

STUDY IMPLEMENTATION BLENDED LEARNING IN STUDENTS SKILLS AND BASIC CONCEPTS IN INDONESIA

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ABSTRACT

The development of the world of technology today has experienced rapid growth and development. Along with the development of this technology, the world of education must also be developed. Many ways can be used in the world of education to benefit from information technology. Educational institutions are increasingly qualified, even an international standard. Learning by using e-learning system will make the teaching and learning process can be done asynchronously. Students can learn without having to be in the same space and time. The implementation of blended learning in schools is produce information and communication, mainly in network technology in the shape of internet, generally combined learning models that include face to face learning model, face-off learning, and on-line learning Students can also learn with the desired stages and scopes. Communication and interaction facilities in the e-learning system will also make the interaction of teachers / lecturers and students / students not only limited to the classroom but can be extended by electronic communication.

Keyword: Blended learning, e-learning

Introduction

The development of increasingly advanced technology influential in the world of education is currently widely used in many educational institutions. Many ways are done in utilizing technological progress itself. One of them is electronic learning process that is better known as e-learning and application of blended learning where mixing between on-line learning with formal learning (face-to-face) (Vernadakis, 2012). The development of the world of technology today has experienced rapid growth and development. Along with the development of this technology, the world of education must also be developed. Many ways can be used in the world of education to benefit from information technology. Educational institutions are increasingly qualified, even an international standard. Competition in the field of education was widely encountered, but this competition is done in a healthy order to produce students who have great potential that advances the nation. One form of competition that exists among them is the use of technology itself.

In the analysis of this paper also explains the notion of e-learning and blended learning, what exactly is electronic learning. Electronic learning or better known as e-learning is a new way of learning and teaching system by using internet technology, where a teacher and his students can experience teaching and learning process not only in class and at the same time. The application is done in addition to e-learning is by blended learning. Blended learning is a form of ease of learning that integrates various delivery modes, instructional models, and learning styles, introducing a wide selection of dialogue media between facilitator and person who is being taught (Akkoyunlu, 2008). Blended learning or mixed learning is also a form of learning combination by using classroom and online meetings, but more than that as an element of social interaction. The benefits of using blended learning in the world of education today is to provide flexibility in choosing the time and place to access the lesson (Vernadakis, 2012). Students do not have to travel to where the lesson is delivered, By applying blended learning then it can be done from anywhere who has access to the Internet or not. This provides an opportunity for the learner to independently gain control over the success of learning. Learners are free to decide when to begin, when to complete, and which parts of the modules they want to learn first. If, after repeated there are still things that have not been understood, learners can contact the instructor, resource by email, chat or participate in interactive dialogue at certain times. Can also read the discussion results on message board available in LMS (Learning Management System). The benefits of blended learning itself adds more convenience than just e-learning because with a mixed method it is easier for learners (Jeffrey, 2014).

Blended Learning

Blended Learning model conceptually is a combination process or a mixture of excellence in the learning process conducted face-to-face learning in the classroom with the use of instructional media on line. According to Semler (2005), mixed model learning combines the best online learning aspects, coupled with organized face-to-face learning in the classroom and actual practice in the real world. Online learning systems, training or learning in the classroom, and workplace experience also have the disadvantage of self-learning learners. The mixed learning approach that uses an individual advantage to cover each other's weaknesses. Mixed learning is

an easy model of learning tools by combining different messaging models, teaching models, and learning styles and introducing dialogue options using medium learning medium between the facilitator and the person being taught (Akkoyunlu, 2008). Blended learning is also a combination of classroom learning off line and online through instructional media, but in fact the learning process mixes more than that, as a form of social interaction elements. Mixed learning is a learning that uses a combination of its delivery methods to be effective by using various means, learning styles and is found in communications conducted by using the media openly among all the parts involved in the learning process. As for the benefits of learning by using blended learning as a combination of teaching face-to-face learning in the classroom and online, but more than that as elements of social interaction are:

- Incidence of interaction between teachers and students in teaching and learning activities
- Teaching activities can be done on line or face-to-face
- Blended Learning or mixed learning seeks to combine instructional modalities (or delivery media),
- Blended Learning seeks to incorporate several learning methods.

