This type of guidance methods can be an option for the supervisors who have a busy schedule and cannot conduct intensive guidance, also, this method can reduce the use of excessive paper and it can reduce the tree felling as an effort to solve the global warming. Hopefully this work can be a reference in the development of educational technology and its use in working and learning from home.

Denpasar, May 5, 2020

Author

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INTRODUCTION

Educational technology these days gives a great influence and contribution to the education world and even more affects the order of human life so that it enters the 4.0 era which is an era that the progress of technological development greatly dominates market elements and to the human life needs in particular. This era is a process that produced modernity, as expressed by M. Francis Abraham that the process of progress resulted in modernity, marked by economic growth, social mobilization, expansion, or cultural expansion (Abraham, 1991). Furthermore, M. Francis Abraham assessed that industrialization, urbanization, secularization, and advanced technology were not the basic requirements of modernity, but it was only independent gradual processes. Then, there are many understandings that rationality, universalism, equalitarianism, orientation are often regarded as a characteristic of a society that has undergone in modernization, even though all of that is only a consequence of modernization (Abraham, 1991).

Referring to what is conveyed by M. Francis Abraham, First, economic growth includes the characteristics of (1) an increase in material energy consumers; (2) high level of technology; (3) the dominant primary sectors; (4) verified production in an integrated development construction; (5) separation of work from households and increased differentiation of economic structures; and (6) the growth of specialization in the role of the economy and the unit of economic activity in the production, consumption, and marketing.

Second, social mobilization includes (1) increased participation through voluntary associations of communities and other secondary groups; (2) a large social awareness, with its efficiency and effectiveness in the progress of the transportation and communication media scope, the knowledge development and the spread of ideas; (3) psychological manipulation through the refinement of ideational skills supported by sophisticated technology, especially mass media; (4) increased social mobility, which, leads to a greater disbursement of the class structure; (5) physical mobility leads to greater urbanization; (6) great political integration through the power intensification of the state legislative, administrative and political bodies; (7) changes in scope and forms of participation specifically the extension of civil and social rights to the lower strata; (8) expansion of modern forms of consumption to the same groups; and (9) expansion of education and the sense of participation that has resulted and increased identification with the society.

Third, the most important aspects of the cultural expansion include (1) increasing the number of people's awareness to carry out the learning process; (2) shows information from the wider media (3) the expanded of entertainment places or areas, recreation, and cultural values outside the realm of family, kinship, and locality groups; (4) revaluation of indigenous institutions as well as traditional values and goals including providing alternative solutions that encourage foreign systems; and (5) forming a new institutional structure of procedures which becomes a step or method and values orientation that can face the challenges of rapid change.

The rapid development of information technology in the current globalization era cannot be avoided anymore its influence on the education world. The global demand requires the education world to always and constantly adjust technological developments to efforts in improving the quality of education, especially adjusting its use for the education world, especially in the learning process. Information technology is the development of information systems by combining computer technology with telecommunications (Baharudin, 2010).

According to Suci Ramadani (2019) information technology is a technology used to manage data, process, obtain, compile, store data in various ways to produce quality information, which is relevant, accurate and timely information, which is used for personal purposes, business, private and government information that is strategic in decision making.

The rapid development of information technology in the current globalization era cannot be avoided anymore its influence on the education world. The global demand requires the education world to always and constantly adjust technological developments to efforts in improving the education quality, especially adjusting its use for the education world, especially in the learning process. The education world aims to make students understand in general, including computers (computer literate), and understand information (information literate), which means that students are familiar with the terms used in information and communication technology. The role of information technology in learning, besides helping students in learning, also has a significant role

for teachers especially in the use of facilities to the importance of enriching their teaching ability (Budiman, 2017). Thus, the advances in education, as well as the integrated role of technology in it, are greatly influenced by modernization which results in a variety of skills.

The skills developed during the learning process can later be used in developing other skills that support student work in the future. Therefore, the three basic skills (i.e. reading, writing, and arithmetic) are developed and adjusted to the expectations of the industrial world nowadays. Thus, new skills emerge which are the process of developing previous skills and must be mastered by students in this 4.0 education era. These skills include critical thinking skills and problem-solving, creativity, collaboration, and communication; these four skills are also referred to as 4Cs or super skills (Simarmata, Abi Hamid, Ramadhani, Chamidah, Simanihuruk, Safitri, Napitupulu, Iqbal & Salim, 2020).

As well as the presence of technology and communication that is always developing, so that easily the occurrence of the relationship between developed countries and countries have not been touched by the time progress, hence its systems and techniques production are still outdated and this cannot be avoided. By paying attention to the development of technological advances in the field of production greatly affects the state of human life, which facilitates production results with time efficiency, and makes a cheap production.

It is interesting to examine together, that the children's interaction outside of school comes in contact with the world of modern technology, about this sophistication in which various

information is presented neatly that is ready to be accessed by children whenever and wherever they want (Suda, 2019). Thus in the mastery of technology, they tend to get enough comprehensive and complex information needed in their daily needs.

According to Hety Mustika Ani, the rapid development of science and technology in the globalization era is one of the main characteristics of future society. The globalization of science and technology development can have positive and negative impacts, depending on the readiness of the nation and its socio-cultural conditions. Its positive aspects namely making it easier to follow the development of science and technology happening in the world, mastering and applying it to meet development needs. While the negative sides will arise if the socio-cultural conditions are not ready to accept the abundance (Ani, 2017).

The global technological progress are very influential in aspects of life as in the fields of economics, art, education, and so on. It shows that the role of the industrial revolution which is marked by technological advances has brought rapid influence and change in life, especially in the education world, as a paradigm shift in education.

According to Hamzah B. Uno (2010), the educational trends in Indonesia in the future are as follows:

1. The development of open education with distance learning mode (distance learning). Then to carry out open and distance education needs to be included as the main strategy;

2. Sharing research along with education/training institutions in a library network and other educational instruments (teachers, laboratories) has turned into a source of information than just a bookshelf;
3. The use of interactive information technology devices, such as multimedia CD-ROMs in education has gradually replaced television and video.

Shifting in the education pattern to a new paradigm produces assumptions that are directed to the concepts and practices (praxis) of education such as (a) teachers or educators find it difficult to transfer material to be taught when it is not fully paying attention to students condition during the learning process and factors that are relevant to the learning system; (b) students become the main focus in education and function as active knowledge constructors; (c) cognitive teaching materials that have a revolution that is in accordance with the development of science and community growth; (d) learning needs become the focus and source of the determination of the curriculum program along with the learning that students participate in; (e) learning experiences that contain knowledge and skills will be more appropriate when presented in realistic conditions; (f) assessment needs to be done in a realistic and comprehensive way as the students' performance in following their learning experiences (Abdulhak & Darmawan, 2020: 43).

As the assumptions expressed by Abdulhak and Darmawan related to the shifting of education from an orthodox paradigm towards a new paradigm point out that the important role of educational technology in such a system as providing a novelty

to support the process and system. Educational technology has a definition that is not much different from the definition of technology in general. General understanding and definition of technology is a process of increasing value. The process uses and/or caused the emergence of a particular product. Given a result (product) is functioning and/or produced through a single unit of the actual product and becomes integrated from the system. Therefore technology has meaning as a new and particular tool does not have to be an absolute provision that must exist, bearing in mind that the means of the device have already been shown before.

Changes in the educational paradigm must also be followed by changes in learning facilities and infrastructure, one of them is using computers as the basis. Computers are one of the most important teaching technologies used in education. Computers have a myriad of important and decisive roles that are implemented in the curriculum, from tutorial tools to student learning. A teacher can use a computer as a tool to collect information about students and manage classroom activities (Sudarsana, Dewi, Sukarmiasih, Resna, Arini, Restiti, Suryawan & Limbong, 2018).

In the field of education or learning, technology must also fulfill these three requirements, including; processes, products, and systems (Miarso, 2011). Miarso further explained that technology in education is technology as a product to help organize educational activities, for example, the use of cars, refrigerators, and loudspeakers, equipment, or hardware for the purposes of conducting educational activities. Meanwhile,

educational technology is a series of actions that are arranged (have a system) to provide education or lessons. In this systematic action, it is possible and most of the technology is used as a product. (Miarso, 2011: 64-65).

Therefore educational technology can be defined as a structured method for doing something that has been planned, used and the overall educational activity is valued by observing technical sources as well as people and their interactions that are integrated between these two, which is related with the hope that they will get an effective education pattern. From the various points of view above, each provides a variety of definitions, but in achieving the understanding of educational technology provides a consistency of the intended meaning.

The development of educational technology is certainly not applied in formal education that only applies in the school environment, institutions, and even universities, but the application of educational technology has been widely applied outside of educational institutions or institutions.

Nurdyansyah (2017: 5) explains educational technology known to be systematic method and systemic in answering learning problems efficiently and effectively. The output, educational technology provides several techniques, as follows:

1. Educational technology provides a variety of methods (ways), and not just one way
2. The method offered is not crucial, but a systematic, comprehensive, and integrated method that involves all elements and components in learning

3. Coherent and systematic is revealed way of educational technology as well as something disheveled
4. Educational technology provides a proven method of effectiveness and efficiency, which is tested within the limitations of the scale used before functioning on the national scale
5. These methods are focused on a series of interactions which integrated through a broad scale of learning resources with students, also all media and instructor sources so as to find the learning objectives achieved

As described above, which is revealed in the five output concepts of educational technology, hence educational technology provides solutions to problems that exist in the world or the education area as a form of a paradigm shift that shows better education.

THE DEVELOPMENT OF EDUCATIONAL TECHNOLOGY

Nowadays is an era of modernization where humans cannot escape and highly dependent on information technology. The development of information technology has increased in all fields of science rapidly moreover technology in the field of education. Even in this globalization era, technology has become a basic need for everyone. Start from parents, adults, teenagers, even children, and experts to ordinary people also utilize and use technology in various activities carried out in life. This is certainly inseparable from the demands of global society these days in the use of technology.

With the rapid advancement of technology, it is certainly very helpful and easier for educators both teachers and lecturers in the process of learning activities which become easier, faster and more effective, to be carried out in terms of time and place even more so in these days situation, technology is essential to use. These technological developments are better known as the modernization era or the 4.0 era, where humans are very dependent on technology as if the technology becomes very important for everyone. Moreover, in the technology education world, it is needed.

Compared to the previous year that it was not just technology but getting books to read was very difficult, especially in remote or disadvantaged areas or villages especially remote areas. The implementation of the teaching and learning process especially for students/college students with educators

(teachers/lecturers) at that time only relied on the teacher/lecturer as learning sources in which they considered the teacher as versatile. It is too different if compared to nowadays, wherewith this technology development has brought changes in this world, especially in the field of education. This certainly not all the changes are positive but negative side as well.

Although technology provides many benefits for humans, on the other hand, technological advances will negatively affect the socio-cultural aspects:

1. The moral decline among society, especially among adolescents and students. Progress in economic life that places too much emphasis on fulfilling various material desires has caused some members of the society to become rich in material but poor in spirit.
2. Mischief and deviant acts among adolescents are increasing, where the weak authority of traditions in society, such as mutual cooperation and helping each other has weakened the centripetal power which has an important role in creating social unity. Further consequences can be seen that mischief and deviant acts among adolescents and students are increasing in various forms, such as fights, scribbles, traffic violations to crime.
3. Changing patterns of interaction between people. The presence of computers mostly in middle and upper-class households has changed the pattern of family interaction. A computer connected by a telephone has opened opportunities for anyone to connect with the outside

world. The Internet Relay Chat (IRC) program, the internet, and e-mail have made people enjoy in their own lives. In addition, the availability of various internet cafes (*warnet*) has provided opportunities for many people who do not have their own computers and internet channels to communicate with others through the internet. Nowadays, more people are spending their time alone with computers. Through the Internet Relay Chatting (IRC) program children can have fun chatting with friends and strangers anytime (Siti Irene, 2012).

The technological success that has been used in the education world, such as the discovery of photocopy machines, radio, film, television, computers, and others, where everything is utilized in the education world. Besides, essentially these tools are not only made for educational purposes, but it can be used in the education world. Nowadays, internet services and utilization are becoming very important technologies in helping people (students/college students and teachers/lecturers) to obtain information. Society is greatly facilitated by the existence of the internet, which is easily obtained by knowing what they want. By typing keywords about the information needed on the web, by clicking searching, it will get that information quickly, effectively, and efficiently. However, before further understanding the educational technology role in the education field, it is necessary to understand first the definition of educational technology itself. According to Ruly Darmawan, educational technology is a system built for the educational interest whose main purpose of the use is for teachers and

students to improve the quality of learning and productivity. Basically, educational technology can also be in the form of teaching aids, and such devices are often or can be easily found in several educational institutions. However, along with the increasing interest in using computers in all activities, some development of educational technology is directed towards the use of computers as supporting learning process media (Darmawan, 2006).

Therefore based on experts' understanding, it can be concluded that educational technology is a facility that is used as a learning media for educators and students through the organization, development, and flexible utilization and systematic ways of learning resources processing processes.

In general, the role of educational technology in the education field, especially in the process of teaching and learning activities carried out by educators, in this case, teachers/lecturers and students (students/college students) can be described as follows:

1. As online learning media
2. It is used as an online learning media, namely by using the internet and as an electronic book.
3. It is used as a learning tool for groups and individuals to carry out discussions and learning because in this technology it can use media such as mobile/android or computer and laptop with a supportive application.
4. With this technology, student learning methods will be able to improve their knowledge and experience better through the *Google* search engine.

5. It can be used as a media for receiving and delivering announcements/information and learning tasks that are faster, easier, effective, and efficient, for example, information that is indeed important and urgent to be known by students. For example through *WhatsApp* or messenger or email.
6. It is easier in the learning process because with this technology the teacher or students can be easier to look for articles or other topics and if there are obstacles in the material, for example, if the material presented is incomplete and extensive and to answer difficult questions, then students or teachers can do a search by searching on *Google* quickly and does not take a long time.

Muhson (2010) states that the existence of learning media as a tool in the learning process is a fact that cannot be denied. The teacher as a message deliver has great importance to facilitate his task in convey messages or learning material to students. The teacher also realizes that without media, learning materials will be difficult to be understood by students, especially if the learning material that must be delivered is classified as difficult and complex. For this reason, the use of media absolutely must be done so that the material can reach the students effectively and efficiently

However, the development of educational technology is very dependent on the development of information and communication technology because educational technology will not be able to develop if information technology is only running

in place. According to Rosenberg, with the development of the use of information and communication technology, there are five shifts in the learning process, namely:

1. From training to performance
2. From the classroom to anywhere and anytime
3. From paper-based to “online” or channels
4. From physical to network facilities
5. From cycle time to real-time (Rosenberg, 2001)

Another role of the use of educational technology is in teaching and learning activities, that students will feel more comfortable, secure, and focused on receiving the learning delivered by the teacher/lecturer. It will affect the ability of students in daily life because between the teacher and students do not have face-to-face directly in the teaching and learning process. The rapid use of educational technology development will also have an impact or influence on its users, either positive or negative impacts.

The positive impact of educational technology development, namely (1). It can accelerate the flow of information needed. (2). To make it easier to obtain and access information in the science field that we need. 3). As a media (social media) to bring individuals together with new people or easily to increase the relationship between individuals. (4). To make it easier for individuals to obtain and find the desired information. (5). To facilitate the communication both individually and groups from a distance. (6). To make it easier to access all information related to the education world such as learning materials. (7). To assist in increasing the effectiveness

and efficiency in education for students/college students, teachers/lecturers. (8). It can help in solving problems faced, especially those related to education. The negative impacts of educational technology development are: (1). There is a tendency for students/college students to become lazier in reading. (2). The feeling of being lazy to do physical socialization around the environment or school. (3). Lack of control over access to content and information that is less educational and tends to lead to negative things that develop rapidly. (4). There is a growing tendency to neglect assigned tasks and work. (5). Increased cybercrime and online fraud. (6) Increased individualism among adolescents, students, and the general public. (7). There is a decrease in student achievement as well as the ability and expertise in work.

Based on the explanation of the positive and negative impact of the educational technology development, it can be drawn a common thread that with this educational technology, it is certainly necessary to have good control of the elements that exist both from students/college students or individuals, teachers/lecturers, and the government, hence the development of educational technology can be useful for its users and future educational development. It can be seen, for instance in virtual and e-learning learning systems. Where the learning system does not face-to-face between students/college students and teachers/lecturers, hence it can make students are less active in the learning system and the results are not optimal.

