RESEARCH ARTICLE

A Brief Note on Online Learning

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ABSTRACT

The pandemic of Covid 19 has forced the writer and also whole teachers worldwide to teach online, in which it was, for the writer herself, was seldom to do. Though, it was reported, in some developing countries, online education is rarely used before the pandemic. Despite, the teaching and the learning should be maintained. This paper provides teachers with elligible information on what is online education in which online learning or online teaching is recognized. This will helps teachers to figure out what online education is, especially online learning, what should be there in online learning and how technology benefits the online teaching and learning in order to support students' learning. The writer hopes this article can contribute somewhat.

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Introduction

Mode of distance learning has already exists since the postal system were invented in 1700s, but the tribute to online learning is still seldom used especially in developing countries. The online learning has started its existence since the Arpanet started in 1980s. Online education is not a new mode of learning but it appears exaggeratedly during the pandemic of Covid 19 at the end of 2019. Online learning is the only chosen mode of teaching and learning during the pandemic because people are lockdown to avoid the spread of covid 19. Teaching and learning is not allowed physically in school but it occurs from teachers and students' homes. This isolation has made online education is needed more.

For some teachers of developing countries just as the writer is, online education is not commonly used before the pandemic. The option to move from traditional to online teaching and learning is quite shocking for them. The lack of ability to adapt quickly with technology in online teaching and learning, the lack of financial support to possess the technology needed in teaching and learning online, lack of information about what and how is distance education, especially online learning and many more reasons barrier teachers to held teaching and learning well. This paper is written to help teachers to have adequate information about what and how is online learning in which teachers are the facilitators of it, how should online teacher be and how technology takes part in online teaching and learning.

Discussions

Definitions of Online learning

Florida National University (2019) mentions that distance Learning is also referred to online education at this moment. According to Ally, M (2011) it is quite difficult to give precise definition for online learning. there are many terminologies that commonly used for online learning such as, e – learning, Internet learning, distributed learning, networked learning, tele – learning, virtual learning, computer –assisted learning, web-based learning, and distance learning. Ally defines online learning as:

> *The use of the Internet to access learning materials; to interact with the content, instructor, and other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience.*

In addition, Simonson, M (2020) mentions in his article that Online learning is also called as e- learning, or distance education. This terms means as a form of education in which the main element include physical separation of teachers and students during instruction and the use of various technologies to facilitate student –

teacher and student – student communication.Stern, Joshua (retrieved in December 2020), defines online learning or e-learning which is a part of distance learning, as education that takes place over the internet. To sum up, it can be understood that online learning is a way of learning in which the instructor and learners can interact, communicate, discuss and evaluate their teaching and learning process (to ensure that the learning is meaningful) through the use of technology either synchronously or asynchronously.

Benefits of online learning

Indonesian Minister of Education and Culture regulates the distance learning in its Act number 109 year of 2013 article 2. It is to give a educational service to the people who are not able to follow the regular traditional teaching and learning process and to maximize the access of education to all people as to ease the learning. It accommodates someone who cannot attend a teaching and learning situation as usual in the classroom, meet the teacher physically and get some instructions of learning from the instructor at the moment of meeting. This distance learning becomes a solution of government to expand the access of education to whole of people throughout Indonesia. Through distance learning, being educated is possible.

McIsaac and Gunawardena (2001) wrote that distance learning (online learning) is a choice to traditional education to battle illiteracy in developing countries, to provide training opportunities for economic growth, and to offer curriculum enrichment in nontraditional educational settings. UNESCO (2002) in Buselic (2012) described that distance learning encompassed many advantages in term of technically, socially and economically. It increases the opportunity to access knowledge, learning, training and workshop, provides opportunity to improve and enrich personal knowledge and improves cost effectiveness of educational resources. It also supports the quality and variety of existing educational structures, enhances consolidates capacity. Another benefits is that it is convenience for the technology can be accessible from home and offers flexibility of time.