What is mixed learning or blended learning? Blended learning is a learning model that tries to integrate or assemble several types of learning models. Along with the development of technology in information and communication that is in network technology such as internet in general, the learning is done by combining some learning model that is face-to-face learning or offline learning, and on-line learning (Vernadakis, 2012). On-line learning model can be learned by using web-learning, YouTube, blog, and so forth. While off-line learning can be learned by using CD, USB, DVD and so on. The main purpose of this mixed learning model is to seek an effective blend of learning models. Finally, online and face-to-face learning in the classroom models provide the following conclusions: (1) mixed learning models using video-based blogging media is an effective approach for students in learning; (2) blogging helps students' ability by 82% in improving their public speaking skills, such as speech, articulation, facial expressions, gestures and gestures; (3) students are also taught how to use a software in the form of computer multimedia and blog application through cooperative learning model; (4) students can see and make improvements over their weaknesses in learning and students can learn from the abilities of others from viewing videos on blogs; and (5) by applying mixed learning models to a lesson, students benefit from self-autonomy and collaborative learning, video feedback, instructor feedback and self-reflection. Implementation of a broader mixed learning model should be supported by various studies, so the percentage of each learning model can be known. Blended learning provides the best opportunity to learn from the transition class to e-learning. Mixed learning involves classes (or face-to-face) and online teaching (Jeffrey, 2014). This method is very effective for adding efficiency to the instruction class and allows for increased discussion or review of information beyond the classroom.

Formal Education

There are still more general criteria so that the classification discussed above really belongs to out-of-school education. This criterion is concerned with the definition (definition) of education so that there is a clear distinction between off-school education (including in which education programs are non-formal and education whose programs are informal with school education whose programs are formal). In this connection Sutjipto (2005) distinguishes the notion of the three types of education as follows:

Formal education is a systematic, structured, multilevel, tiered activity, from elementary school to university and equals to it; including academic and general-oriented academic studies, specialization programs, and professional training, are being conducted in a continuous time (Mallett, 2009). Informal education is a process that travels throughout the ages so that everyone gets value, attitude, skills and knowledge that comes from daily life experiences, environmental influences including the influence of family life, relationships with neighbors, work environment, and games, markets, libraries, and mass media. Non-formal education is any organized and systematic activity, outside of an established school system, conducted independently or an important part of a wider activity, which is purposely done to serve certain learners in achieving their learning objectives.

The above three understandings can be used to distinguish educational programs that include in each education path. Based on the three based on the understanding then it is clear that non-formal education is not identical both with formal education and with informal education. As an ingredient to analyze various educational programs, the three boundaries of education need to be clarified again by using criteria that can distinguish between education programs are non-formal with education programs are informal and formal. The difference between education whose programs are non-formal and informal can be put forward as follows (Mallett, 2009).

The former, education whose programs is non-formal, have organized goals and activities, are organized in the community and institutionalized, to serve the learning needs of learners. While the latter, education whose

programs are informal, is not directed to serve the learning needs that are organized. This second educational activity is more common, runs by itself, runs primarily in the family environment, as well as through mass media, playgrounds, and so on. On the other hand, if activities including education whose informal programs are directed towards a particular learning objective, such activities may be categorized into either education whose programs are non-formal or into formal education programs. As an illustration, radio and television broadcasting, as a source of information, education and entertainment for the community, arriving at people's homes at a given moment can be a source of learning activities on non-formal education programs or formal education programs. For example, programs that broadcast or display skills lessons, English lessons, smart-minded, etc. are examples of non-formal educational activities for listeners or viewers, in homes or places, deliberately for follow the broadcasts periodically or continuously while the open University lecture broadcast, presented through electronic media (television and radio) and print media, is part of the formal education activities for the students of the University. Allow increased discussion or review of information outside the classroom.