Based on the explanation above, the importance of educational technology in the education world is to develop and improve the learning process both for teachers and students themselves. However, the use of this technology certainly has an impact that can occur either positive or negative impacts.

TECHNOLOGY IN THE LEARNING PROCESS

In the current development era, technology is very influential in the education world these days, as we know that technology in the education field that has been designed in such a way, specifically has been very able to provide an impact or a good contribution for teachers who are effective, efficient and can help students achieve high potential or achievement.

Information technology can be used effectively if the organization members can use the technology properly. Thus, it is important that the organization members to understand and predict the usefulness of the system. Returns towards investments in information technology will be small if employees fail to accept the technology or maximal utilization according to their capabilities (Lucas and Spitler, 1999).

Because essentially, all types of technology in the education world are very good, in the rapid technological development era these days. Nasution (2011) explains that basically technology in the education world is a structured approach and it is classified as very critical about the educational process. Technology in the education world refers to the learning process as a problem that should be developed structurally and scientifically. From an existing educational institution, students can be directed about how a role and the use of technology in the education world.

Students who have a deficient physical condition, particularly really need special learning tools or media as well. As a result or achievement of the undertaken learning process, and with the presence of educational technology, it is very

helpful for students who have special needs such as disabilities, hence students have the same learning opportunities as other children and have greater opportunities to receive a learning process when students who have physical or other deficiencies can be presented in a structured learning process.

Students who have a deficiency in hearing and vision that can be classified as less able in learning, it will need media or aids in receiving different learning. Educational technology can be reviewed from the education world perspective and purpose, which is to change the child's behavior and how to think and feel good and right, change the child's behavior itself. The curriculum can be used as students' encouragement to be able to develop towards goals to achieve success. It is a must that the teacher provides learning to students and telling them what should they achieve in receiving the learning process.

According to Pannen (2005), currently, there is a change in the learning paradigm related to dependence on teachers and their role in the learning process. The learning process should not be 100% dependent on the teacher anymore (instructor dependent) but more centered on students (Student-centered learning or instructor independent).

Basically, a teacher must know clearly what can be done by a student to be able to achieve the learning outcomes process that cannot be done by students before learning it. The development of science these days has directed the society towards a very fundamental change in various dimensions in life as a human being, both economically, socially, culturally, and in the education world itself.

With the development of education and learning systems in Indonesia these days, the society which is directly related especially to the education world is requested and directed to be more creative and professional in developing the education system. In addition, the figures in the education world must adjust to existing procedures, especially those that have been determined by the central and regional governments in accordance with a need and a challenge in the education world nowadays.

Awareness about the importance of the technological world in the education or learning process that can always provide hope and promising opportunities in the future, which has encouraged various efforts and paid attention to society, especially Indonesian society towards every step, in an expansion of the education world. In the education technological world, it can be focused on educators or teachers to be able to formulate clearer goals for formulating methods that are considered to be very effective and efficient in order to achieve a goal in the educational process itself. In which the purpose of education is as a guideline for selecting and sorting out the right media to be used.

There are many educators or teachers who teach in the classroom without knowing clear procedures of what should be achieved and become a guide in the learning process time without guidelines set by the government, and whether we get to the place that is expected, the learning process in an elementary school or higher levels of education units. Educational technology teaches that there can be an assessment process that

must be done as soon as possible by the teacher about teaching material that has been learned by students themselves.

The number of educators or teachers who have done the learning process only a few times a meeting in the semester in the form of giving questions. The quick and right assessment process after the learning process is carried out, can provide information about the students' achievement results and giving achievements in the method of presenting an educator to students. The assessment process serves as a media or tool to be able to measure the teaching and learning outcomes process of students that have been taken. Media or tools for an educator or teacher to provide an assessment of its effectiveness in the teaching and learning process carried out in the classroom, it is as a basis for starting points for improving student achievement by analyzing the mistakes they have made and correcting the steps or ways when instructing in the classroom.

If an educator or teacher applies basic principles in educational technology perfectly and consequently, hence it can be used as a process to improve quality as an educator or teacher. The teacher will look at a teaching and learning process as an endless problem faced at the time the learning process effectively and efficiently to get the satisfying students' work result.

Thus the efforts made during the learning process will be developed by teachers who become professions in the real sense. The concept of technology in a method in teaching media is a symptom that only appears in the education and training process. However, the essence of the learning concept has been

established and developed over the years from the achievement result of the media and teaching concepts.

Nowadays, the development of a learning method is a moment of technological knowledge in the education field. At the same time from history and background, not based on what we know, namely science. In an educational method in the learning process, some concepts can influence the way of behaving, thinking and doing a thing, the process of assessment and development of the learning process found in schools later known as educational technology.

The development of information and communication technology (ICT) network is a very basic effort that needs to be implemented, especially for the affluent society, such as underprivileged households, the elderly, helpless are the most highlighted target group types. Due to the rapid development of technological science, which started from print media, audio-visual media, that is estimated in the 1930s where the film has begun to be used for the process of learning activities, computer-based technology and integrated technology.

In the development of the technology world, it can be grouped into a low, intermediate, and sufficient or high technology. Low category technology does not use tools or electricity media; it does not need to be connected nor does it require battery media. For instance, a microscope to enlarge printed objects for students who are in low vision that is classified into technology to help those with less or low technology. Intermediate technology requires electricity. High technology involves the use of computers.

Reading kurzweil is an example of relatively high assistive technology. It should be the existing educational institutions to introduce the using and utilizing process of the technology system in the information and communication field which is abbreviated as (ICT) as a learning.

In this case, it is very important to remind that ICT users are one of the important factors that make it possible to accelerate a knowledge transformation to students, as well as to the generation of this nation in a broader context. In the order that is classified as smaller, it can be used as a policy of implementing education in the country, both those that have been implemented by the central government, regional governments, and community groups must be able to provide wider knowledge and mastery of current technology to students.

The government programs of integrated education, which is already based on technology science networks and has referred to guidelines that are helpful to provide education for all sides of the education development process in the country, thus ICT is useful to minimize the disparity process from a mastery of technology, especially in the education field. Educational development leads to ICT, at least it able to provide two good benefits as follows.

First, as an incentive for educational leaders to be more proactive in advancing potential in the education world these days. Second, it can provide a broader imagination to students in the utilization of any potential that occurs, which can be looked at from an unlimited source or reference. The process of developing and utilizing the technological world in education is

urgently needed by society these days because the role of the technological world in the education field, in supporting success and the learning process by teachers to their student needs to be improved.

Due to the learning process is a comprehensive process in the broadest sense that will occur in every society throughout his life. The learning process itself will occur because of a reciprocal relationship between a society and its environment, either in the natural or in the socio-cultural environment. In life, in this case, educational technology is a science that is not only used in the astrology and medical field but also in the education world must utilize the technology itself because with the advancement of the education world, the technology world will automatically develop.

Because of education, people will be able to develop the technology, however, the development of technology is the result of the educational process that their process through the learning process, and subsequently will be applied, thus technology will emerge and develop in education. Technology and education are likened to as chains that are related to one another and intertwined. For example, if technology moves away from the learning world, then it will not be able to develop properly and perfectly.

Vice versa if education is not supported by technology itself, then the educational process in the education world will be slower to develop and will be just the same or monotonous in delivering the learning and there will be no expected progress. Essentially, the kind of people's thinking have been influenced

by the technology itself, that educational technology in the education world is a learning process that can be carried out using computer-based learning tools or media or other electronic media.

Muhson (2010) concluded that practically learning media has several benefits, namely:

1. Concreting abstract concepts, thus it can reduce verbalism. For example, using pictures, schemes, graphics, models, and so on.
2. Raising motivation, thus it can enlarge the individual students' attention to all the study group members because the course of the lesson is not boring and monotonous.
3. Functioning all of the students' senses, thus the weaknesses in one of the senses (i.e. eyes or ears) can be balanced with other sensory strengths.
4. Bring it up the world of theory/concept closer to reality which is difficult to obtain in other ways than using learning media. For example, to obtain knowledge about the earth patterns, since children may not gain the direct experience. Thus, the globe was made as a model of the globe. Likewise, other objects that are too big or too small, symptoms that move too fast or too slow, dangerous or difficult symptoms/objects to obtain, things that are too complex, and so on, these can be clarified using learning media.

5. Increasing the possibility of direct interaction between students and their environment. For example by using recordings, experiments, field trips, and so on.
6. Providing uniformity in observations, because the comprehension of each student will vary depending on the experience and intelligence of each student. For example, perceptions about elephants, it can be obtained uniformity in observations if the animal is directly observed or bring its imitation to in front of the classroom.
7. Presenting the learning information consistently and can be repeated or stored as needed. For example, in the form of recordings, films, slides, pictures, photos, modules, and so on.

However, technology in education in a broad sense in the education world, namely the learning media that emerges and is revolutionized by abbreviated (ICT) that should be practiced and implemented in the objectives of the teaching process. Besides, an educator or teacher, whiteboard, book, and other references and the entire material of teaching process and information exposure that produces a learning, good and perfect results in a learning process to students, all of this is a very important part of learning educational technology in the learning process.

THE TECHNOLOGY IMPACTS ON ENDUCATION

The development of technology in these days are getting advanced. Space, distance, and time are not barriers between individuals or societies to communicate and exchange information. The existence of this technological progress makes it easier for humans to solve problems. Besides, humans are required to prepare themselves to face technological advances that will constantly change.

Technology is very important in learning activities especially for the collection, processing, storage, presentation of information, and data. This developed technology aims to improve the education quality in Indonesia in the learning process. Therefore, technology makes it easy for educators and students to learn and get information, whether it makes assignments, papers, and others, which requires educators and students to innovate and be creative when learning at school or other places. Even in the education world nowadays, the benefits of technology are very useful and inseparable.

Education in schools is a process or action that is arranged systematically by humans and it is carried out in schools either inside or outside the classroom. In the learning process, things learned by students cover from knowledge to skills. Education must function as it should be, as the best way to trigger awakening and moves time (Fatmawati, 2020). Innovation and creativity that are intended for educational progress in schools include: innovation in the field of curriculum, infrastructure, and innovation that can improve the performance of educators,

students, and schools by utilizing the educational technology. For example, a teacher when teaching in class must be able to make an enjoyable learning atmosphere, children become excited and interested in learning by using this educational technology-based media. The tendency of change and innovation has very broad implications in the education world, namely changes in renewal program and learning technology, changes in study and learning using experimental methods, more learning control to students, and demanding the integration of technology in the learning activities

Riyanto (2010) states that "educational information technology is a science in computer-based information field that is used in improving the education quality". The use of educational technology that is getting increasingly advanced and penetrated in every field of human life such as in the fields of telecommunications, information, office administration, companies, even household needs are inseparable from technology. Based on this situation, educational technology provides advantages and disadvantages to education in Indonesia. Therefore, the development of educational technology becomes a pioneer in the development of education in Indonesia

The existence of technology cannot be separated from communication, because it is an activity of sharing opinions, information, and messages between various parties at a particular time and place. This communication includes things, such as; writing and speaking, pictorial communication, electronic communication. In the current information and

communication technology era, communication is very important and needed in a person's life, business, education, and when people meet each other or far apart. Even every day we get information from various sources (television, radio, social media, and print media). The development of educational technology can improve community performance so that it is possible for an activity to be carried out quickly, accurately, practically, and easily. The position of educational technology is often equated with ICT or even broader than it, thus it is often wrong to determine its position. ICT has various fields of study because ICT does not only discuss information and computer technology issues but also discusses communication technology.

The field of ICT studies are as follows: 1) E-learning, 2) Information management, 3) Information technology, 4) Computer technology, 5) Internet, 6) Telecommunication technology, 7) Management information system, 8) Computer network technology (LAN, MAN, and WAN), 9) Computer network security system, 10) Database system. Based on this description, information technology is part of ICT which is interrelated in its implementation, such as the implementation of information technology in schools requiring computer networks (LAN and WAN), and telephone networks to be accessed by many people.

One of learning that uses educational technology is learning media web sites that can be accessed through the internet network. Web-based learning is a type of application of electronic learning (e-learning). Rusman (2009: 21), revealed that an e-learning system is a form of information technology

applications aimed at facilitating the learning process that is packaged in digital content form. Its implementation requires computer and laptop facilities connected to the internet network.

The implementation of educational technology-based learning is e-learning, in which students are expected to be able to apply technology such as computers or laptops to access learning material, carry out the learning process between educators by applying new methods used in the learning process, and students can develop educational technology with the demand to create output or active human resources, having new ideas and quality is a necessity and inevitability.

Teachers can integrate technology through e-learning to learning activities, thus students can easily understand the learning process. E-learning is a popular term on internet-based online learning. E-learning technology is a technology connected by internet technology, which requires media to be able to display particular materials and questions, it also requires communication facilities to be able to exchange information between participants and teachers. E-learning-based technology includes several applications and processes, including computer-based learning, web-based learning, virtual classroom, and digital collaboration (Riyanto, 2011: 208).

According to Rosenberg (2001), 'e-learning refers to the use of internet technology, to deliver solutions that increase the knowledge and abilities based on three criteria', namely.

1. E-learning is a network with the ability to renew, store, distribute, and share teaching materials or information.

2. Delivery to the last user through a computer using standard internet technology,
3. Focusing on the broadest view of learning behind the traditional learning paradigm.

The criteria expressed by Rosenberg (2001) above is e-learning is a network that makes it able to update quickly, store or bring back, distribute, and share learning and information. The existence of advanced educational technology these days provides equal distribution and opportunities for people to get an education towards the direction of quality improvement, relevance, and educational efficiency. For example, in the learning process carried out by educators (teachers and lecturers) in combining the use of educational technology often found in daily learning.

In addition to e-learning, the use of online technology is also often used now. Especially amid the corona pandemic (COVID-19) which currently hits Indonesia, however, it does not discourage to carry out the educational process in Indonesia. The efforts made by the government are to let students studying at home and applying learning methods through online systems such as *WhatsApp*, *Google Classroom*, *Zoom*, and others. By implementing an online learning system, students are more enthusiastic to learn and utilize the technology according to their needs even though the results have not been maximized. Besides, teachers do not have to face-to-face with their students when delivering the material obtained at that time. By sending an assignment via email or posting information on the web, students

will be able to open it via mobile phones, computers, and laptops through an internet connection, either at school or at home.

According to Grover Lisperguer Martínez and César Augusto Orión Camacho Soliz (2020), at this time, the teacher receives reports from students about the activities carried out to assess whether students have adhered to the schedule. Teachers need to be aware of this process and be enrolled in some sort of statistical diagnosis, to present and prepare educational plans including additional activities. If it does not segment students, according to connectivity, students will not be able to build activities that enable meaningful learning and will make students who are not saturated with activities that cannot be fulfilled. The socioeconomic status of students and this information must be shared by the teacher in the same year or semester, thus students plan to collective activities that frame the megabytes consumption coordinately, considering in this situation the failures of some virtual education programs do not know for certain the student budget available for access Internet.

According to Nurkholis (2013), education in an effort to advance technology aims to introduce and familiarize students with the technological world with important aspects that enable students to:

1. Develop critical thinking about technology.
2. Develop the ability to argue about technology and be able to describe it to others.
3. Identifying the impact positive and negative of technology on society and the environment.

4. Have the insight in choosing professions in the technology field, thus it has a meaningful role in society.
5. Have the motivation to learn more about technology.
6. Familiarize yourself working alone in togetherness.

Therefore, between technology and education, there is a close and inseparable relationship. For example, the close relationship between science and technology and education, in which technology such as the internet is helpful for students in finding information. Because of the internet can make the students easily searching for assignments or information and increase their knowledge. These conditions can affect the occurrence of changes and learning methods, even new formulations in education allowances where supporting facilities such as laboratories. Based on this situation, there is a large relationship between education and technology. If the technology changes, education also does, and vice versa.

According to Ngafifi (2014), technological progress is something that cannot be avoided in this life, because it will go according to scientific progress. Every innovation was created to provide positive benefits for human life. Technology also provides many easiness, as well as a new way of doing human activities. Humans enjoyed the benefits brought by technological innovations that have been produced in the last decade.