Khan, Z in the online article describes at least 5 reasoning that distance learning, in which online learning is one of it, benefits: 1) Distance learningis an effective alternative way to wider opportunities in education and especially in higher education. Through distance learning, potential learners will have chance to upgrade their knowledge; 2) Distance learning is efficient and less expensive education. The digital learning reduces for example, the need of physical classroom and all its equipment. They can also financially skip the cost of housing and transportation since digital learning can be done where they stay; 3) This digital learning gives opportunities to those who want to improve their academic knowledge. Distance learning is an effective choice for those who need to improve their professionalism in any courses of knowledge at any stages of education. They can learn academically while they are employed; and 4) This type of education provides long life learning. for those who seek for education as a long life learning, they can pursuit distance learning since distance learning is independent learning.

https://www.yourarticlelibrary.com/education/5-significant-objectives-of-distance-education/45197

Ally (2011) wrote there are many benefits that can be taken for granted in online learning. for learners, online learning dismisses the issue of time zone, location and distance. Students can still do their face to face class interaction synchronously with instructor and other classmates which is flexibly scheduled time. They also can access their material of learning anytime asynchronously without having necessary to leave their previous working or job. This online learning really helps those who want to study without necessary to quit or lose their job. The learning is facilitated and managed as flexible as the learners need. For instructors, in online learning, they can do tutoring anytime and from anywhere without necessary to spend some times for riding to the class. The instructors can also update the material of learning in which the learners can monitor it immediately.

Online learning keep grooming especially in the area in which the internet access is easy and stable. Many learners choose to have online education for special reasons. A research of ECPI (2018) shows that online education gives many advantages: 1) Convenience and flexibility; 2) Greater variety of programs and courses; 3) Lower associated cost; 4) Most comfortable learning environment; 5) Fewer distraction, especially for those who feel nervous in a social setting; 6) Classes can be fit into a work schedule;

7) Can make progress with lessons even during bad weather when classes are typically canceled; and 8) Students enrolled in one college can take credits from another institution in order to get courses they need that their principal institution may not offer.

Several objectives are also mentioned. Most people agree that distance learning works effectively to give flexible opportunities pursuit education for people who have disability to join traditional classroom. It gives many benefits; mostly it reduces some amounts of expenses for transportation, living cost and it is self timed-control learning. After all, distance learning is applicable for any sectors of learning, not only for school aged students, but also for company that certify the employees with distance learning training. Online certification has been developed by Google, namely Google Adwords, Google Analytics. This is very helpful for developers and marketers to give more valuable resume.

Almost the same as the previous ideas, Emerson, M.S (2020) in Harvard.edu wrote there are several benefits of having distance education (Online learning):

Flexibility of time

Almost people agree that distance learning gives them a much flexibility of time scheduled rather than ordinary school. They can learn at any time that is convenient to them. So, they still are able to do their current activities. In other words, they can arrange and control their own schedule in learning.

Facilitating collaboration in learning. Technologies invention has made learning is easy to do. There are many platforms that provide learners to work on collaboration even though they are not face to face physically. They can do online discussion, messaging, and emailing to accomplish the learning.

Boosting carrier

The existence of internet leads people who need to extend the development the academic or business carrier by having online courses or online learning or online training without leaving their current activities. They can digitally connected with the professionals and learn from them easily on the field that is appropriate to them. At this moment, online learning is provided in many fields of subjects.

In short, Online learning has many benefits. This new way of teaching and learning gives

people around the world to experience learning, training and education easily and flexibly.

Characteristic Online Learning

As it is defined by Bates, Tony (2021) asa form of distance education where the primary delivery mechanism is the internet. These could be delivered synchronously or asynchronously. All instruction is conducted at a distance. From this definition, it can be viewed that online learning has some characteristics: 1) It is a distance education in which the instructor and learners are not in the same place but separated by the distance; and 2) The teaching and learning process is delivered via internet either synchronously or asynchronously.

Canvas.net, in its site mentions that there are several attributes of online learning. They are as the following: 1) It is commonly text based for content and communication delivery although, often it is completed by the emerged of technology such as video, audio; 2) Asynchronous communication through email messages, discussion board, blogging and text messaging are part of the common interaction tool; 3) Online learning takes student's self-reflection. Students have time to stop and think the responses before posting it asynchronously; 4) Flexibility of time and place. You have the ability to control your time and place to learn; 5) Independent learning. The learners must not depend on the instructor in finding the resources of materials; 6) They have to find all the information they need about the material independently; and 7) In some certain course, there is possibility to have anonymity.

Furthermore, Meylani R, Bitter G, and Legacy, J.M(2015) describes that there are 16 characteristics of ideal online learning environment: 1) Computer tutorials and online learning activities; 2) Use of multimedia element, simulations and manipulative; 3) Make use of affect, attitude, intrinsic and extrinsic motivation to create positive attitude in facilitators and learners. Affect is positive attitude toward technology which will increase self-efficacy in learning. Attitude toward technology determine the level of students' learning; 4) Support different types of learning experiences such as whether to be purely online or blended; 5) Provide online quizzes at the end of each unit and give feedback on the result; 6) Customized instruction to meet all the students various needs; 7) Provide assistance for learners' reflection through web; 8) Scaffolding for online

learning fit to the students' needs; 9) Medium of delivery is accessible from anywhere as long as the mobile and or internet technology is available; 10) Distance learning situation enhance learning experience significantly when digital resources are available; 11) Enable and support cooperative learning; 12) Addressing multiple intelligences; 13) Conforming to the state – wide and national education standard; 14) Fidelity of implementation. Online learning provide guidelines how to implement and adjust the learning when needed; 15) The need for professional development. This is useful to meet the needs of the learners and to improve students 'learning and success; and 16) Adapting of new instructional paradigm.