As for the listener or the viewers who are not intentionally to do the learning activities through the events before, then the activity of receiving messages delivered through the mass media is an educational event that is informal. Similarly, the utilization of information resources available in institutions or communities such as libraries, museums, reading boards, exhibits and newspapers provided to the public can be a source of learning for formal education programs and non-formal education programs if it is specifically integrated into formal education programs and / or non-formal educational programs. When using the three meanings of educators then the question arises: whether the term "education" is a place to describe informal activities? The next question, instead of using the term formal education, "is it better not to use the term informal activity" to describe the activity that appears to have been intentional or a coincidental learning event. To answer both questions above, it is worth mentioning here about the meaning of education formulated in the International Standard Classification of Education (ISCE) -UNESCO. According to UNESCO (1975), "education as organized and sustained communication designed to bring about learning" (education is as an organized and sustainable communication designed to foster learning) Dabbagh (2007). On the basis of this understanding, the main purpose of organized and sustainable communication is the emergence of learning. Thus the results of tangible education process, is the learning activities displayed by students and graduates of educational institutions. Behind attitude and behavior is not just learning to know something (Learning how to now), but learning to solve the problem (learning how to solve problems), even the most essential is to learn for the progress of life itself and environment (learning to live).

The interpretation of the organized term does seem somewhat narrower when it comes to the discussion of the education described here, because the word "organization" is an institution that organizes a program of learning activities in certain situations, and as an activity to organize professional or volunteer faculty for communication. The term organization does not include learning activities initiated and organized by a person or group of educators. The limitations of the investigations put forward by UNESCO give broad meaning to the process and purpose of organized communication. Based on this understanding, mass media, information institutions, messages, and other learning resources available in a community environment are communication suggestions to foster learning activities for individuals, groups, and communities. To complement the notion of education as described above, Sudjana (2001) provides a general limitation that education is a number of experiences with that experience, a person or group of people can understand something they did not previously understand.

The experience occurs because of the interaction between a person and group with environment. The interaction leads to a process of change (learning) in humans and then the process of change that produces development (development) for the life of a group or group in the environment. The learning process will result in changes in the cognitive domain (reasoning, interpretation, understanding, and application of information), competence (intellectual and social skills), and choosing and consciously accepting values, attitudes, rewards and feelings, and willingness to act or respond something stimulus. The process of change (learning) can occur by intentional or unintentional. Another view of education is put forward by. Assessment of activities programs included in formal, non-formal, and informal education by using the criteria of the presence or absence of intentions of both parties communicating, the educator (learning source or facilitator) and the learners (students or learning citizens).

Activities are characterized by the intent of both parties is the educator who deliberately to learners, and the learners who deliberately to learn something with the guidance, learning and training of educators, then the activity is classified into formal education and non-formal education. If the intent is only arising from the educator to help learners to gain learning experience, while the learners are not intentionally to learn something

with the help of educators, then this activity belongs to informal education. Similarly, if only the parties are deliberate learners to learn something with the guidance of an educator while the educator does not intentionally to help these learners, then this activity is also classified into informal education. However, if a learning event occurs accidentally from the educator and the learners then this activity is classified into learning by chance.

Criticism of this opinion is that education is a conscious and deliberate effort to prepare learners through counseling, teaching and / or training for their future role. There was no accident, especially from the educator. For example, a railroad collision with a car. Several minutes after the collision occurred, the train stopped. The train officers immediately removed the car that had been severely damaged and they corroborated the bodies of the passengers from in the car. Someone or a group of train passengers helped to get the victims out and got information that the cause of the accident was due to the negligence of the driver who did not comply with the traffic signs on the trajectory of the trains that had been equipped with a latch. Although the train was approaching, the driver continues to run the vehicle.

Learning events that occurred at that time was the learning party is a person or a group of train passengers. The source of learning is the car crash that killed all its passengers. Factors that cause drivers are cars that do not comply with traffic signs. The learning process that occurs is a person or group of train passengers know the factors that cause the accident. With that experience comes the attitude about the importance of obeying traffic rules, especially when he or she drives a vehicle on the way through the railroad. The learning process in the event is called incidental learning. Teaching and learning activities are organized by a person or an institution for the education program, while on the other hand, a person or group of people just by chance just follow the program. For example, a farmer who happened to wake up at dawn, an hour earlier than his habit. Each wake up, usually he immediately set the radio to listen to the news. However, on that morning broadcasts that were heard from the radio were agricultural extension programs discussing the program and farming, especially the way of fertilizing rice in the paddy fields. Because he is a farmer, the messages in the counseling program continue to be followed seriously. In this activity, it can be seen that education is a person or institution that deliberately broadcast agricultural extension programs to the community, especially at cassava farmers. Learners are a farmer who happened to wake up early an hour earlier than his habit. While the learning activity is the farmers who receive messages on how to fertilize both parties, both education and learners. For example, education that deliberately teaches students and students deliberately to learn from the educator (teacher) is environment school education. In the out-of-school education program, this intent comes from the educator (facilitator, learning resource) that teaches the learners (learners) to help them do the learning activities, while the students were deliberately to follow the learning activities. Thus the intentions of the two parties in the learning process are the main characteristics of school education and education outside school. It is clear that outside education and school education have the same common traits, namely the existence of deliberate, organized, systemic, and both are sub-systems of the nation's education system.