The existence of technology in daily life carries a huge influence, both for teachers and students in the learning process and it can improve standards and efficiency of life. The positive impacts of the influence of technology, namely: (a) Teachers and students have the opportunity to try out the various the

effectiveness of teaching and learning activities in schools and get information through the internet, (b) There is a fulfillment of the needs for educational facilities, hence it fulfills quickly, c) Motivating students' ability to be able to adapt and anticipate the development of information and communication technology, thus students can carry out independently, (d) Overcoming the limitations of teaching materials or learning resources, (e) Learning is more dynamic and flexible, (f) Teachers and students can have discussions via the internet that can be followed by a large number of participants, thereby it can increase knowledge and broader insights.

However, besides the positive impacts above, advanced technology requires humans to be able to accept and master all forms of technological progress. There are negative impacts of these demands, namely: a). the crime will be increased, for example, cybercrime is one of the crimes in which perpetrators can get criminal offenses according to the UU ITE that has been set. There are many types of cybercrime without knowing who the victim or the target is. Therefore, it should be wise to say something and behave even if only in cyberspace. b) Changing the way of work for each individual or group, for example, students are given an assignment by their teacher, they just copy and paste their assignments from the internet without looking for other sources, c) Changing the pattern of human life, with the existence of this educational technology to change the pattern of his life both in thinking, saying, and behaving which makes the person cannot be separated from the technology.

For example, the first time we do after waking up is checking our cellphones instead of making your bed neat because a cellphone is an important communication tool for this life, d) The example of human dependence on educational technology, namely in carrying out any activity, we cannot separate from information technology especially cellphones and laptops because it is the most important part in the education world. e) Accelerating the maturity process of children. As seen in the current situation, children are smarter using technology than adults, it proves that technology development has an impact on the maturity process of children, especially in playing games. When children are addicted to playing games every day, there will be a change in themselves if one day they cannot play it, such as becomes emotional and easy to get angry because their desires are not fulfilled.

According to I Wayan Adi Putra Yasa, the use of games as an educational tool enables messages in the form of learning material to be easily conveyed. Besides, games can provide a new atmosphere in teaching and learning techniques, by utilizing games in education, it is expected that students as users will have fun learning. It certainly provides creative media in the teaching and learning process which is sometimes considered to be boring, thus the process becomes fluently and on target (Yasa, 2020).

Therefore, the relationship between technology and education is very close and cannot be separated along with its development. The advances in educational technology require human resources that are ready, responsive, and have a quality

for today's life, it must be supported by providing moral education, ethics, and knowledge of the positive and negative impacts that they will face after receiving information technology education and learning.

EDUCATIONAL TECHNOLOGY AND TEACHING QUALITY IMPROVEMENT

Facing the challenges of change in all environmental aspects, every organization, whether government, public, or business, needs to adapt to these changes to stay survive and develop. Changes to adjust to the environmental changes require changes in thinking and behaving. There are many people among the society who boast of Indonesia's natural wealth and geographical position as a potential advantage to become a great and developed country. However, these potential benefits will only be realized if the society and State as a large organization realized and fixing misleading illusions. We have to see things with new eyes, not just change glasses to see and solve some new problems we face.

Therefore, educational technology is one of the disciplines that concern in solving learning problems based on a set of principles and using various approaches. Educational technology is the study and practice of helping teaching and learning processes and improving performance by creating, using, and managing adequate technological processes and resources.

However, some people like technology until depending on its existence. It needs to keep in mind that anyone who engaged in any field of technology is also required to have an open, broad-minded, and dynamic nature. The technology was created to simplify human life and can help in many ways, including the teaching and learning process.

Integrating new technologies effectively into educational practice is not only a matter of learning by using technology, but also a process that reflects how practices developed by technology, challenge assumptions about how to teach and how the students learn more effectively in the world these days (Wiske, Franz, & Breit, 2005).

Educational technology has changed teaching and learning way in many schools both elementary level (Pre-school, Kindergarten, Elementary School), intermediate level (Junior High School, Senior High School), and higher levels namely, Academy, Institute, College, or University. Technology enables students to experience learning events or phenomena that they cannot witness directly. By incorporating technology into various learning tasks and passing through subject areas, educators can provide the learners with learning experiences that might not have been possible a few years ago. The internet and other communication technologies have the potential to transform teaching and learning. In addition, educators must develop new assessment techniques to evaluate the student learning that arises from the use of high telecommunications such as the internet and website. The number of correct responses from homework, quizzes, and tests will be inadequate to measure student learning.

Educational technology areas can include activities related to the analysis, design, development, utilization, management, implementation, and evaluation of both processes and learning resources. Learning technology is not only active in schools but all human activities such as companies, families, organizations,

communities, and others. As far as it relates to efforts on solving learning problems and improving performance. In this case, what is meant by technology is technology in the broadest sense, not only physical technology (hard tech), but also soft technology (soft tech).

THE DEVELOPMENT OF TECHNOLOGY IN EDUCATION

Nowadays, educational technology has a major influence and contribution to the education world and even more influences to the order of human life, thus in this globalization era or called as 4.0 industrial revolution era which is an era where the progress of technological development greatly dominates market elements and even human needs particularly.

The rapid development of communication technology that causes the relationship between developed countries and developing countries whose production techniques are still lagging. By paying attention to the development of technological advances in the production field greatly affects the state of human life, which facilitates production results with time efficiency, and makes cheap production.

Global technological advances are very influential in aspects of life such as in the fields of economics, art, education, and so on. This shows that the role of the industrial revolution marked by technological advancements has brought rapid influence and change in life, especially in the education world, as a paradigm shift in education. Currently, we are entering a society period called Society 4.0 which is marked by the rapid development of information technology that brought changing impacts in all aspects of people's lives. These impacts are divided into 2 namely negative and positive. The positive impact obtained from the technology development in the education world these days is educators (teachers or lecturers) and students

in this case (students or college students) are made it easy to seek and find various information and knowledge quickly through the internet network (Ratminingsih, 2020: 1).

Thereby, in its rapid development of technology at the same time with the emergence of equipment and applications that are easy to learn and be used as a learning media. The common technological devices in the community are gadgets (communication technology) which have many application features and easy to use in looking for learning information. Gadgets have Social Media applications that can be used in looking for learning materials and it is easy to operate.

With the development of technology through the internet network, it is easy to access and disseminate the knowledge, even with the help of this technology, educators (Teachers or Lecturers) or learners (Students or College Students) can apply the learning process without doing face-to-face or using the online application. The government even issued policies to use or utilize online media in education implementation.

It indicates that the role of technology is very significant in learning that adjusts to times development. The positive impact obtained from the development of information technology is accompanied by a negative impact. The negative impact caused by this technology development, because we are not able to utilize this technology, also students often too far in the use of this technology. The negative impact obtained from the use of this technology is health problems such as eye health that is too often exposed by gadgets. They prioritize accessing an online game instead of learning material, even dishonorable actions

such as accessing porn and gambling sites. In severe cases, psychic problems may occur, such as inferior because they prefer to be alone rather than socialize with their peer.

Children are rarely found to socialize like chatting or make a joke, instead, they often stay alone with their gadgets. Besides, other problems arise when educators give too many online assignments, forcing students to be overwhelmed in their work and constrained by the costs of completing these tasks.

The role of parents is necessary for controlling the use of gadgets, thus children can spare their time to play or occasionally be able to socialize with their peers and control the use of this gadget for educational purposes or to find learning resources through an online. Besides, there is the role of educators in supervising students in the use of information technology devices and providing education in their use so that it does not misuse.

In utilizing this technology, there are many impacts that we get, either negative or positive impacts depending on the use and utilization of this technology. Referring to the various positive and negative impacts of using this technology, in Bali Post No. 207 of 2020 stated that there are two main concepts offered by Prof. Dr. Ni Made Ratminingsih, M.A in addressing the negative impacts arising from the use of this technology.

The concept of MAHA and ESA, the concept of MAHA is Manage (the parents or educators ability to control the use of technology), Accelerate (the educators or parents ability to strive for the use of technology), Help (The educators or parents ability in assisting the use of technology), and Acquire (As to obtain

information or abilities to students), Meanwhile, ESA (involving thoughts and feelings from the beginning of learning), Engage, Study, and Activate.

Based on the explanation above, the negative impact caused by the development of educational technology can be avoided through the MAHA learning concept, which is how to control when the right time to use technology and how long the time limits of its use, and for what purposes of its use. Educators or parents must accompany when they learn to use this technology, in which the educators or parents can give direct monitoring their use. This can minimize children to open negative content that they can access.

The concept of ESA learning shows how educators are able to engage the students' minds and feel from the beginning of learning. For example, educators are able to give stories about the negative impacts obtained if students stay too long in front of gadgets and provide penalties if they are found to access content outside of learning.

EDUCATIONAL TECHNOLOGY AND CHARACTER DEVELOPMENT

In this practical modern era, some new inventions can help human life, such as vehicles that facilitate one's activities to their destination, various kitchen tools which simplify for someone to cook, air conditioners, and refrigerators, and various other inventions.

Besides some tools mentioned above, other inventions in the form of technology are increasingly developing and creating new things. Talking about technology may be familiar to us. Then, what is technology? How technology can help all aspects of human work, especially in education?

Etymologically, the technology comes from the Greek word *technologia* which is divided into techno and logia. Techno means expertise and logia mean knowledge, thus it can be interpreted that technology is expertise in knowledge. Many things can be created from technology.

Previously, the existing technology could only create visible and tangible objects which have a form and we can feel its use. However, along with the times, technology can create new inventions in the form of intangible objects such as systems, software, websites, sites, network, and so on. If you already know the explanation of the technology, then what is educational technology? Educational technology is a learning and practice ethic used in providing facilities to improve the learning process. Study and practice ethics can be through the creation, use, process regulation, and technological resources. Educational

technology is a combination of human elements, machines, ideas, procedures, and management. Educational technology is abstract.

In this case, we can understand that educational technology is a thing that has procedures, ideas, tools, and requires many people to analyze a problem, find a way to overcome the problem, implement, assess, manage all learning processes. Educational technology is a systematic way of designing, implementing, and evaluating the overall process of learning. Learning objectives that have a specific form, based on research in learning theory and communication to humans and use learning resources from humans and non-humans to make learning more effective.

Communication learning is a normal and important thing used to convey and provide information so that in teaching and learning activities the educational technology is often called as information and communication technology. Information technology is a field of science that develops rapidly. Riyanto (2011) states that "information technology is a science that includes various things such as hardware and software computer systems, LAN (local area network), MAN (metropolitan area network), WAN (wide area network), information systems (SIM), telecommunications system."

Based on the quotation above, it can be understood that information technology has the definition as a field of science in information and communication where its information is computer-based, hence it develops rapidly.

In the education world, technology is very helpful and fully contributes to supporting education implementation, especially in character building. T. Ramli mentions that character education has the same essence and meaning as moral education. It aims to form the child's personality to become a human being and a good citizen. There are human criteria or good citizens for a society or nation, in general, namely certain social values, which are much influenced by the character of the community and nation. Therefore, the essence of character education in the context of education in Indonesia is value education, namely noble values education that originates from the Indonesian people's character themselves, to foster the personality of the younger generation (Fathurrohman, Suryana and Fatriany, 2013).

Based on the opinion above, it can be understood that character education is a process to assist students in instilling noble values, thus they can form their morals into an honest person and have good morals. Character is almost the same as moral, hence character is universal values that embrace human activities, namely the relationship between humans and God, relations between humans and each other, and relations between humans and their environment. In which, it is manifested in thoughts, attitudes, feelings, words, and deeds, based on religious norms, law, etiquette, culture, and customs.

The value of character education is expected to be the main key to instill the morality of a group that will become a habit for every group member in society. The value of character education is education that develops values and character in students hence

they have value and character and able to apply it in their lives as members of society (Maresta, & Abdurrahman, 2020).

Some forms of changes in socio-cultural behavior due to technology, it can be seen as follows:

1. The personality differences between man and woman. Many experts are argued that the greater portion of women position as a leader, either in the government or business world. Even the change from previous behavior is mostly the man's job.
2. Increased self-confidence. Economic progress in Asian countries generates an interesting phenomenon. Economic development and progress have increased self-confidence and resilience as a stronger nation. Western nations can no longer harass to Asian nations
3. Pressure, fierce competition in various aspects of life as a consequence of globalization, it will generate a disciplined, determined, and hard-working generation (Ngafifi, 2014).

The student character is a good quality or trait according to religious norms, Pancasila, culture, and national education goals that are continuous and eternal which can be used as individual identities, as a result of students' learning experiences. There are six important pillars of human character that can be used to measure and assess their character/behavior, namely: respect (tribute), responsibility, citizenship-civic duty (citizenship awareness), fairness (justice), caring (caring and willingness), and trustworthiness (trust) (Fathurrohman, Suryana and Fatriany, 2013).

According to Mertayasa and Sudarsana, the values of character education can be grouped into five main values namely, as follows.

1. The character value includes a harmonious relationship between early childhood and Almighty God (*parahyangan*).
2. The character value includes a harmonious relationship between early childhood and each other (*pawongan*).
3. The character value includes a harmonious relationship between early childhood and their surrounding environment (*palemahan*).
4. Nationality Value.
5. The character values in relation to yourself.

Furthermore, the values developed in character education can be identified as follows: (a) religious values are someone's attitude who always obedient in carrying out his religious teaching, and has a tolerance attitude towards adherents of other religions, (b) be honest is an effort in behavior which used as the basis for making himself as a trusted people either his words, thoughts, or deeds, (c) tolerance is a mutual respect attitude to existing differences, starting from the differences opinion, behavior to differences in religion, tribe, ethnicity, and others towards him, (e) hard work is an earnest attitude when resolves problems and difficulties while carrying out the task hence it can be well done, (f) creative is a way of thinking and implementing expected things to produce new ways and things that are already owned, (g) independent is an attitude and behavior that is not easy to depend on others in completing tasks, (h) democratic is

a way of thinking, behaving, and acting that values the rights and obligations of himself and others, (i) curiosity is an attitude that has an effort to learn new things he does not know before, (j) national spirit is a way of thinking, acting and having the insight that places the nation and the state interest above of himself and group interests, (k) patriotism is a way of thinking and behaving that shows high loyalty, care, and respect towards language, physical environment, social, cultural, economic, and national political aspects, (l) achievement appreciation is an act that always pushes himself to produce something useful for society and recognizes and respects someone's success, (m) friendly is a communicative action that always shows a sense of pleasure, friendly, sociable, and cooperate with others, (n) peace is a behavior that causes people around him to have a sense of pleasure because of his presence, (o) Reading is a habit of providing time to read various readings that provide a policy for himself, (p) environmental care is a behavior that always preserves nature and prevents damage, also seeks to repair the nature damage in the surrounding natural environment, (q) social care is a behavior of willing to provide assistance to others and the community in need, (r) responsibility is the behavior of someone who does their duties well and understands their work towards himself and his surroundings. The values above will help students in forming and developing their character.

Some descriptions of the values above can help students to understand and learn in forming and developing their character into a good person and noble character. Although in reality, it is

not easy to remember the globalization flow, which also has a big influence on various technological sophistication.

Suripto, Fatmasari, and Purwantiningsih (2014) state the benefits of technology in providing information, namely:

1. The emergence of mass media, such as the internet network, school computer laboratories, and others, which has an impact that teacher is not the only source of knowledge, thus student does not have to depend on information taught by the teacher, however, it can be accessed directly through the internet. In this case, the teacher also becomes the student advisors on directing and monitoring the learning process, thus students do not misuse the internet when using information and communication media during the learning process.
2. There is a new learning method, which makes it easier for students and teachers in the learning process. If technology advances, new methods will be created that enable students to understand abstract material.
3. Learning process does not have to go through face-to-face, but with the advances in technology, the learning process between teachers and students can go through online learning by the internet.

Based on the explanation above, it can be understood that the existence of technologies that produce the mass media, internet, and application programs that help students in the learning process has an important role in the student character development. Students can clearly see the examples of information related to a national character hence they can see and

understand clearly and not only depend on teacher information when face-to-face learning takes place.

It was also emphasized by Diasa & Karyawati (2020), that it would be more effective giving examples directly by parents in dealing with children's character education. In applying spiritual attitudes or manners, parents can give an example in their daily lives. For example, when interacting with fellow family members or the surrounding environment. If children pay attention to their parents' manners or family, they will do the same if interacting with their friends, other people, or the surrounding environment.