The view above gives us some common ideas that online learning is characterized as it is conducted via internet as the main system of delivery mode in which the instructor and learners interacts in processing the teaching and learning either synchronously or asynchronously in flexibly controlled time and from a distance.

Then, what should be there in online learning? This question is quite interesting. Taking online learning is not the same as learning in traditional face to face classroom. What can make the teaching and learning online is successful? There are some possible answers that can be learnt to be successful online learners and successful online teachers. Stern, J listed that at least online learners and online teachers is required to be self-motivation (self-starter), have good organization and time –management skills, be familiar with computers and internet, and resourceful and actively seek answers and solutions to questions and problems.

In addition, successful online learners are characterized by cmich.edu as to fulfill several points: 1) Initiative. Online learners plan their learning by themselves. They should have higher motivation in doing this; 2) Persistence. Online learners have to be commit to their purpose; 3) Organization. Online learners must be able to organize and manage their time. They have to be able to share their business, study, and family; 4) Engagement. Online learners have to be able to maintain their communication with their instructor and other students. The good communication is bridge for the successful friendship in learning; and 5) Aspiration. Online learners have to stay focus on what they want in the end of the course. It helps them to keep continuing the step in learning.

Furthermore, ecpi.edu describes that online learner needs to be able to manage their time well, master the basic technology skills, good communication skill and set a self – direction in evaluating their learning. it can be set that successful online learners have to be able to manage their selves in term of scheduling their learning and other activities. Commonly, students who take online learning is those who have part time job, business men, or those who cannot attend to the conventional learning. Their ability to manage their time in learning determines the successful of online learning. Not only being able to manage the time, online learners need to build their good interactions with instructor and classmates. Online learners cannot depend wholly to the instructor, as well as the classmates. Instructor is needed to give guidance and facilitate the learning of a material given. Classmates can help to give feedback or solution to learning problems such as sharing materials and resources of learning. So,being able to build good communication with instructor and classmate can create effective learning. Last, online learners need to be able to make reflection of their learning. Evaluation is part of learning. Independent learners should be able to evaluate their learning individually through portfolios or any forms that are intended as reflection.

Characteristics of Online Teacher

Teachers have a potential contribution for students' achievement. Hightower, et.al (2011) stated that high quality teaching has a profound, positive and transformational impact on the teaching and learning process. The research of Hattie (2003) in Rose, Sr.M (2018) even found single conclusion that excellence in teaching is the single most powerful influence on achievement (Rose, Sr.M;2018). Just as traditional classroom, virtual teachers should have special characteristics. Although, the characteristics are almost the same as what traditional teachers be, online teachers take more. Online teachers should be open, concerned, and sincere. With the lack of presence physically, teacher should be able to create a comfortable, supportive environment to encourage participation of the learners during the process of virtual teaching and learning. The teachers are also have to be sensitive, flexible and very accessible and will to give individual attention.

Chickering and Gameson (1987) in Stern, J pointed seven principles of good teaching: 1) Encourage student-faculty contact; 2) This can be

facilitated by discussion forum. Students can; 3) Encourage students cooperation. Student – student contact through discussion or online forum can nurture the group work and collaboration among students. Teacher can offer such as peer reviews, project – sharing and thread – leaders to moderate discussion to achieve higher learning outcomes; 4) Encourage active learning. The active learning can be accelerated through designing interactive assignments on the web in which the students have options to learn the lesson. Give students choices to control what assignment to complete; 5) Give prompt – feedback. In online learning, teachers should make students can see the result of their tests and it feedback; 6) Emphasize time on task. Giving specific time to respond in each unit of module through discussion and build a reward system of each post; 7) Communicate high expectation. Online teachers need to be very clear and concise in determine the goal of learning and telling the learners about it will make the students focus on the line; and 8) Respect diverse talent and ways of learning.

Students have different style of learning. Giving them choices to accommodate with their favorite comfortable experiences in learning can increase their satisfaction and retention. For example, allow your students to vary what they favor in doing the assignment.