Method

After discussing some understanding of education above then the question arises then what is the difference between educators outside school and school education. The most common way to do is to compare the details of the characteristics of school education on the characteristics of out-of-school education Sudjana (2001). As an illustration, on the one hand, school education has a sequential program for each type and level of education and can be applied uniformly in all places that have the same conditions. On the other hand, out-of-school education has a program that is not always fixed and not always tiered although it can be sequential, and in the program hearing the needs of learning and local conditions more attention. This research uses descriptive method, by describing the condition of the implementation of blended learning in schools. School education programs have a strict level of uniformity, while the educational programs are more varied and broader education. However, the characteristics of school education are more absolute to identify than the characteristics of off-school education.

Result

The biggest obstacle to e-learning is the direct interactivity between learners and their instructors. However learning is a two-way process. Participants need feedback from the teacher and the teacher also requires feedback from the participants. In this way will be obtained more effective learning results, on target. This answers why e-learning programs in many companies do not always get satisfactory results. Often the material is already widely available and available. People can also study anytime and anywhere. Can be from office, home, hotel, or at home cafe connected via wireless network. But still the level of use of e-learning materials is low. In my simple analysis, people need friends and need immediate feedback. Just as we feel in conventional training in the classroom.

The continued obstacle of e-learning is creating the impression of loneliness that one cannot last long in learning. Within half an hour, someone is lazy and less motivated to continue learning. Not because the material is not good or the online system of the presented material is less interactive, but the person feels being alone and he needs someone else. Although for a true learner it is not an excuse. But the facts show, people cannot survive long studying in front of the computer. Predictions in the future learning trends with blended learning will be more popular in the world, including Indonesia. This is supported by various factors. One is the shift in how people seek information. To find out certain information will sometimes turn on the computer and ask Google Uncle. Or if through the latest mobile phones, with just a few buttons and a light touch, the information sought already exists in the hand. Not only that, IT infrastructure is also getting better. Now people can watch videos directly from an unbroken mobile phone.

If active on the internet, free Open University programs and taught experts in their fields are accessible. Or if using iTunes, there are many podcasts and learning videos created by renowned institutions such as Harvard University, the BBC, and other organizations. With the ease, everyone can learn from the best instructors all over the world without having face to face. Learning like this is done through live discussions using audio-conferencing, interactive video conferencing, real-time chat console, and various variations. Learning materials can be downloaded and learned in advance in the form of text, audio and video, and can ask questions directly with the instructor giving the material, consulting for an idea and understanding, and building personal closeness. Although never face to face, still feel has a direct proximity to the instructor. This can happen because it interacts directly, although only virtually connected communication signals. Each other provides support, feedback and suggestions for each person's progress.

The development of information and communication technology has touched all aspects including education. The teaching and learning process that used face-to-face in the classroom expanded its reach into blended learning using ICT e-learning system. Learning by using e-learning system will make the teaching and learning process can be done asynchronously. Students can learn without having to be in the same space and time. Students can also learn with the desired stages and scopes. Communication and interaction facilities in the e-learning system will also make the interaction of teachers / lecturers and students / students not only limited to the classroom but can be extended by electronic communication.

The paradigm used in e-learning development is enrichment (enrichment) instead of replacement. Blended learning process is a combination of conventional learning methods in front of the classroom with e-learning. The number of face-to-face learning in the classroom will not be reduced by the existence of this e-learning system. Materials received by students / students online can be given the task of reading, writing or solving problems individually or in groups. This process is monitored by lecturers in the form of providing consultation, commenting and checking the results of the work. This material may be the task required to be undertaken by the student before following the next course. It is expected that with e-learning prerequisite and follow-up this face-to-face learning in the classroom can be optimized for discussion or learning in more depth. The e-learning system is also used in lectures for presentations to students. The files for the presentation can be uploaded for use inside to for use in the classroom. E-learning is generally designed as a system accessible only to people who are entitled to it. Users consist of admins, teachers / lecturers, students / students and others listed in this system. This system is designed for use by multiple disciplines. Each discipline will have its own subject / course that do not mix with each other. It is also possible to organize workshops or trainings online using this e-learning system.