It is very meaningful if parents giving trust to their children on making a decision in their family. Besides as maturity form for children, it can be used as education to instill a responsibility and self-confidence attitude. If this happens to the family, it will make the child comfortable staying at home. However, not all parents can do it.

EDUCATIONAL TECHNOLOGY AND LEARNING MOTIVATION IMPROVEMENT

Educational technology is the study and practice of ethics to facilitate and improve learning performance. The introduction and understanding of the use of educational technology in the learning process will enhance and develop the educators' creativity in realizing innovation in an updated learning method so that students have a keen interest in learning. Then, they achieving the goals of educators in the conducive and structured learning process.

The success of educators when delivering material is highly dependent on the fluent interaction of stimulus communication between educators and students, thus media is needed as an intermediary in the learning process. In addition to the media, the existence of learning technology is needed to be able to facilitate the students' needs in the teaching and learning process. Learning technology will determine the success between students and educators during the learning process in order to achieve learning objectives, in which educators need to prepare a forum or space to motivate students during the learning process. Then, students will have the freedom to show their creativity and potential and ability to absorb and share things.

This certainly will stimulate the ability of other students, because seeing their peers able to argue without feeling awkward. This is what educators wishing for. According to Miarso (2011), the first term related to educational technology and learning media around the 1920s was "visual teaching" in

which learning and teaching activities only depended on using visual aids consisting of images, models, objects, or tools used to present concrete experiences in accordance with the material to be achieved by visualization.

Although only using limited visualization, students have been invited to a high imagination in visualizing the material into real life, at least the goals will be achieved quite well by using that process. The material in a slide form is an outline of the material to be taught and compiled by making the essence of the material from the book. The use of books and slides still complained because the visualization of the material is still minimalist. Material visualization is needed to arouse the attraction for students (Saddhono, Sulaksono, & Rahim, 2019).

Learning process by using visual media which getting develop until it needs to increase or integrate sound into visualization, hence at that time, a new concept was born about learning using audiovisual with the main focus on developing and increasing students' knowledge through the senses of the eyes and ears. The effectiveness of the teaching and learning process is greatly influenced by the factors of the methods and learning media used. It will be one of the students' attractions during the learning process, the task will be more varied so that students have the discretion in doing homework or studying the materials which has been given by educators.

Both are interrelated, where the selection of certain methods will affect the type of media that will be used by educators in providing material and assignments to students. It means that there must be suitability between both of them to realize the

learning objectives to be achieved by students. Although other things also need to be considered in the media selection, such as the learning context, learning characteristics, and the tasks or responses expected from learning (Arsyad, 2002).

Meanwhile, according to Criticos (1996), learning objectives, learning outcomes, teaching materials, and learning strategies are criteria for media selection and production, in which some of these points become an important scourge in the stimulus process. Educational Technology is a field that focuses on encouraging the learning process in individuals to improve the performance.

The learning term in this context is interpreted as an effort made by individuals or students to obtain, store, and use information and knowledge. An expert in Educational Technology must have a capability level to be able to create and facilitate the learning process in a person. The learning process must be able to improve the performance needed to carry out activities and work effectively and efficiently. The use of educational technology in the learning process must be able to change the ways of students studying.

In general, the characteristics of conventional learning are passive recipients of information, where students receive knowledge from educators and it assumed to be a part of information and skills possessed in accordance with standards, namely learning individually, abstract and theoretical learning. Behavior is built on habits, in which an absolute truth and final knowledge. Educators are determinants of the learning process. Good behavior based on extrinsic motivation and interaction

among students who are lack of ability, no cooperative groups and social skills taught indirectly. Monitoring through observation and intervention is often not done by educators during group learning. Educators do not often pay attention to group processes that occur in study groups (Wiguna, 2020).

Seels and Richey (1994) stated that there are five fields of Educational Technology include theoretical and practical activities such as design, development, utilization, management, and evaluation. The design field includes several fields of work, namely the design of learning systems; message design; learning strategies; and student characteristics. Meanwhile, the development field includes print technology development activities; audiovisual technology; computer-based technology; and integrated technology. The utilization field includes media use activities; diffusion of innovation; implementation and institutionalization program; policies application and regulations. The management field has a scope of project management activities, namely; resource management; delivery of knowledge management; and information management.

While the evaluation field has several main activities such as problem analysis or needs analysis; criterion-referenced test; formative evaluation; and summative evaluation. One of the common roles of communication media in learning is to motivate students. Without motivation, the learning process may not produce learning. In addition to technology and media, it is not merely that the role of the teacher to be abolished. However, the technology and media are only as a complement to the learning

process and to facilitate the achievement of learning objectives with a fun and motivating process.

Efforts to motivate students are often made by describing clearly the conditions in the future, where students need to use the knowledge gained outside of school. If a student becomes confident about the relevance of learning to his needs in the future he will be motivated to participate in learning process. The appropriate media to describe the future conditions are media that can show something or describe it. The objectives of motivation and motivate students in a more naturally. Another function of media in learning is providing a stimulation experience. Simulators are tools to create artificial environments realistically can stimulate students to develop their talents and abilities in achieving their future and dreams, even learning objectives and react.

The instructor usually becomes part of the system, provides an immediate assessment, and slip damage to the system to give students practice solving problems in learning, and students can find out quickly their mistakes and correct their mistakes. Communication media often play an important role in simulations. Since students have to communicate information to the machine and vice versa, the machine informs the user about its achievements, with proper handling of students who have a lot of mistakes in some material and it responded quickly by educators. This will increase students' critical thinking to be able to talk about the material more broadly, and improve students' ability to ask questions more often and will increase students' insights. Another type of simulation is a game that simulating a

competitive system with two or more students or learning groups whose interacting with each other.

Although there is a lot of research on the effectiveness of various media, there is no research that explains if a media can or cannot be used in certain learning situations, and no strong theoretical basis that determines what media are most suitable for certain subject matter. The experts see the potential that exists in this media to be utilized for education, it looks great and broad potential of this media to be used as a device of delivering learning messages. Thus, the learning media was generated. This media can reach the objectives of children (students/college students) not only in the classroom at the same time, even it far outside the classroom. It can reach remote targets on the mountains or small islands far from schools or learning centers. By using the teaching media, Sudjana and Rivai (1992) suggest some of the benefits of media in student learning processes, namely:

1. It can foster student motivation to learn because the learning process will attract their attention.
2. The meaning of teaching materials will become clearer so students can understand and allow mastery and achievement of learning objectives.
3. Teaching methods will be more varied, not only based on verbal communication through words.

EDUCATIONAL TECHNOLOGY AND SOCIAL-EMOTIONAL INTELLIGENCE

Nowadays, human life is very close to technology. All the simplicity offered to make humans be more creative create new innovations that along with the times. Humans cannot be separated from the emotions within theirs. Emotions are invisible by the naked eye that often ignored and even rarely discussed from the simple to intellectual sphere. Emotional awareness is very important in the stability of human life. In this case, if humans are faced with an uncomfortable situation, then they will vent emotions upset, angry, disappointed and even sad; contrarily, if humans are faced with a safe and comfortable, then there will be feelings of pleasure, happiness, carefree, joy, and feelings that make humans without burden. The existence of social interactions and emotions in humans is greatly affected how humans behave in their environment.

Social-emotional development is also influenced by technological development. Technology plays an important role in controlling all human activities and affects emotions and social intelligence. The structural-functionalist theory states that something or event will continue to be used as long as it has a function; contrarily, something or event that does not work, then it cannot be used anymore.

Related to structural-functionalist theory, the current technology is very functioning in carrying out and alleviating human activities in daily life, such as washing clothes using machines, increasing air temperatures and making humans

uncomfortable; humans use air conditioning, entertainment and want to know the surrounding events, humans use radio, television, and even the internet easily to be accessed on laptops and smartphones these days. Making payments or bills for credit, electricity, and other household expenses are very easy to use technology; thus, according to structural-functionalist theory, technology influences someone's social intelligence and emotions levels.

This happens because humans can manage their emotions and improve their social intelligence in the use of technology. Conflict theory develops as a reaction to structural functionalism theory. Conflict theory sees social relations in a social system as a conflict of interests. Each group or class has different interests.

These differences of interest exist for several reasons: First, humans have a subjective view of the world. Some people said that a world is a place for someone with clarity mind who can carry out all activities in silence. This world is also a place for learning of life and a place to correct all mistakes so that when he returns to Almighty God, his soul (atma) no longer has karmic debt in this world. Second, social relationships are interrelated relationships or people affect other people.

This is reflected in the social dynamics that exist in the community that the dominant situation/event appears in the environment will influence others to do the same, thus it is not considered as strange. Third, the effect of this influence is the potential interpersonal conflict. In this case, when someone is not able to adapt to their environment, it can lead to conflict within themselves so that the individual will be easily stressed,

depressed, and ultimately withdraw in the environment. Thus, social stratification contains conflictual relations. When someone is in an environment where everyone uses technology, for example, smartphones, laptops, or other objects that support and facilitate activities, then that person will experience inner conflict within himself to immediately have these objects that are received in his environment. The social evolution theory views everything that exists in this world, experiencing significant changes in a certain period.

In the past, the majority of people, especially Indonesia, did farming or fishing activities as their main profession because there were a lot of lands that could be used for farming and abundant marine resources. Nowadays, along with the time development, people mostly work in sectors such as industry, tourism, health, education, offices, services, government offices, and others with advanced technological tools. It called as social evolution.

These days, humans are assisted with technology in carrying out their duties or work, it can be found almost in all society and whatever profession they are doing. In this case, humans are slowly been able to access various features/content within the technology and even able to create things to help human life be easier wherever they lived.

In this context, humans can be said to be technologically intelligent, but without realizing it humans have been slowly eroded by technological flow itself with a lack of direct social interaction. The rapid development of technology at this time has a positive effect in all fields, but at the same time, it can also

reduce the intensity of human physical needs socially. Nativistic Theory/Nativism is a theory which assumes that a person has talent since he was born.

Related to technology, in this era, human can easily use technological tools since a young age and have been able to develop it in accordance with what is needed. It is different from the old people who have not been touched by technology, humans in general still do all the work manually and produce products or anything in a relatively long period. Whereas in this digital age, distance is no longer an issue.

In this case, the role of technology has a positive and useful impact. The empiricism theory is the opposite of the nativism theory because it assumes that a person's potential or trait does no effect on educational efforts. Everything is determined by environmental factors, namely education.

An environment teaches that technology plays an important role in all kinds of human activities, so that is how humans will grow. When humans are faced with the interests of technology, they will learn to use them, thus they will live in an environment that is in accordance with what they obtained. Sastrapratedja (Dwiningrum, 2012) explains that the technical phenomena in today's society have the following characteristics.

1. Rationality means that spontaneous actions by techniques and it converted into planned actions with rational calculation.
2. Artificiality means always making something artificial is not natural.

3. Automatism means in terms of methods, organization, and formulation is carried out completely automated. Likewise, the technique can eliminate non-technical activities into technical activities.
4. Techniques develop in a culture.
5. Monism means that all techniques unite, interact with, and depend on each other.
6. Universalism means that the technique transcends cultural and ideological boundaries, and even dominate the culture.
7. Autonomy means that techniques develop according to their principles.

The technology implementation related to social and emotional intelligence is very dependent on the human environment factor and the human being itself. The more wisely a person uses technology to support his life, the more balanced his intellectual power is in terms of technology without reducing his social interaction in society. Humans are not only intellectually intelligent but also emotionally and socially intelligent as well. This is the expectation of education that creates a balance between IQ, EQ, and SQ (Intellectual Questions, Emotional Questions, and Spiritual Questions).

TEACHERS ACTION AND INTERACTION THROUGH EDUCATIONAL TECHNOLOGY

Education in Indonesia always becomes a public spotlight and usually in every cabinet change, especially the change of the National Education Minister is always associated with new policies, the purchase of new books, and so on. Its impacts are on parents of students as well as the general public. The fact that Indonesia has a low quality of education and it encourages the rebuilding of education essence in accordance with the needs and nature of human life. With the new education philosophy, it is expected that the implementation of education can adjust and harmonize education objectives with the main purposes of human life. Thus, the boundaries of separation can be avoided and the road to the development of human life will become more spacious.

The problem of National Education when referring to education quality, especially on the student quality until now seems to be incomplete to be solved. The factors that cause it are sourced from many sides and dimensions. One of the dimensions of the cause of the poor quality of education is sourced from teachers who not optimally ready to carry out their duties as professional educators.

It can be seen from the results of research that discusses the analysis of student learning environments with indicators analyzed are teaching methods, curriculum, teacher and student relations, and school discipline. The research method used is a quantitative research using descriptive statistics frequency

analysis and combined with qualitative methods to be more in-depth. Researchers collected data by survey methods using questionnaires and observations. The subjects were 125 students from Ferdy Ferry Putra Jambi High School from various classes, starting from Sciences class 1-4 of grade X, XI, XII which were conducted in August 2019. The curriculum applied in schools is good with a percentage of 58.4%. The school discipline established is good with a percentage of 57%. The relationship between teachers and students at school is not good, because it can be seen from the combined frequency of relation answer is not good at 53.6%. The learning method applied in schools is quite good because it can be seen from the combined frequency of answers is already good at 52% (Zain, & Putra, 2020).

The dimension that can be observed are the poor quality of education originates from the teaching staff at educational institutions. Because generally, the teacher does not have it yet a set of expertise and skills in the learning process. Until now, there are still teachers in carrying out their teaching duties in the old learning process which is more inclined to conventional learning concepts.

Teacher creativity is still largely low in designing and developing materials, techniques, methods, approaches, the use of learning resources, and the use of limited media. Thus, if an educator or teacher commits to improving the education quality, then in terms of learning quality, they should look for strategies or new patterns that can lead students to become learning subjects and objects that have high creativity. This can be

realized if educational technology can be applied in the reality of learning in each class at all levels of education.

Besides, because the IQ quality of teachers in Indonesia is on average from the middle to a lower level, who mostly came from poor families. Because since the beginning, the teacher's image has been built which is a poor hero who does not get honors.

If the education world is still managed by people in low welfare, their work will not optimal. On the other hand, if the teacher is poor while the student comes from a rich family, the teacher's words are generally ignored by the student. They even tend to insult their teachers. It is different if the teacher is rich in knowledge and materially, his suggestions and opinions will be obeyed by his students. Due to the inability of the teacher in the material, there will be a lack of learning facilities. Even though modern educational facilities are needed as a source complement of learning media.

Talk about educational success, it is impossible to be realized without a technological approach. There is often a misunderstanding of the technological concepts, the general assumption that technology is only closely related to the machines in the company or industry to produce heavy goods. With this misunderstanding, a wrong perception will occur towards the terminology of the words 'educational technology'. Educational technology is considered as hardware for education. The understanding of educational technology is not the same as technology in companies. Educational technology must think about how to handle education so it can achieve maximum

results. However, after the philosophical justification, it also needs to be complemented by the scientific justification which is produced by some development, research, and assessment activities to produce theories, models, systems, scientific evidence, action programs, and policies.

Technology will have good prospects in the national education structure if it is packaged within the professionalization system framework for its handling. The framework of the professionalization system means that people who involved in handling education are experts (having professionalization) in their respective fields of work. It includes having an educational technology profession in a broad sense.

People who engaged in educational technology should have a mission and commitment in carrying out their main professional tasks, namely the implementation of the learning process for each individual or person. With the development and use of various learning resources that are aligned with the characteristic of each learning and environmental development. Due to the environment is always developing dynamically, it is expected that educational technologists should always keep abreast of these rapid developments or changes. Therefore, we are required to develop ourselves in accordance with environmental conditions and the demands of the times, including the development of science and technology.

With the existence of educated and trained staff and competencies in educational technology supported by various professional organizations, hence conceptually a business will be guaranteed to implement the educational technology in various

institutions organizing of learning and teaching activities. The program can be said to be infinite of its form, type, and amount. Thus, many variations and implementers do not realize that what they do is applying the concept of educational technology. A teacher who applies a group learning strategy using sound recording tapes or pictures, and etc. is an activity to utilize learning resources or implement one of the various educational technology areas.

Educational technology will have an impact on student progress if a teacher is equipped with a set of teaching abilities with a technological system approach. It means that teachers must be professional, mastery the teaching materials, understand the process, able to design learning resources and tools, mastery the administration and management of education in general.

Teachers are considered capable of applying educational technology if they understand, able, and skilled in the learning process. Teachers have to study throughout time, learn the current development and their surrounding environment. The most important thing is learning and practice predicting the intended future.