Successful login users will have links to the courses / courses (courses) on the discipline that followed. Active subjects / classes will be featured in the welcome screen to make it easier for the user to navigate. The system will also connect to the Information System of the School / Campus so that the information of students / teachers, lecturers, subjects taken by students and subjects / lectures taught by teachers / lecturers can be obtained from the existing system. The e-learning system is an open system in the sense that students can access all courses offered. Students can also access the lecture material without the phasing out of the system.

Interaction and communication facilities are also an important part of this system. Interaction and communication electronically allows students and lecturers to communicate without time and distance. The communication process is also believed to be very helpful for students to gain and deepen the knowledge being learned. Discussion and chat forums are the initial facility provided. Discussion and chat forums provided are structured communication in discussing a course material. The system will record the discussions and conversations available so that the lecturer can provide the necessary comments and directions. In the learning system that is blended learning teachers / lecturers are expected to provide assignments for online discussions

utilizing existing facilities. Activity assessment of students / students online is also one of the parameters in student-centered learning method.

One of the main factors in blended learning is its content (content). The availability of lecturing materials in digital form (electronic teaching materials) is a strategic first step for the success of this system. Electronic teaching materials is a way of storing knowledge (store knowledge) in the form of lecture notes, practice questions, tasks, supporting reference and evaluation in an integrated manner using digital media. This allows for dynamic and adaptive teaching materials to be developed so that students' ability to think selectively will be honed and strong. The mix-match concept is an approach used in the utilization of digital lecture materials. With this concept, lecturers can exchange each other lecture material that is made. Future development plans are the enhancement of the capabilities of the system to perform some new functions as well as improvements from existing facilities. Future plans include:

1. Design content becomes important (instructional design). Content other than qualified and complete, should arouse interest in learning and provide the necessary pacing.
2. Improve the ability of the system to be able to serve pure distance learning. This includes more complete user management capabilities especially when it will be commercialized. In addition it includes the ability of the system to offer courses in the form of skills acquisitions in the form of workshops or online training.
3. Electronic Assessment, the system is able to provide an automatic assessment of the given online tasks, assess the liveliness and provide feedback to the user.
4. Development of electronic teaching materials in the form of online simulations of certain topics that is required.
5. Streaming and Webcast server. Enables audio and video streaming as well as audio / video broadcast

Information and Communication Technology (ICT) in the Indonesian context is called Information and Communication Technology (ICT) in a very short time has become an important building material in the development of modern society life.

In many countries consider that understanding ICT, mastering ICT basic skills and having ICT concepts is part of the core of education, parallel to reading, writing and numeracy. UNESCO states that all countries, developed and developed, need to gain access to ICTs and provide the best educational facilities, so that young people who are ready to play a full role in modern society and able to play a role in the state of knowledge.

Due to the rapid development of ICT, continuous change is a challenge for many parties, from the Ministry of Education, teachers to publishers. The limitation of resources confines the education system. Yet ICT is thus of importance to the future industrial and commercial health of the country, so investment in equipment, teacher education, and support services for an ICT-based curriculum should be a government priority. The ICT curriculum for schools should be the latest. It is not effective to repeat the process of development of ICT education that is already running elsewhere, because it only slows down from catch up. The most important thing is to integrate and absorb all school lessons in ICT.

Many open opportunities with ICT inclusion in schools, the ICT curriculum in this book facilitate the use of these opportunities. Teachers need to be well prepared to apply the ICT curriculum. In fact, the application of a new curriculum should be carefully planned, managed, supplied, and continuously supported. The best development of faculty is if it is the result of a sustainable process, with many professional development activities in schools. Information and Communication Technology (ICT) for the purposes of this book, is defined as "the various technological tools and resources used to communicate and create, share, store and manage information". The technology includes computers, the Internet, broadcasting technology (radio and television) as well as per-phone. Despite recent interest in the use of computers and the Internet for education is increasing, but ICT is more than that. Printed material remains the cheapest, but old technology such as radio and TV for developed and developing countries remain a highly affordable and dominant delivery mechanism.

ICTs greatly assist in the acquisition and absorption of knowledge, allow developing countries to improve their education systems, improve policy formation and implementation, and increase the range of opportunities for businesses and the poor. One of the biggest obstacles to the poor, and many others living in poor countries, is the feeling of isolation. The new communication technology promises to diminish that sense of remoteness, and open access to knowledge in ways previously unimaginable. The gap between those who have access and control over technology and those who do not makes introducing and integrating ICTs at different levels of education very challenging. Failure here means that the gap of knowledge will widen and also increase economic and social inequality. ICT tools are great for extending formal and informal education opportunities to those previously excluded: remote populations, groups for cultural or social exclusion, minorities, women, and

people with disabilities, the elderly, and those who for reasons of cost cannot continue to the desired level of education. Anywhere, anytime. One of the characteristics of ICT is its ability to traverse space and time. For example, online learning materials can be accessed at any time. Radio or television broadcasting material, unrestricted, as well as teleconference technology.

Access to remote learning resources. Teachers and learners no longer need to rely on books and other printed materials, which may only be limited to distant libraries. ICT also facilitates access to speakers anywhere in the world. The ability to use ICTs effectively becomes an added value in an increasingly globalized job market. But technological capability is not the only skill demanded by the global economy. U.S. The North Central Regional Educational Laboratory recognizes "21st Century Skills" which includes the introduction of the digital age, intellectual thinking, high-level thinking and effective communication. ICTs have the potential to improve these skills and their use in improving the quality of education and fostering a student-centered learning environment. ICTs increase students' motivation and involvement, facilitate mastery of basic skills and improve teacher training. Motivate to learn. ICT such as video, television, multimedia computer, using various sounds, images, vibrant colors that stimulate student interest.

Submission of basic skills and concepts that are fundamental to high-level thinking and creativity skills are facilitated by ICTs with practice and repetition. ICTs are also used to improve access and quality of teacher training. When designed and implemented properly, education with ICTs increases the absorption of knowledge and skills that will empower students to learn throughout life. With proper usage ICT provides many new ways of teaching and learning. This new way according to constructivist theorists will shift from teacher-centered pedagogy to center on the learner. Active Learning. Learning with ICT enables learners to learn while doing, and makes learning no longer abstract but more relevant to their life situations. The student's involvement increases and the learner can choose what to learn when he needs to learn it. Collaborative Learning, ICT learning encourages interaction and cooperation between students, teachers and experts wherever they are. By working with people from different places, students will improve their communication skills as well as their global awareness.

Creative Learning. Learning with ICT drives creation and not just repetition of the information it receives. Integrative Learning. Learning with ICTs promotes thematic and integrative approaches to teaching and learning. This approach eliminates the boundary between the various disciplines and between theory and practice as in the classical approach. Evaluative Learning. Learning with ICT is directed and reviewed by the learner. With ICT, learners explore and discover, not just hear and remember.

Educational planners and policy makers should be clear about the intended targeted education. After a clear target, then the technology and modalities are chosen for that purpose. The potential of each technology varies depending on how it is used. At least five levels of technology use in education: presentation, demonstration, repetition and practice, interaction and collaboration. Any type of ICT: print media, audio / video cassettes, radio and TV broadcasts, computers or the Internet, can be used for presentations and demonstrations, the most basic level of the five mentioned above. Unless video technology, repetition and practice can be done with other types of ICTs. However, networked computers and the Internet are the most enabling of interactive and collaborative learning; and its full potential as an educational tool would be unattainable if only used for presentations and demonstrations.

Teleconferencing refers to "interactive electronic communication between people in two or more different places." There are four types of teleconferencing based on the nature of interaction and technological sophistication: (1) audio conferencing; (2) audio-graphic conferencing; (3) videoconferencing; and (4) web-based conferencing.

Audio conferencing is on the direct exchange of voice over the telephone network. Where text and images (graphs, diagrams, etc.) can also be exchanged in unison with voicemail, this is called audio-graphic conferencing. Videoconferencing enables live image exchange, in addition to sound and graphics. It does not use telephone network but satellite or television network (broadcast / cable).