The challenge of the education world is not only learning the current events but how the current events can be predicted in the future. Communication ability means being able to receive messages from other people (sources), and messages that have been obtained are communicated (transformed) to others. Communication skills in the broadest sense for a teacher is they can convey messages outside the education world that used as reference material to be conveyed to students.

The message or material will arrive at the destination (students), thus they used a good tool/media, searching, methods, and techniques to deliver the materials. Besides, the teacher must be smart in designing instructional programs that will be implemented in the classroom.

The material is made by using a simple language and easy to be understood by students. The examples are included in each material during the learning process that useful for students to understand the learning materials. The examples are also equipped with different colors to facilitate students in understanding the examples. The exercises assigned to students, its aims to make them easier to understand the material and increase mastery of the material provided by educators. The exercises set out in unit 1 are different from the exercises in unit 2. The exercises given with essay answers from students relate to intrinsic elements about short stories that contain character values to be written (Anisa, Siswanto, & Pratiwi, 2020).

Teaching and learning activities are the main activities in education. Everything that has been prepared and programmed will be implemented in teaching and learning activities. The teaching components will be processed in it. The main component of learning is when teachers and students carry out activities with tasks and responsibilities based on normative interaction to jointly achieve learning objectives. In managing teaching and classroom management, teachers need to pay attention to students' differences in biological, intellectual, and psychological aspects. The purpose of these three aspects will help in determining the grouping of students in the classroom.

Educative interactions that will occur are influenced by the way teachers understand the individual differences of these students.

Solfema states that some andragogy principles must be applied by an educator in selecting learning material, namely, the material must be presented based on the student's needs. For example, the material that has been mastered by students do not need to be presented or only explained it briefly. Students cannot be forced for mastering the material at the same time, the learning materials must be interesting to students and it relates to students' past experiences, and there is a balance between practical learning material and theoretical learning material (Martina & Irmawita, 2019).

The interaction that occurs in the classroom during the learning implementation is the interaction of educators with students and interaction between students and students. In this case, the optimal activity of students greatly determines the interaction qualities that occur in the classroom. Thus, the teaching and learning activities in any are form determined by whether good or not the planned teaching program and will affect the learning objectives to be achieved.

Learning is not just memorizing nor remembering. Learning is an effort or process that is expected with a fundamental change in a person. Changing as a result of the learning process is shown in various forms such as changes in terms of cognitive, affective, psychomotor, skills, reaction power, understanding power, acceptance, and others that include individual aspects.

Through these descriptions, the teaching process must be directed at systematic arrangements so that there is relevance to the learning activities process. In this case, teachers as a subject are required to understand the basic desired references and student's needs. Essentially, the teaching process is the teacher arranges, organizes the student's needs to encourage the motivation for carrying out activities that refer to achieving goals.

ANOMALY OF EDUCATIONAL TECHNOLOGY

Human life is in the circle of life, where each circle of life is influenced by the time period. Likewise, with technology, revolutions in technology have occurred many times. Therefore, technology is part of the knowledge developed by human thinking ability. Suriasumantri (1999) states that humans are a homo sapiens or thinking beings. He revealed that thinking is a process that produces knowledge. This process becomes a series of civilization movements along with the times. Thus, the thought process that produces knowledge becomes the forerunner to the emergence of technology.

Based on the description above, technology is a vital part of the circle of human life, just like technology in education. It can be studied in the 4.0 millennial era learning process that cannot be separated from technology. For example, when Indonesia experienced COVID-19, the education system in Indonesia was simultaneously shifted to online learning for more or less than 15 days. Internet-based learning known as online learning is the implementation of distance formal education that aims to improve equitable access to quality learning.

Online learning is a prominent part of educational technology development in Indonesia these days, with the aims of the learning process between students and educators still continuing even without face-to-face. Technology in the field of education makes it easy for educators and students to access teaching and learning material, to acquire and interpret knowledge, and to develop themselves through direct and

indirect learning experiences. Besides, educational technology provides space for educators (teachers) and students to work in online media and download information easily. Educational technology also provides other advantages including computer-based learning, e-learning, blended learning, digital libraries, the use of teaching and learning activities (KBM) supporting technology tools (teaching and learning activities), and etc.

It is said that technology simplifies all human activities. Besides, technology is assumed as a double-edged sword. In other words, the ability of educational subjects to control the sword becomes the main case, given the positive and negative impacts of the technology itself. Besides, the ambiguity of the younger generation in formulating information transformation systems certainly invites technological anomalies. It means that the younger generation (read: students) are familiar with information technology, that knowledge can be downloaded easily without any boundaries and dimensions. On the other hand, those who are accustomed to being facilitated by technology become increasingly submerged by the comfort zone and become addicted to it.

The description above is sharpened by the strong usage of this technology which does not been matched with qualified wisdom and knowledge. Students still use this technology for euphoria and self-existence, such as playing games, watching videos or films on YouTube, online on social media, taking selfies, and updating status at any time. If technology is utilized in education, students tend to do a copy-paste system in doing work and reluctant to read literature. The worst possibility as a

result of the students' inability to allocate time in the use of technology is they can create inter-family gaps. Nowadays, families tend to be pragmatism-materialism.

This certainly becomes a hard slap for the education world, especially formal education which is academically known as a vehicle to educate the life of the nation. If technology anomalies are allowed to continue without balanced knowledge, it is feared that instant or pragmatic lifestyles will easily be adopted by students, which will ultimately lead to attitudes and behaviors that far from the morality of this nation, religion, and country.

Quoted from Albert Einstein (1879 - 1917) a 1921 Nobel Prize-winning scientist stated that science without religion is blind and religion without science is paralyzed, synthesizing that to mastery a human technology, it must balance between science and religion. Einstein's statement becomes a reflection of students to be balanced between science and technology (IPTEK) and faith and piety (IMTAQ), also continue to actively move and behave along with the times. This is intended so that later the younger generation does not have a narrow understanding, namely deity a knowledge as the only truthful source or frighten science as opponents of religious truth.

Related to the case above, as the next nation generation, as the backbone of the nation, as the nation and state development relay, it is important to make religious teachings a foundation, guide, guidance in utilizing and using technology for the students. It aims to what they had a dream for can be achieved as expected so that they can appear as an intellectual and religious young generation as well as humanist characters. The character

is characterized by behavior that can embody religious teachings into technological transformation in daily life, which not only gives benefits ourselves but also family, community, even the nation, and state.

MAXIMIZING THE ROLE OF TECHNOLOGY IN EDUCATION

Technology is a knowledge that can provide learning about skills in creating tools, learning methods, data processing to help solve various problems and jobs faced by humans in daily life. Technology makes people easier to get information and other things.

In modern life these days, people are very dependent on technology, because technology can help humans' activities. Starting from skillful people to ordinary people using technology in daily work. The current technology has developed rapidly, far different from the past.

Technology is very influential in aspects of life and plays a role in education. In the field of education, technology has its role both in the teaching and learning process. The rapid development of technology nowadays that cannot be denied it anymore of its role in the education world.

The global demand that always requires educators to adapt to technological developments in improving the education quality, especially in adjusting the use of these technologies in the learning process. The change in technology demands make educators have creativity and innovation in the learning process, but there are still a few people who provide solutions to their problems-solving. Several factors that affect the quality, as quoted from the Implementation of Internal Quality Guarantee System to Increase the Quality of Education in Junior High School 21 Malang research found common factors that affect the

results of school quality report cards. Besides, some inhibiting factors influence the implementation of internal quality assurance systems such as the lack of supporting facilities in the process of improving school quality (Rahmania, Budiono, Soenaryo, Syakur, & Tinus, 2020).

Problems faced about the teaching and learning process becomes the global demand of the 21st century nowadays. In addition to teachers, technology also has roles for students, namely: a. Technology becomes an online media, b. Electronics books or a technology as a substitute for the manual books in every school, c. The current technology can also be used as a media for group learning, d. The current technology also makes students and teachers easier to find other references by accessing *Google*. Technology makes students easier to get announcements and other news.

The purpose of technology in teaching and learning is to be able to solve problems in the learning process and to improve learning performance. a. To solve problems in the learning process. The problem in the learning process so far is located in the teacher and students, where students are less focused on receiving learning in class or the knowledge gained or delivered by the teacher. Another thing that becomes an obstacle is an uncomfortable classroom. On the other hand, some teachers still experiencing difficulties in managing classes during the teaching process, thus what is conveyed has not been well received by the students. From these problems, it is expected that educational technology can provide a solution.

b. To improve the performance in the learning process, in which the educators who teach using chalk or markers can indeed still provide comprehension, but compared to a teacher who explains the material using the LCD projector, which one is more effective?

The use of technology as now or by utilizing the projector LCD as a medium. Because with LCD projectors, there will be a lot of teaching materials is delivered and students can be understood easily. With the use of these media, students become more stimulated and focused on listening and receiving the material being taught, in which the teacher can put a video about the material being taught, hence students become more interested in paying attention. Based on the explanation above, the role of technology in the education world that there are several principles that can be used as a reference in its development and utilization, namely: student-oriented, as a learning source and as an information system approach.

Student-oriented means that all activities in the classroom should be focused on the student, which is by paying attention to students' interests and potential. As a learning source means that in the teaching and learning process, students should be able to use technology to access the knowledge, talents, and interests of the technology, with guidance from the teacher.

As an information system approach means that the organization of teaching and learning needs to be designed with information that is easy to be understood by students, namely by the use of technology such as the use of LCD projectors in teaching and learning in the classroom. Therefore, the teacher

needs to design a strategy through structured steps which include: identification, analyzing, objectives, methods, media, and evaluating learning outcomes.

In this case, the teaching and learning process is more directed, efficient, and effective, because it has been designed with certain stages starting from identification to evaluating learning. In addition, learning becomes more flexible, interesting, innovative, and diverse, because teachers do not only use one media but can use various learning resources and media, thus students can learn wherever and whenever they can learn, or get the information needed by these students. With the advancement of technology these days, it is very helpful in the education world and can also lead to profit and loss. Education as a foundation in the future of a nation has experienced several changes along with the times. Technology is constantly changing from time to time in accordance with the demands of the times, which can facilitate us in accessing information quickly. However, along with technological advancements like these days that are fast-paced, there are also some positive and negative impacts.

The positive impact of technological advancement: - Very helpful in the learning process, because the information is faster and easier to obtain. - The teaching process in the classroom conducted by a teacher will be easier with the help of technology, makes it easy for students to communicate with each other and with their teachers when outside the classroom or teaching and learning process. Facilitate the administrative activities of educational institutions.

- The emergence of technology in obtaining various sources of knowledge in the education world, such as Computer Labs and internet networks that can facilitate students in getting information, then a teacher is not the only source of knowledge as before. Because of that, students not only focused on the teacher during receiving and obtaining information, but students can access it through the internet which can be accessed in the computer room in the school.

Thus, teachers in schools are not only as educators, but teachers can guide students in running, monitoring, or directing the learning course in school, so students do not use it wrong in using communication and information media in the learning process. - The learning process does not have to be done face-to-face, but it can be done without it between teachers and students. It can be done with the help of technology like which is can be accessed by online media.

The development of current technology, which in the past all the tasks are done manually and it takes time. However, nowadays all of these tasks can be done easily, namely by the use of technology such as computers. - In the fulfillment of educational facilities can be met quickly, because in the education world many things must be prepared. For example, in the procurement of questions for the exam. However, with the help of a photocopy machine, these problems can be overcome.

With advanced technology like these days, the activities that usually require a long, it can be done quickly now. The advanced technology also has a negative effect, namely: - Some sites are less educational, such as porn sites, online gambling, and others.

- The development of technology also makes users lazy in doing other things, for example in helping parents because they focused on playing games. - There are criminal acts committed by irresponsible people with internet technology intermediaries.

With advanced technology, electronic media as a source of knowledge is often misused by students. However, these things can be minimized by monitoring and teaching by teachers and parents of students. Thus, we can utilize technology appropriately to help our daily life.

Therefore, it is important in giving monitoring and teaching about technology, hence students can use the technology correctly and wisely.

TECHNOLOGY UTILIZATION IN RELIGIOUS EDUCATION

The development of the world these days on facing the 4.0 industrial revolution era which is aimed at the development of a robotic-based digital world makes this world fast-moving. With the rapid development of technology in the world, it should be accompanied by our readiness as a young Hindus generation in responding to these developments. Things we need to do are keep up with technology development that we use for the humans' enlightenment and education, thus it can be created a young Hindus generation who are intelligent in terms of physical and spiritual. In implementing this case, it must be supported by the media.

Media is a tool used as an intermediary to deliver information from its source to those who receive the message. Media has a big role in whether or not the information delivered smoothly to the public. Thus, the updated innovations are needed to an interesting media as an intermediary and people can easily understand the messages. In this case, the media relating to information about how to process the data into information in a place, which later becomes knowledge. It called as information technology. Furthermore, in discussing religious issues that are derived from the basic word 'religion' which can be described as the order that regulates or controls the spiritual attitude of humans in believing in God. Religion serves to enlighten humans' conscience and body in carrying out all aspects of life in the world. In Religion teaching, it contains rules/sacred verses

that come from God through the intermediaries of saints (*Rsi, Bhagawan, Mpu, Priest, etc.*).

The essence of humanity in serving religious teachings is to have a belief. In Hinduism, it is explained that there are five beliefs called *Panca Sradha*. The teachings of the *Panca Sradha* are believed by Hindus in their application in daily life. In this case, based on the understanding of religion, in the application of information technology, especially in Hinduism, the media-related to Hindu Religion is needed and it will play a role as a device for processing news and information related to Hinduism. It will become an information device for the development and dynamics of Hindus' life.

This is in accordance with the description, further explanation will be discussed later. In facing the life of the digitalization era as a young generation of Hindus these days, we should address this by following times period, thus civilization and the development of Hinduism are not considered as classical religions. Hinduism is a flexible religion and in line with world civilization. Hinduism still exists when technological and information developments occur rapidly. This can be supported by the development of Hindu Religious Media, which is always updated in the delivery of messages and religious pulpit so that people as connoisseurs can receive it well. In terms of the Hindu Religious Media development, it can add the information to the society through the Ministry of Religion and other stakeholders regarding religious teachings and rituals, hence it will become a media for the intelligence of the people.

Besides, through Hindu Religious Media which can increase the spiritual knowledge of the people and strengthen the faith (*shraddha bhakti*) and increase the religious insight of the people. According to Hindus, *Sradha* and *Bhakti* are found in *Panca Sradha* which consists of *Brahman* (Belief in the existence of God), *Atman* (Belief in the existence spirit), *Punarbhawa* (Belief in the existence of reincarnation), *Karma Phala* (Belief in the existence of a karma) as well as *Moksa* (the highest purpose of Hindus).

Panca Sradha itself can be a reference for Hindu in the religious life in this world which based on the devotion of the people towards God and his creation. Based on this explanation, Hindu religious media which are still traditional, it needs an update, both from electronic media (radio, television, cellphone, etc.), print (newspapers, magazines, journals, etc.) and online (internet). The development of Religion should be increased through scientific and contemporary studies, as well as breakthroughs from college, especially those which have a religious background. It is expected to be the pioneers of change that package religious matters with contemporary things that are easy to be understood and the intelligence of the people living their spiritual life.

The development of science which at the same time with the development of IT technology (information & technology), it should open our eyes as a young Hindus generation to be able to find the latest innovations in packaging religious presentations in the present. For example, many academics write articles and journals that are in accordance with religious teachings and

competent references as an effort for religious counseling through internet media. Besides, the learning system through online religious pulpits both from Facebook, YouTube, and other applications that are easy to be accessed by people in a region or outside the region or island even between countries.

In addition, by utilizing applications such as *Zoom* or *Google Hangouts meet*, we can have a meeting with many people with limited distance. For example, in this condition where COVID-19 virus spreads over the world that requires some people to stay at home, similarly in Indonesia. This application can be applied in order to have a meeting that discusses religious activities issues such as Nyepi in this year.

The leaders of Hindu religious organizations such as PHDI, PERADAH, WHDI, and social organizations in Bali, such as the administration of the *Desa Adat*, *Sekehe Truna-Truni*, and others. They can use these applications in conveying the latest information and decisions to other members of the organization to be conveyed to the people. In the formal education technology-based Hindu religion can be developed in accordance with information technology. Various benefits can be obtained if the Hindu religious learning system is packaged with the latest technology, such as the use of computers in learning activities at school which can help the material development for students, the teacher packaging the learning process so that it seems interesting to students.

Certainly that the use of computer/laptop devices must be supported by adequate tools such as equipped with internet access for the development of teaching materials for teachers

besides based on textbooks. Besides, the benefits for students with a computer/laptop device equipped with the internet is it can make it easier to explore learning materials with various sources on the internet, and it easier for students to make assignments by typing and using power points during presentations at class.

In the deliver the computer-based material in the classroom, it should pay attention to things, namely: 1. Delivery of teaching materials to students is done repeatedly to make it easier for students to remember and memorize the stages of learning (drill and practice), 2. Conveying the lesson stages from the beginning to the practice directly to students (tutorials), 3. Practicing directly to students after making learning tutorials or procedures (simulations), 4. Giving problems to be solved by the student either individually or in groups about subject matter delivered in class (problem-solving) and 5. Provide games in the learning process in the classroom to stimulate students 'thinking power and responsiveness according to the teaching material that has been delivered (education games)' (Handriyanti, 2009).

Based on this description, it can be a reference to implementing Hindu religious media in the field of education (formal), which will have a major influence on the development of students' output quality. These things can be used primarily by teachers and lecturers later to face with technology and information-based learning. In addition to the formal education process, the use of information technology can also be applied to non-formal education systems. Non-formal education is an educational activity carried out outside of school in the form of

exercises and guidance to students. The example of non-formal education in the religion field, namely dharma discourse activities (*dharma wacana*), arts education, religious pulpit that followed by people.

Non-formal education programs are designed based on the path, unit, type, and scope of non-formal education. Non-formal education is a path beyond formal education that can be carried out in a structured and tiered way. Several programs are held by each sub-district in Pati Regency for its development. Almost all non-formal education programs that are implemented run well. There are only one or two programs that do not run well because they experience obstacles within and outside the institution (Fakhruddin, 2019).

In the education process, it can be supported through attractive displays, such as when dharma discourse (*dharma wacana*) contains interesting and easy to be understood such as the addition of video or audio. Nowadays, people tend to be more interested in interesting and unique things, thus through the use of information technology, it can help the intended education process. In the use of attractive religious media, it must be supported by competent and reliable educator resources, thus we must synergize between relevant institutions both the government and education practitioners. Therefore, they continue to conduct education for educational institutions in order to increase the insight of educators and can master information technology.

Sharing session is needed from educational institutions with educators, thus the process of exchanging ideas and information,

and current breakthroughs can be obtained in order to create a better and valid, and accountable educational process. The development of Hindu religious media in its role in fostering Hindu society is inseparable from the development of instructional media designed to create a better learning system for education in schools (formal) and education outside of school (non-formal).

The development of Hindu religious learning media is developing following the progress of information technology, along with the global world development, thus the development of information technology becomes a sign that the news and information field develop rapidly these days. This is good news for our education world, especially in terms of packaging education to be more interesting and certainly easier to accept. Therefore, the development of information technology needs to be adopted in covering academic things to be accepted by the public. As well as Hindu teachings that deliver its materials through updated technologies and it can dismiss the notion that Hinduism is labeled as a classical or ancient religion.

EDUCATIONAL TECHNOLOGY AND THE EFFORTS TO IMPROVE THE QUALITY OF EDUCATION

The introduction to education is very important for human life, with education, a person can be a qualified human being, a wise human being, and a human who can improve their standard of living.

Education in Indonesia is still lagging behind Malaysia and Singapore, there are many contributing factors, but why Indonesia is lagging behind in the field of education, one of them can be seen from the lack of interest in reading books in their society. A country with advanced education can be seen from the situation of their society who have a big interest in reading. Nowadays, it is very important to utilize educational technology.

Educational technology emphasizes the process of the students' experience, therefore, the knowledge will be more easily understood. In educational technology, there can be acts of learning that are not intentionally designed such as the use of radio broadcasts, television, and museums. Education can be done anywhere and anytime in a place that suits the needs of students.

If education is defined as an experience, education can last as long as humans live. Formal education is only one of the many ways to gain experience that can be expressed as learning. There will be many innovations in utilizing this educational technology, therefore, the students will not be easily bored with the learning process carried out by teachers at school.

The use of educational technology in the learning process will be favored by students, the use of innovative and creative educational technology will help teachers to transfer their knowledge to students, therefore in the end the quality of education can improve. The meaning of technology is a complex, integrated process and includes many components such as people, ideas, tools, and organizations to analyze problems that cover all aspects of learning, planning, assessing, managing, and solving problems. Educational technology is a tool to facilitate learning. Technology here is not just a matter of physical technology (hardware) but also software technology (software), when we think about “technology” in our minds it must be a hardware and software. Therefore, in the learning process, it is not enough only through complex and complicated communication technology.

Educational technology will facilitate the process of learning. The rapid development of technology makes learning fast and effective. In the past, it was very difficult to get a book especially in the remote areas, they only relied on the teacher as a single source of the material. Nowadays, the development of technology is very different from the past, technology brings changes to the education world.

The utilization of educational technology as much as is proper the educational institutions begin to utilize educational technology, the use of educational technology becomes important, to transform the knowledge to the students with the progress of the current development will be left behind if it does not utilize the educational technology in transforming the knowledge.

Teacher as an educator must be creative to utilize various tools in supporting the educational process by utilizing technology, a teacher will be faster, easier, and innovative in the process of delivering a lesson. Through the use of educational technology, students do not have to meet their teacher face-to-face, therefore, the learning process can take place anywhere and anytime.

The other benefits of educational technology are as follows:

1. Helping teachers use an effective and efficient learning time, making it easier for teachers to teach, teachers can be more focused on improving children's creativity in learning.
2. Provide individualized educational opportunities and reduce the control of teachers who are still traditional and rigid, provide opportunities for students to develop according to their abilities, and allow them to learn as they wish.
3. Presenting a broader education that can be used primarily through mass media that cannot be bound by space and time.
4. Improving students' learning interest, with the technology, teachers will be more creative in conveying their lesson, so that the learning process does not seem monotonous and then the students will be passionate about participating the learning process.
5. The utilization of educational technology will facilitate the achievement of the learning objectives.

Educational technology is broadly used and has many benefits.

Weaknesses in the educational technology: In addition to having benefits, educational technology also has its weaknesses, because each system must have advantages and disadvantages, if weaknesses are already known, the system improvements will

be done immediately, and thus the operation can be carried out properly and can be used by many people.

Weaknesses in educational technology include 1. Teachers who cannot use the electronics or can be called a technologically illiterate, thus, a teacher should improve their self-quality and keep up with the times because the development of technology in this millennial era is very fast. A qualified teacher will produce a qualified student as the output. 2. Educational Technology facilities and infrastructure are quite expensive, for example, laptops or cellphones which have a certain capacity can be expensive for the under-class students, especially those who are live mediocre found it difficult to have a laptop or cellphone facility. 3. Limited facilities and infrastructure in schools are also a weakness, for example, the difficulties in finding an internet network, especially in remote areas will be difficult to get an internet network. 4. The use of educational technology also needs supervision from the teachers and the parents of the students, especially for the internet and software, this supervision is important so that its use will not be misused by students. Therefore, its use brings benefits. 5. Students who do not have the enthusiasm and motivation to learn tend to be failed in mastering this educational technology, although the availability of facilities and infrastructure is complete but if students do not have the motivation to learn and tend to be lazy, they will not be able to understand it. This educational technology will be mastered if they are diligent in practicing and often to use it because the real problems will be discovered while practicing, then these problems can be consulted with teachers

or friends who have mastered educational technology. Educational technology is very important to be understood because there will be many benefits by utilizing educational technology.

The learning process can be done without having to face-to-face, students can learn, discuss, or have meetings over great distances. Nowadays, a person can be left behind if he does not understand educational technology, because the technology is developing rapidly, the utilization of educational technology is a must because it can facilitate us in the learning process. The appropriate utilization of educational technology will be able to improve the quality of education.

ONLINE-BASED EDUCATION

In modern life, human survival is more dependent on the results of the technology that has been developed rapidly. The development of technology makes it easier in all aspects of life, such as ordering food at this time can already use a smartphone application, but not only to order food, other things also include services, transactions and goods purchases that have been very easy to negotiate or deal through the online media. The education world is inseparable from the influence of technological development.

The process of teaching and learning activities is greatly assisted by the presence of media that can be used to present the visual and audio material. For example, the material presented with PowerPoint display can make the display of material becomes more interesting, it can be seen by students (listener) thus, the delivered material will be easy to understand, besides, we can add videos that are equipped with the use of sound systems that can produce the audio, therefore, the material will be more interesting and not boring.

"Educational technology" or "instructional technology" in English means the education that emphasizes the educational media thus it can develop the education rapidly. There are several definitions of Educational Technology:

1. According to AECT (Association of Educational Communication and Technology), Educational Technology is an integrated complex process involving equipment, ideas, procedures, people, and organizations

for the problem analysis process, finding problem-solving. Conduct the evaluations and manage problems related to all the learning aspects of human.

2. Educational technology is the application, development, and evaluation of systems, methods, techniques, or tools to improve and upgrade the learning processes of the student. *Google* as one of the big companies is actively engaged in the development of technology especially in the field of education. It has been very creative in making applications that can be used in this digital era.

Some applications offer features for the teaching and learning process between teachers and students can be done without being disrupted by distance or time. Reflecting on the condition of our country, Indonesia is a tropical country that has a high rainfall season. Even nowadays, floods can be found everywhere which causes the teaching and learning process is interrupted, sometimes the teaching and learning process must be stopped because of the environmental conditions do not support.

This situation should not be repeated, because *Google* has provided applications which support the processes of teaching and learning, place and time will no longer be a limitation in all activities and the academicians can carry out the teaching and learning activities well. The improvement of technology is not only used in the field of education process but it also can be used as a facility in the process of limited meetings that were recently held by the Ministers, Commission X of DPR and related institutions in making decisions on the omission of the National Examination (UN) in 2020.

The limited meeting was held as the impact of the COVID-19 pandemic forcing people to do social distancing. As a result of the pandemic, the meeting was held via the application without reducing the purpose of the discussion. In fact, the leaders were able to make a big decision even though they only using the electronic media, it proves that everything can be done anywhere, the discussion is no longer depends on the distance, instead, it can be carried out anywhere without reducing the purpose of the meeting. In addition to the many benefits, of course it has several obstacles in utilizing this technology in the education world.

1. The Benefits of Technology in Education

- a. **Simplify the Presentation of Material.** The presentation of material becomes an obstacle for teachers in teaching and learning processes, by using media such as power points, it can help display the material concisely to students and make it more easily understood.
- b. **The Material Reference.** The material in the learning processes is already widely available on the internet, it can be used by the teacher as an additional reference and it also requires the creativity and activeness of the teacher in enriching the material for each subject that is taught.
- c. **Improving Student Ability.** Students are free to access the learning material on the internet, it should be a plus for students, they can easily study at home and they can ask questions that they don't understand when they are already in class.

- d. Facilitating Communication Accesses between Students and Teachers. Technology in education facilitates the process of communication between teachers and students, for example by using the email, students and teachers can communicate formally and send the requested tasks on time.
2. Educational Constraints / Problems with Technology
 - a. Educational technology depends on the signal or network. In accessing the internet, we need a stable network, it can be a problem when there is no stable network available.
 - b. Must be with Extra Control. The freedom of internet access is sometimes misused by students, for example, it is used to access sites that should not be accessed.
 - c. Inadequate Human Resources. Students are born in the globalization era must be familiar with the use of media and the process of accessing the internet. This is inversely proportional to the condition of the teaching staff who are still technologically illiterate, therefore, in the process of accessing, it often experiences obstacles and problems. It must be supported by training to provide an understanding of accessing and using /operating the internet or applications.

The government and the educators should be more creative in providing ideas in the field of education, especially providing training to the teachers who have not mastered in operating the computers or the internet, because if a technology-based education can be developed properly, it will certainly be very helpful in teaching and learning processes.

By the existence of the educational technology, the educational process will no longer be disrupted, due to the limitations in distance and time, for example, the process of conducting the thesis guidance can be done from a distance to make the time more efficient, thus, the revisions can be typed directly on the Ms. Word and provide comments as a result of the revision, then correct it immediately according to the guidance of the supervisor. This type of guidance methods can be an option for the supervisors who have a busy schedule and cannot conduct intensive guidance, also, this method can reduce the use of excessive paper and it can reduce the tree felling as an effort to solve the global warming.

There are many benefits from the process of using educational technology, besides, to make the time more efficient, there are many other benefits that have been described above. Technology-based education is now often to be the first option in the education process. It can indirectly serve as a training process when the teachers are used to using it, especially for teachers who do not understand how to operate it, also, they can consult with teachers who already understand how it works.

Teachers should be able to be the main movers in the education world following the current development, the young generation as the spearhead of the nation must be facilitated with the modern lifestyle that increasingly encourages them without reducing the character education that can still adopt the eastern culture in this country.

As stated by Siti Lestiawati and Rahmita Nurul Muthmainnah that education is a means of shaping one's

character to create quality and competitive human resources. To achieve this goal, collaboration is needed from various sectors including government, education stakeholders, and families. Learning mathematics is the process of interaction between teachers and students to get new information related to mathematical knowledge, to change students' mindset and behavior (Lestiawati, & Muthmainnah, 2019).

This collaboration will certainly be maximized by adopting the modernization for the sake of an accurate, effective process, and being able to utilize the technology, but the formation of character is still based on the Pancasila and the local cultural wisdom in each region, because with permission or not, this modernization culture which is always associated with the technology will always follow every step and every second of our lives.

It would be nice if the education has become accustomed to using facilities which in fact, it can make the students become more interested in learning and make the education more become efficient without reducing the effectiveness and not deviating from the goals of education itself.

THE DISADVANTAGES OF EDUCATIONAL TECHNOLOGY

When talking about technology, it certainly cannot be separated from machining, starting from typewriters, television machines, cellphone machines, and even car engines, etc., all of that is already very familiar for the people, but is technology limited to machines? Exactly not! Technology can also be a device in a machine, it can also be an application device and others. Now we are familiar with the millennial era, also often called the 4.0 industrial revolution, it is an era that is all about technology, even often called the world at the palm of your hand. Banu Prasetyo and Umi Trisyanti (2018) stated that the 4.0 Industrial Revolution fundamentally resulted in changes in the way humans think, live, and relate to one another.

This era will disrupt the various human activities in various fields, not only in the field of technology, but also in other fields such as economics, social, and politics. In the economic sector, it has been seen how the transportation service sector arises from the presence of online taxis and motorcycle taxis. The same thing also happened in the social and political fields. Social interaction becomes unlimited, because of the ease of internet access and technology. The same thing also happened in the political field. Through digital ease of access, people's behavior began to shift. Now, political action can be collected through social media-based movements by carrying out certain political ideologies.

But behind the convenience offered, the 4.0 Industrial Revolution saved a variety of negative impacts, including the

threat of unemployment due to automation, natural damage due to industrial exploitation, and the rise of hoaxes due to easy dissemination of information. Therefore, the key to dealing with the 4.0 Industrial Revolution is in addition to preparing technological advances, on the other hand, it is necessary to develop human resources from the humanities side so that the negative impacts of technological development can be reduced.

All the effects of the 4.0 industrial revolution can only be controlled through education. Education itself is a process that is passed by everyone from birth to death. Education is very important to undergo, starting from education at home, at school and also in the community, because every experience gained is education, everyone can be a teacher, every place can be a school and every event, activity, and experience is a lesson material that must be learned by everyone.

The media of education itself is unlimited, everything can be used as media in education. Education will never be separated from technology, from the past until now technology still exists in the education world, technology, and education like a human who lives with clothes, Education will feel stripped without technology.

Education will bring up new and more innovative technologies, but technology also becomes an educational development tool that develops like grass in the rainy season. From technology, we learn that education is the process of increasing knowledge and skills, even in human attitudes. Even, reading one short article will increase knowledge, watching one video can also increase human skills in listening, seeing an event

on social media also becomes a human guide in determining the next attitude.

As if the technology becomes a teacher, a school, and a media in every educational need. In the education world, technology is like a breath. Almost all things require technology, starting from administrative arrangements, Computer-Based National Exams, even manual exams need technology to print the question sheets before being distributed to students, especially in this era, many applications must be done by the school operators, providing all pieces of information via online, what would happen if in the 4.0 era without technology?