As the name suggests, web-based conferencing is the transmission of text, graphics, audio and visual over the Internet, requiring a computer with a browser and communications can run simultaneously or not. E-learning includes learning at all levels, formal and informal, using information networks - the Internet, intranet (LAN), or extranet (WAN) - as the material, interaction and / or facility delivery. Some use the term online learning. Web-based learning is part of e-learning. Blended learning (integrated learning) refers to a learning model that combines traditional classroom practices with e-learning.

Open and distance learning is defined by the Commonwealth of Learning as "a way of providing separate learning opportunities between teachers and learners in terms of time and / or place; learning that is certified by an institution; use of various media, including print and electronic; two-way communication that allows learners and tutors to interact; there may be face-to-face meetings; and distinction of specialization in the production and delivery of material."

The Learner-centered environment according to the US National Research Council is an environment that "takes great care of the knowledge, skills, attitudes, and beliefs of the students they bring into the classroom." This comes from a theory of learning called constructivism, which view learning as a learner process construct meaning based on prior knowledge or experience. So knowledge is not acquired passively but from the active process of the learner transforming information, composing hypotheses, making decisions, using his mental model. For social constructivists, learning must be active, contextual and social. Best done in groups with teachers acting as facilitator or mentor. Research on the development of ICTs shows that in developing countries there are at least 4 approaches to how schools adopt and use ICTs. The fourth is a continuum. Schools that are still in the early stages of ICT development show an approach of emergence. Here they just bought or received ICT equipment, new administrators and teachers explored the possibility of using ICT in schools. They are still in the practice of teacher-centered teaching. The curriculum reflects an improvement in basic skills and an awareness of the use of ICT. This curriculum allows stepping to the next stage.

Furthermore, at the second stage, administrators and educators use ICTs for assigned tasks in school management including curriculum. Teachers still dominate the process of teaching and learning activities in the classroom. Schools in this phase are adapting the curriculum to improve the use of ICT in various fields of study with specific tools and software.

The next step, the absorption approach has integrated ICT in the curriculum, seen in schools that now use computer-assisted technology in the laboratory as well as in classrooms, and their administrative office space. Teachers are trying out new ways that enable ICTs in their productivity and professional competence. In this step, schools use information technology to creatively update the school's organization. ICT becomes an integral, though invisible part of personal productivity and professional practice. The focus is now centered on the learner, and integrates real-world subject areas in real-world applications. ICT is taught as a separate subject at the professional level and incorporated in all vocational areas. Schools become centers of learning in their communities.

Better learning and learning are not seen as separate activities, but as two sides of a coin, connected together. There are four stages in how teachers and students gain confidence in the use of ICT. Learning should show the stage of recognizing, learning how, understanding how and when, and specializing in the use of ICT equipment. The first stage that teachers and students learn in ICT development recognizes ICT tools and their functions and uses, which emphasizes the introduction of ICT and basic skills. Stage

After the introductory phase, here's how to use ICT tools, and start using them in different disciplines. This stage includes the use of general or specific ICT applications, and is related to the application approach in ICT development. The next stage is to understand how and when to use ICT equipment to achieve certain goals, such as completing a specific task. Here it is necessary to recognize situations where ICTs are useful, select the right tools for a particular task, and combine tools to solve real problems. This stage is related to the approach of absorption and transformation in the development of ICT. The final stage involves the specialization of the use of ICT equipment when more people enter science to create and support ICT. Here students learn ICT as their own subject and become specialists. This is more in vocational or professional education than in general education, and quite different from the previous stage in the use of ICT equipment.

Conclusion

The development of information and communication technology has touched all aspects including education. The teaching and learning process that used face-to-face in the classroom expanded its reach into blended learning using ICT e-learning system. Learning by using e-learning system will make the teaching and learning process can be done asynchronously. Students can learn without having to be in the same space and time. Students can also learn with the desired stages and scopes. Communication and interaction facilities in the e-learning system will also make the interaction of teachers / lecturers and students / students not only limited to the classroom but can be extended by electronic communication. It is expected that with e-learning prerequisite and follow-up this face-to-face in the classroom can be optimized for discussion or learning in more depth. The e-learning system is also used in lectures for presentations to students.

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