The rapid development of technology and with the many facilities set up by *Google*, there are still many facilities that have not been used by teachers or students, hence, its utilization has not been optimal, based on this problem, it needs socialization from the authorized government with the effective use of technology, for example, until now, *Google Classroom* has not been widely used, the constraints experienced are not known yet, on another hand, there is not enough signal in the remote areas, thus, sometimes when using the email you have to look for a high place or go to a village just to find a good signal, this is an important task of the government to prepare all the facilities.

Behind the great technology in human life, it can be limited without a signal. The communities have assumed that every place has received a signal, but unfortunately, that assumption is not right, because until now there are some places that are completely unreachable by signal, is education and technology unable to work because there is no signal? Of course, you still

can, but the operation will be a little hampered because most technologies need signals to access them. The use of technological tools in the education of children in rural areas with urban children is certainly different.

Almost all city children use cellphones as a tool to increase their knowledge (as previously explained) with an adequate wi-fi signal or voucher, but different from children on the rural areas, without wi-fi and sometimes, their cellphones only contain voucher but not getting a signal, then how do they access the internet? Actually, both of them are national assets that really need attention in terms of technology, if there is no justice for internet access, it can be imagined that children on the rural areas will be lagging behind in using technology, sometimes Computer-Based National Exams or often abbreviated as UNBK should move to a place that can be reached by students, then they can follow the great work of the education world.

Educational technology has an important role in improving the Human Resources (PSDM) of Indonesian children, with technology, education should not always be at school and not always with teachers, because actually everything can be accessed remotely (especially in urban areas), we never know what will happen, for example, COVID-19, who knew the world would suffer because of COVID-19? Do we know that in 2 weeks we will have a study online? I think no one knows.

When COVID-19 spreads to almost all countries in the world, Indonesia implemented a system of learning from home, working from home, worshiping from home. Thus actually we need to learn from COVID-19, because of it, we become more

familiar with the use of technology, in the beginning, not all teachers use *Google Classroom* to teach, but because COVID-19, teachers, and students are together learning to use it, from the beginning they did not know how to use it, COVID-19 is really great, it can change (temporarily) the education system which until now mostly uses a face-to-face online system, all of us begin to learn about technology.

Isn't it because of COVID-19 we know about educational technology? Maybe yes, maybe no. Reflecting on it, besides COVID-19 changing (temporarily) the education system, it also makes us learn to increase the role of technology, which means that in good situations we can use new technology (which is only known) in the teaching or learning process later.

It is also to prove that we are really in the 4.0 industrial revolution era, not just a discourse. But unfortunately, study online cannot be followed by all students, because the students find it difficult to get a signal (internet access) on the other hand, not all students have adequate technological tools for it. A comprehensive overhaul of justice is needed, thus, all regions can access the internet.

In addition to the educational technology that is utilized because of COVID-19, COVID-19 also provides lessons on how important it is for us as good citizens to comply with the appeal, instructions, or prohibitions from the government. The dissemination of information about COVID-19 also we get from the existence of technology, therefore, the information spreads so fast from one person to another, let us imagine if there is no technology. Is it possible to hear that information as fast as now?

The current technology is very great. Technology is not much different from other objects, it also has an impact on life. The impact of technology is very diverse because every real or abstract object has two different sides. But we are sometimes not aware of it, which we rarely forget about a knife which has two sides there are sharp and blunt. Actually, technology can be equated like a knife, It depends on how we use it, when we use it properly, correctly, and wisely following the purpose of the creation of technology itself, it will bring us into the modern life that is far more advanced because not infrequently people can succeed because of technology, it all depends on how we use it, and on the other hand, if we use it poorly and do not consider the negative impact of the technology itself then it can bring us devastated, as we often see on the social media, some people get sick because playing games too often, some irresponsible netizens spread hoaxes that make people feel uncomfortable and many other negative things, even the odd things often occur when we are too familiar with the technology.

Behind all of these things, signal as the main supporter in accessing the internet is needed with the existence of technology, indeed technology is not only about the internet, but it is still very important in the use of the technology itself.

EDUCATIONAL TECHNOLOGY AND STUDY AT HOME

Educational technology is a science that can be used by humans in the learning process both inside and outside the classroom. It can be learned from various aspects and interests. Except for educational technology as a field of scientific study, it always developing following the development of science and technology that supports and influences it in the education world. At the beginning of its development around 70 years ago, educational technology was often associated with the presence of equipment, especially in the form of *ruparungu* (audiovisual).

This equipment can only be used as a teaching aid in teaching and learning, this development is referred to as the first paradigm. This first paradigm is still used by principals of teaching and learning carried out inside and outside the classroom, because these tools can make it easier for teachers to do the process and also make it easier for students to understand the learning material to be conveyed because the learning process can be carried out and run more interesting so that it can eliminate the saturation while studying.

The next development or the second paradigm departs from the systems approach and communication theory in educational activities. Communication is a very important thing to do, especially when doing the learning process, good and correct communication will make the process go in a good manner. The problems often arise in life, even when doing the education process we often find a misunderstanding and it is caused by our

mistakes when conveying and interpreting information so that makes people's understanding is different and it makes a difference which can trigger a dispute. We need to know how to make an approach or communicate properly and correctly following the conditions and situations that are happening.

The next development or the third paradigm is starting from the instructional process management approach, where the elements have different functions which are integrated integrally. Furthermore, the fourth paradigm is starting from the behavioral science approach, namely by focusing attention on the students themselves so that they can be enabled to learn effectively and efficiently.

This is what the minister of education in Indonesia now wants to apply, where teachers and students have more time to meet face-to-face to deliver the material, more focus on the material that a teacher wants to convey to their students, therefore, students will be able to be more understood about what is wanted to be delivered, because the phenomenon that occurred before, that is the teachers or teaching staff have more burden in the field of administrative completeness and data to assess so that the results of learning cannot be obtained optimally. The next development or the new paradigm or the fifth paradigm is an internal development to further emphasize the identity of educational technology.

The focus of educational technology is to solve directed learning problems. This is actually a very good step that can be applied by the government in terms of the education world because we cannot deny that in the current technology is the

main tool that must be understood for its use and function because it can simplify and speed up the work of a human.

In this modern era, humans are very dependent on technology. It makes technology becomes a basic need for everyone. From the adults to the teenagers, from the experts to the ordinary people already using technology in various aspects of their lives. Nowadays, technology is developing rapidly. Unlike the old days, now the role of technology is very important to support the various needs and activities carried out by humans. In education, technology has had its own role in the teaching and learning process. The invention of paper, printing machines, the radio, film, TV, computers, and others was used to carry out the educational process. Basically, the technology is not intended to be used as a media in the education process, but people can use it as a media for conducting the educational process.

The rapid development of technology and information at this time greatly influences the growth and development of the human population. Technology and information that obtained today so easily make people get a piece of news or know an event that occurs around and outside their area very quickly. But the thing to worry about is there is so many hoax news that can be found on social media, thus it can make the human's knowledge distorted.

According to Hamzah B. Uno and Nina Lamatenggo said that the educational trends that will occur in Indonesia in the future are as follows:

1. The development of open education with distance learning mode. Then to carry out the open and distance education needs to be included as the main strategy;
2. Sharing resources between educational / training institutions in the libraries network and other educational instruments (teachers, laboratories) has turned into a source of information rather than just a bookshelf;
3. The use of interactive information technology devices, such as multimedia CD-ROMs in education, is gradually replacing television and video. With the development of technology and information in the education world, at that time it is possible to hold distance learning by using internet media to connect the students with the lecturers, the grades of the student can be viewed via online, check the finances, view class schedules, send the assignment files which is given by the lecturer and so on (Budiman, 2017).

During the coronavirus attack which is currently a common problem throughout the world and especially in Indonesia, it has paralyzed the learning process that must be done face-to-face in the classroom between teachers and students. The Indonesian government issued a policy related to the learning process that must be done by a teacher with students.

The spread of the coronavirus that is so easily transmitted from individual to other individuals makes the learning process must be done independently in a separate place but still under the supervision of a teacher. This is where the role of technology

must be used properly by a teacher and student, with many applications or features that can be applied, things like today should not be overly concerned, because today, we should be able to study in distance without being inside and face-to-face in the classroom. Therefore, there are still many obstacles encountered related to how to use these applications that actually exist from the past.

The learning process which using an open education and distance learning mode in Indonesia is now very important, we need to understand how to use and apply it for the advancement of education during the coronavirus that has now been rampant in the world. Some applications or features that can be used in the distance learning process are *Google Classroom*, *Zoom*, and others. The easiest way is using the *WhatsApp* group that is commonly used by students from the elementary schools, junior high schools, and senior high schools. The application of digital technology by educators makes the learning atmosphere very different from the old model. Now, it is increasingly being done due to the threat of this deadly coronavirus, thus the use of digital technology in carrying out this learning process is very necessary to be understood.

Among elementary school children, *Whatsapp* application is the only way to continue the learning process. The *Whatsapp* group can be used by a teacher to make announcements about the learning material to be learned and also about the assignments that must be done at home. Students must study on their own without a teacher, it is an appeal from the government to prevent the transmission of the coronavirus (COVID 19).

Therefore, teachers and students must now have an android and have a *WhatsApp* application. It is undeniable for children if they cannot use this application properly, therefore, parents should take a role to help the online learning process run in a good manner.

The concept of study at home and pre-work training applied by the government today is actually very relevant to the essence of non-formal education. The Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System emphasizes the definition of non-formal education. Article (1) Non-formal education is an education channel outside the formal education system and can be implemented in a structured and tiered manner. Furthermore, in the article (2) non-formal education is held for citizens who need educational services as addition and supplement to formal education in order to support a long life education. Non-formal education has experienced a dilemma in creating optimal teacher performance because of its non-profit nature. However, it is proven that teachers still succeed in giving their jobs adequately (Wijayanti, Asbari, Santoso, & Purwanto, 2020).

Among junior high school students using the *WhatsApp* application may already be done individually by them. However, this also must require supervision by parents therefore students do not look for things that are not appropriate to search on Android. Furthermore, beside of the junior high school students using *WhatsApp*, they also able to use the other applications for doing online class in learning process, because their knowledge about technology are quite extensive and able to understands

how to use and know the function, it seems that the *Zoom* application can be used by them to carry out the learning process well.

Among the college students, inevitably have to be able and proficient in using technology with applications that are already available. The college students from the young until the old must be able to learn and understand how to use and know the function. It is because all of tasks and learning process is done in online way due to the coronavirus attack which result humans are not allowed to do gathering or do learning process in face-to-face way.

With this digital technology in the learning process carried out, it is expected to reduce the number of coronavirus spread in Indonesia, without the crowd at school, it will caused this virus hard to spread. However, actually there are also many obstacles may be faced by teachers and students. The most obstacles maybe were from the signal that must be used on this learning process. Hopefully, this will be a concern for the government and the solution immediately made to expedite the teaching and learning activities.

IMPLICATION OF TECHNOLOGY IN THE LEARNING PROCESS

Currently, Indonesia is being affected by COVID-19, this beloved Bali Island is no exception. The consequences that can be received are very influential for human life, therefore vigilance is important to prevent the spread of the virus that is more widespread. Since the issuance of a decree from the Governor of Bali, all places must be avoided from the crowd such as places to work, hospitals, temples, malls and so forth. No exception to the learning process environment such as Pre-school, Kindergarten, Elementary School, Junior High School, Senior/Vocational High School, and University.

All of those places must be spared from crowd in order to prevent the spread of a virus outbreak. In the epidemic COVID-19, it makes the role of technology very vital and important. Since the advancement in technology, all tasks have become easier. The advancement of technology also makes the disease more advanced and sophisticated, therefore technology is very important or very influential in the development of the disease.

In today's development, the technology increasingly advances and develops, it can help all the tasks that carried out by the system such as save the important data, count the number, deliver the message you want to convey through social media and so forth. The constrained learning process that should be done at school, now it switches to be done in their respective homes. It caused the role of technology becomes important in carrying out the learning process at home.

Therefore, it can make the students easier to do it. Education is an important thing that we must be obtained and drawn by every human being and all citizens. The learning process that should be done at school is one of the activities that carried out by a students. Because of the COVID-19, it make the students should keep stay at home and do the learning process from home, this decision has been determined and becomes an agreement made by the government.

All major learning processes meet in the room with educators or teachers who will provide material to be explained in accordance with the learning to be received. With meet each other. Face-to-face, an interactive discussion, asking question, accepting the tasks or important material are carried out to get material directly that accepted by our mind through the teachers who must explain in detail and according to the material described.

However, over time coupled with the outbreak of COVID-19, the government called for learning activities or teaching and learning activities to be carried out at home by utilizing technology such as smartphones or laptops and using several application options and supporting features that can be used to carry out 24 hour online learning activities.

Through this method, it help students a lot in learning process that given by the teachers and make the teachers easier to giving a task to the students in order to not lag behind. Therefore the teaching and learning activities or the learning process can still be carried out through electronic media that play an important role. Besides that, in improving the method of

presenting learning material that is done, it can facilitate in deliver the material, both based on feedback done from students and on the results of instructor assessments conducted by educators or teachers in schools that provide learning material itself.

The knowledge and skills that will be carried out for the development of electronic learning materials for students, need to be mastered in advance by educators or teachers who will develop learning materials through electronic technology, thus they can be conveyed well to their students. Likewise, the management of its own learning activities carried out by students at home. There must be supervision from parents and commitment from teachers who will always supervise and develop their students' learning activities and regularly provide training for them in learning process at home. Now educators must also be required to know and also learn the development of these technologies specifically and in detail until the online-based learning process can be carried out smoothly. The facilities that are available in a technology that will continue to develop are very helpful for educators in facilitating the development of learning media through online for 24 hours.

Thus, in the refinement or update that has been done for student learning materials must be in accordance with the demands and development of scientific material that can be done periodically and easily. Some media social application such as *WhatsApp*, *Facebook*, some application that available in *Google*, for examples *Gmail* and other application like *Zoom* that can be found through *Playstore* or *Appstore*. It is can be said as the

applications that are currently very important in the continuity of the learning process at home that is carried out by the students. The way to use it is easy and can be used anytime.

Through these media, at least it must be function and used in order to obtain the lessons learned and their benefits. With the flexibility of time and place obtained, then the number of students who can be reached through electronic learning activities is more and more widespread. Space, place and time that in the beginning became the problem, now no longer a barrier. Who, where and whenever, someone can learn through electronics that have been designed by educators or teachers. Interaction with learning resources has been done through internet media. The opportunity for students to learn is truly wide open and easy to reach for anyone who needs it. Even if the learning process or teaching and learning activities are not carried out online 24 hours a day, the students can also download other applications such as the *Ruang Guru* which has function to provide additional knowledge as well as add education, not only sourced from the learning process or teaching and learning from the class that just carried out in a certain times. Now, the students are proficient and smart in using technological features such as the use of smartphones.

We do not know who the one taught them, thus now technology advances are becoming increasingly rapid but must also be used wisely and used for positive things. As a student, they should use technology for things that have a relationship with education instead of using it for other things such as

uploading hoax information, saying harshly on social media, downloading sex content, and playing games for a long time.

These are some important tasks for parents in supervising their children or students towards the use of smartphone-based technology, thus they are not using it for things that are not important or undesirable. Back in the context of the online-based learning process at least must be reduced, therefore it does not have a negative impact on health, especially visual impairment for students or educators.

This is also an important problem in health in order not to over-force the use of smartphone or laptop-based technology continuously for a long time duration, it is to avoid the light radiation emitted by those media. This is still a very complex problem and caused many pros and cons in the use of media sustainably.

The use of electronic media in the development of these technologies is arguably quite helpful in resolved this COVID-19 epidemic in order to carry out the learning activities temporarily at home. Fortunately its use for now is still very effective. Besides the effective use of a smartphone or laptop-based technology, this also has negative effects toward our physical health such as damage to the brain and eyes if they use the electronic media too often.

For things like this, it is expected that the government can provide solutions and also wish that the COVID-19 virus outbreak can be quickly resolved, therefore there are not many victims and transmission due to the outbreak. The author actually does not agree to the use of electronic media such as e-learning

or online classes continuously because it will adversely affect the mental and visual impairment of students. They must always stare at the screen of a smartphone or laptop to carry out the learning process which can take up more than an hour. Besides, it will also override the function of the schools or colleges.

Moreover, in the situation caused by COVID-19, it is the best solution to carry out a 24-hour online-based learning process at home, hence it can be concluded as how Indonesia and Bali in particular were fighting something invisible but deadly called COVID-19. Technology in a bad situation as caused by COVID-19 makes technology have an important role to expedite the learning process of all humans, thus they are expected to be more alert and leave the house if only there is something important to do or if it very urgent.

The utilization of technological advances in situations caused by COVID-19 is indeed important although the learning process not always will be carried out with e-learning. It is expected that this virus outbreak quickly subsides and disappears, therefore the learning activities can be run as before.

LONG-DISTANCE LEARNING MEDIA

In the globalization era, people are greatly helped by the development of technology that gives a different color to the lives of the world community.

With the rapid development of technology, therefore can be facilitated all human activities, technology also has a positive impact on the development of the world globalization era, one evidence of technology can help human activities we can see in the education world. In today's education field, most technology has been used in the educational process such as making an assignments, material appearance, learning methods and others which all have used it in the implementation process.

Moreover, nowadays the world is rocked with a variety of issues, one of them is about the coronavirus (COVID-19) outbreak, which is shook the world. Therefore, here is the evidence that technology is as an information media in the process of developing the coronavirus. With the rapid growth of this technology, it makes everyone aware of the ferocious outbreak of the epidemic, thus the entire country attempt to prevent the transmission of the virus outbreak definitely with the help of technology.

The Indonesian government has established an emergency status of coronavirus (COVID-19), that caused all activities involving the crowd stopped temporarily. Thus, all government and non-government activities are temporarily closed, the government is attempt to make the transmission or spread of the

virus outbreak slower and closes the entire movement space for the outbreak of the virus.

Because of the ferocity of this coronavirus outbreak, I think that this is the right policy from the government to prevent transmission of the coronavirus (COVID-19), although this outbreak has spread in various regions in Indonesia, however with this policy the spread of the coronavirus at least can be prevented.

In an effort to prevent the transmission or prevention of the coronavirus, the government has also closed the schools temporarily, all the teaching and learning activities were stopped temporarily, it is resulting a slow learning process, in my opinion it is where the important role of technology particularly in education sector.

With the termination of teaching and learning activities for a while, which make teachers try to keep providing material to their students, in this case of course it used educational technology. Educational technology is a tool that can be useful for effective performance and how to manage technology in education as a medium to help in the education world in the good and efficient way.

In terms of preventing this coronavirus, educational activities at various grades from elementary schools to university, they used educational technology media to run the teaching and learning process, therefore they do not need to have met and seen each other. With the use of this educational technology, all teaching and learning activities can be run even though there are still many obstacles such as network disruption,

and inadequate access as in regions where access to adequate technology is far from complete and far from perfect.

Coronavirus has a serious impact on the world of education in Indonesia, with the termination of teaching and learning in schools, therefore the teachers used the various ways to always be able provide the material or assignments for their students, such as the online method. This online learning can be developed in various ways by teachers in the middle of school closures to minimize the spread of coronavirus.

However, the online process is still considered less than the maximum and there are still many obstacles faced by teachers or educators to adapt to the world of technology. This online method allows students to always learn even without being accompanied by educators, such as for the success of this online method, the educators create a *WhatsApp* group, hence this application is an intermediary for students and teachers to always communicate in terms of learning.

In the process of distance learning, the most effective method is certainly giving an assignment, students can work on the tasks and the results of it can be sent via *WhatsApp* group, therefore it is makes students and educators easier without having to meet face-to-face.

Aside from that, the technology that can be used in the middle of the coronavirus siege is *Google Classroom*, this application can also be used as a medium for long-distance learning for the continuity of student learning.

The outbreak of the coronavirus makes all educational institutions have been instructed to learn from home. For

institutions that want to give long-distance learning, you can use *Google Classroom* which is the best solution in the midst of the outbreak of the coronavirus, which limits social conditions in the community.

Google Classroom is a powerful technology and interface that is very easy to understand and makes educators comfortable in delivering material and assignments to their students which certainly can make students feeling comfy and enjoyable. *Google Classroom* is an online service that can be accessed by all people.

Google Classroom as a supporting media for teachers and students amid the coronavirus (COVID-19) outbreak, this feature can efficiently help the education process, where teachers and students interact without having to meet face-to-face. The educators can create classes through the *Google Classroom* application and can invite all students to join and teach properly as the learning process in the classroom, students can still send their assignments to the educators or teachers.

However, the results of Kumar, Bervell, & Osman (2020) research revealed that usability and convenience are the main factors that influence the use of *Google Classroom* from both perspectives. However, the concerns raised by students are based on privacy issues, peer interaction, and interface design. In the other hand, while the instructor supporting some of these issues, it can adds the challenges in access to the *Google Classroom* learning analytics and cloud storage.

Google Classroom is actually used as a means of two-way communication by educators and students, *Google Classroom* is

also a supporting tool for the use of multimedia files such as pictures and videos which are all teaching materials for students. With the existence of this *Google Classroom* allows communication to be more effective, and most importantly that this technology is very affordable and safe for all users. So it can be concluded that this is the role of technology in the midst of the outbreak of the coronavirus in Indonesia. Another thing that can be developed is to add animation in the developed media. Animation itself according to Simarmata, et al, 2020) is an attraction in a presentation and is very helpful in explaining a complex concept that can be in the form of simulation.

The Indonesian government has determined that at this time the State has a coronavirus emergency, therefore all activities outside the home are temporarily stopped in order to prevent transmission of the coronavirus. In accordance with my writing above that in educational institutions at least can be helped by the sophistication of technology in the midst of the outbreak of the coronavirus (COVID-19).

Many things that can use technology, such as the teaching and learning process or work can also be done from long-distance or online, thus all activities that must be done can be carried out even if it is not optimal. Technology is very helpful for human life in the world, without technology, it is possible for human life in this globalization era to be hampered.

Moreover, for the education world, technology is very much needed in education when the current situation is very helpful for its activities without having face-to-face between educators and students, technology is present as a savior for the world of

education in the coronavirus (COVID-19) siege. Therefore in this situations, everyone can learn from home even without being accompanied by a teacher or educator, and parents can supervise their children in this online learning process because the role of parents is also very important for the learning development of students.

In this online process parents can become mentors for their children in the learning process, parents can supervise their children in learning, because of it students will enthusiast due to they are accompanied by their parents. In the other hand, parents will be able to know the children's strengths and weakness because they can directly supervise their children's learning process.

CONSIDER TECHNOLOGY ADVANCES

In today's communication there are a lot of changes, start from a simple communication tools until the electronic communication tools. The changes that we know have started to happen slowly, and some are happening quickly or drastically that is the result of one science contradicting another. Constraints in communication activities in this change are quickly driven in various technological discoveries with what was and is now wide open. Someone who in the world can interact with a group of people without limits through the amount, time factor, distance, capacity and speed.

For example communication through the use of satellites. Changes occur in the field of communication not only occur in the theory of communication science, it only happens in communication technology. The communication technology referred here is the technology used by humans as a means of media and communication.

Communication is an activity in human life that we must do. There is also other opinion that communication is a variety of tools that function as the transfer of information through one place to another. Communication develops to the needs of each person.

In addition to the development of communication, communication technology is very fast and rapidly developing. This technology that we already know is something that is done by humans to fulfill their needs with the help of tools and mind,

therefore it can extend, strengthen, and even make the five senses, limbs, and the human brain more powerful.

From the definition of technology there is also the purpose of technology itself where the purpose of technology is as a human means to facilitate human beings themselves in carrying out their activities, hence traditional methods can be minimized to a minimum by humans with the amount used in time and energy. Human life as it is now all supported by technology, ranging from household equipment, personal equipment, work equipment and others.

Communication technology is part of the activities of human social life. Communication technology is developing very rapidly, information and messages are always delivered with a very short and fast time, in communicating the difference in time and space no longer exists and is no longer a barrier.

From these findings, the home telephone or wired communication device that developed to innovate then developed into a wireless cellphone. Before getting to know a wired communication or cellphone communication device, communication activities in ancient times had used written language in media such as, inscriptions, animal bones, and palm leaves. But the Indonesian state of activities such as correspondence has existed since the days of the Hindu kingdom such as, Mataram, Padjajaran, Kutai, Majapahit, and Sriwijaya.

Usually, it was done by send the letters to neighboring countries, the kingdom used palm leaves as media, animal skins and bark, stone slabs and animal bones. Generally, communication was used as a medium called palm leaves,

because palm leaves were easily found. Then there was also those who used *kentongan* (the block/drum made from bamboo or wood) as a communication tool. *Kentongan* is a tool or means of communication used by Indonesian people that has existed since ancient times.

Generally, the *kentongan* functions as a tool is to give a warning of something happening to the citizens, for example theft, natural disasters, and fires. In the archipelago at the kingdom era, *kentongan* and other media, such as *gong* used to gather the people. In fact, it is usually used in giving an announcement or information to the people, the way to sound the *kentongan* is by hitting it.

To see the news, announcements or information people rushed out when listening to the sound of the *kentongan*. For each region in its use *kentongan* sound does not have a specific standard. The sound of *kentongan* in each region has a certain meaning, for example, if it try to gives information about the danger of flooding or theft, the sound of *kentongan* will be repeatedly being struck quickly. However, the traditional tools in the same kind like *kentongan* such as *bedug* (drum) and *lonceng* (bell) are still used as in places of worship.

Besides, with the rapid development of information technology, the traditional tools have been replaced by modern tools such as cellphones and postal mail. Cellphone is one of the most used by the public today in the form of communication technology, its function is able to help various professional activities of the community. This is not only as a medium of

communication but multimedia that has many functions, until then the terms that appear is called *smart phones*.

The telephone is a communication medium that has the function to capture information in the form of sound. The telephone is a long-distance communication technology tool, which without using a cable network sending information through electrical signals. The origin of the word cellphone comes from the Greek language, which comes from the word *tele* which means distant and *phone* is sound. Alexander Graham Bell as the main inventor of the telephone in early 1876. Until now, mobile phones have been developing and progressing very quickly and rapidly.

Mobile phone or known as the cellphone is a telephone network that does not need to be connected using a cable (wireless), it has similarities with conventional telephones that have basic capabilities, but can be carried everywhere (portable, mobile). In long-distance communication even though it crosses the ocean, you can use a cellphone.

Today's society can easily use the mobile phone because of the relatively low cost and prices of mobile phones. It is very easy for someone when doing long-distance communication through the cellphone. In this sophisticated technology era, the development of information and communication technology is increasingly practical. For example, mobile phones are practically carried everywhere with varied models, and mobile functions are also increasingly developing. Mobile phones are not only for communicating with each other over great distances, but it can be used to watch television, listen to the radio, take

pictures, listen to music, and send pictures or record videos. We can also receive or send images or text based on messages that are often called SMS.

Communication technology has a big influence on this life. Today, humans can communicate with fellow human beings both anyone and anywhere in the world. There is no obstacle in communication, communication technology has changed everything so it is more practical and easier to keep in touch with old friends, and helps strengthen relationships. Communication technology has made it easier for people to communicate freely and quickly on a global scale by changing the world and the natural environment to be more open.

The positive impact of the existence of communication technology, namely when humans are in danger or emergency, the mobile phone is their savior. When we are on vacation or going out of town or country, mobile phones are the most comfortable way to communicate and still be keep in touch with others. Besides, some people can provide knowledge and comfort for those who use it. Nowadays, mobile phones can also be used for entertainment devices such as MP4, radio, games, MP3s, and many more. It because mobile phones have services such as MMS, text message (SMS), and becomes human needs. It does not need to doubt that the benefits of mobile phones are increasing rapidly.

Because of the existence of the internet that helps human activities, especially for teachers who can make them easier to find varied materials or media and make the students easier and smarter because the sources to be sought and the information

they want to know already exist and can be accessed easily. The negative impacts of this technology are the communication that used to correspondence or face-to-face conversation has disappeared and it decreasing because it was replaced by chatting or SMS.

With the existence of a mobile phone these days, it makes the gap between parents and children because of this communication technology unconsciously began to fade the people's relationships. It happens because every family is busy with their affairs which results in the communication itself. People are more concerned with life that related to online than in real life, which results in reduced social interaction.

The role of the family is very significant in controlling the negative impact of technology. Family is a social institution that has an important role in improving the quality of society. Family is a reflection of the conditions of society because family is part of forming the society characters. In general, the formation of a family has a goal to achieve prosperity and quality family. Family quality is an ideal condition that consists of education, health, financial, socio-cultural, independence, mental and spiritual values, and religious values (Laksono, Azizah, Lintiana, & Lutfiana, 2020).

Because of the existence of communication technologies such as mobile phones, the internet, and others, a person becomes isolated and lonely because of people who are already addicted to technology. Then, in communication technology, namely cellphones or mobile phones that bring comfort effects and can provide the opposite effect. As time goes by, the mobile

phone model usually becomes a trend all the time which makes someone tend to change their cell phone to the latest one. It makes someone has a large expenditure. Besides, many health scientists believe that the radiation generated from cellphones can affect the condition of the human body, ranging from sore eye headaches, and it can cause the development of cancer in the human body.

CONCLUSION

Before technology became famous, learning was a problem for teachers and students. Many students cannot concentrate on learning, so the knowledge conveyed by the teacher cannot be understood by the students. Not to mention the condition of the room that is not neatly arranged. On the other hand, there are teaching staff who have difficulty in teaching. Thus, the knowledge that exists in the teacher cannot be conveyed properly to students.

Educational technology and learning technology merged in the definition proposed by AECT, which facilitates the learning process and improving performance through the creation, use, project management, and technology.

Educational technology has changed teaching and learning ways in many schools both elementary level (Pre-school, Kindergarten, Elementary School), intermediate level (Junior High School, Senior High School), and higher levels, namely Academy, Institute, or University. Technology enables students to experience learning events or phenomena that they cannot witness directly. By incorporating technology into various learning tasks and passing through subject areas, educators can provide the learners with learning experiences that might not have been possible a few years ago. Careful on using can also aim to change the use of educational technology that changes the role of students in improving thinking skills and problem-solving. In this case, I think a way to design and implement or evaluate the overall process of research in learning theory,

humans' communication, and use a combination of learning resources from humans and non-humans to make or plan a design for effective learning.

Educational technology is a process of learning and improving performance by creating and managing technological processes and resources or other adequate resources in the teaching and learning process. In the strict sense, technology is a process of interaction between educators and students both in the family, society and at school.

A way that can be used in teaching and learning, namely, the example of varied learning, which is monotonous learning (applying the same model and method) thus make students increase learning potential. Therefore, it is important to apply varied learning to make students enthusiastic during the learning process.

In my opinion, the application of behavioral science and learning theory, also the use of a systems approach to analyzing this case is to regulate the use of technology to solve learning problems. To improve learning performance so that students can understand the learning materials, managing appropriate technological processes and resources. This educational technology is to facilitate and improve learning performance. Study and ethical practices can be through the creation, use, process regulation, and technological resources.

The main purpose of the use of technology in the learning process is to help in solving the problem of learning because learning becomes a problem for teachers and students. Many students are not concentrated during the learning process, thus

the knowledge conveyed by the teacher cannot be understood by the students. Based on these problems, it is expected with the existence of educational technology can answer these problems. It can be done by analyzing the problem first, then implementing and evaluating and managing the problem. From the problems above, education technology is needed to be able to answer all of these problems.

This learning technology is not only used at school, but also in human activities such as companies, families, society organizations, and many more, as long as it relates to efforts to solve learning problems and improve performance. In this case, the individual can easily accept or promote the innovation itself, thus it can be utilized by society.

Technology can facilitate society especially the students, hence they can study well at school. People as users often feel confused with the terms related to people/agencies/institutions in educational technology and learning technology.

The terms referred to by some experts include: - Technology in education: technology products used by the education world, for example, video can be used not only for entertainment at home but can also be used for the learning process. Various other technological products that are utilized for the benefit of learning, including in the application of educational technology.

Technology for education is a media came from the development of information devices and it used for educational purposes. The concept of programmed learning makes structured and detailed learning steps, including a technology model that deliberately used or created to facilitate the learning process,

namely performance technology. By creating, using, or utilizing, and managing appropriate technological processes and sources, it is clear that the main purpose is still to facilitate learning to be effective, efficient, and easily understood to students.

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