Rose, Sr,M (2018) found that there are several key points in effective online teaching: 1) Online teacher avoid a didactive approach. Online teaching is not textbook online in which the material is informed and conveyed or transmitted from teacher to students; 2) Online teachers vary their pedagogy. It means teachers should avoid using the same strategy, the same technique or the same mode of delivery in teaching. Using various tool, media of technology, and always make a new creative way of teaching will boost students' motivation in learning; 3) Online teacher use productive failure. Productive failure refers to problem-based approach. For online teacher, starting a lesson from a mistake and lead into discussion can give students opportunity to expand their ideas, enrich their knowledge and increase the students' higher thinking skill. This problem-solving based learning is concrete, authentic and meaningful; 4) Effective online teachers facilitate the learning. online teacher need to be able to keep the rhyme of learning run effectively as she or he socially presence to keep students engaged in learning; and 5) Online teacher provide seamless structure.

In this view, online teacher need to be able to present the learning in logic, systematic and clearly structured objectives. All the process of teaching is delivered structurally and predictable and is systematic.

A quote from Walden university website mentions that *The right teacher can really open up the world of online learning*. This can be explained that being an online teacher takes skills as if in the traditional classroom, but it takes more since it is not face to face interaction in the real traditional classroom but virtual room. Teacher as the main actor in teaching should be very talented to encourage students in online learning. There are some characteristics of great online teacher: 1) Inspiring. Teachers should be inspiring to encourage students' success; 2) Patience. There lots of problems arise in online learning. Teachers should be able to make a good deal with miscommunication in learning, able to make students stay focus on the instructions and materials given, and be friendly to help students' difficulty; 3) Accessible. Since the online teachers usually have no office hour as in the traditional classroom, online teacher have to ensure that he is able to be contacted-via email, chat, or video conferencing; 4) Certified. In some classes, certified online teacher is required. Commonly they are paid more; and 5) Technologically skilled. Online teaching uses technology in all process of the teaching. The ability to use it, to modify it and to be always updated in technology in a teaching and learning is a skill that must be possessed by online teachers.

Motivated to help students succeed. Teaching from the distance takes more effort to encourage students to get succeed in learning. Great online teacher can motivate students even from the distance.

Technology in online learning: Which is best?

In this era, in which technology grows rapidly, the existenceof technology cannot be neglected in the classroom. Technology helps educators to reach more studentsefficiently. The development of technology opens the chance of new learning style. Nowadays, far away students merely depend on the technology in processing their learning. It opens new look of learning. In a blog of UoPeople, it was written that there are some reasons that technology is needed in the classroom: 1) It simplifies access to educational resources. Technology of internet keeps unlimited resources of learning any materials.

The most important is that it is easily accessed anytime and anywhere from the students' smartphones; 2) It improves the learning experiences. Using artificial intelligent, teachers can develop and design many interesting and creative lesson plan and media; 3) Students can learn at their own pace. technology can help students to have individual learning in which they can control their learning and update it; 4) It helps students to prepare their own future careers. Technology is already widely used in many business affairs, field of industries. Fit it into classroom will familiarize students with it; 5) It is tool that is used by the students. Students have been introduced with technology from a young age. So, delivering the learning or new ideas using technology they know will make students more confident.

Not as traditional classroom, online learning facilitates students to interact with their teacher or instructor and or classmates via technology and internet. The existence of technology and internet becomes requirement to ensure that communication between teacher and students run effectively. As Garisson (1990) mentioned in AECT (2001) "Distance education is inexorably linked to the technology of delivery. …. Without technology, a future for distance education does not exist.UNESCO (2016) has set a range of percentage in which the student and the teacher communicates via technology of internet. ≥ 80% of the content delivered online. While, blended education is within 30-79% of the content delivered online, andprinted material delivered by post and/or other tools for bridging the distance.

As the technology develops from time to time, the correspondence years in education left behind in some developing countries. There are some technologies are used to bridge the distance in learning. Computer for learning or CAL (Computer Assisted Learning) and computer conferencing is more preferred to use. Some reasons are proposed by expert about the use of CAL and video conferencing. First, Lauzon and Moore in 1989 stated that CAL and computer conferencing allow learners work together collaboratively via internet in which correspondence can't. Their research found that CAL can fulfill the different needs and characteristics' of adult learners because the learners can control or manage the instruction.

They summed up that computer conferencing is effective in removing the barriers of time and space constraints on communication. Meanwhile, Davie and Wells (1991) mentions the existence of computer conferencing is an ideal communication tool for bridging time and space among those who share similar interest. Finally, Harasim (1990) noted that the openness of computer conferencing environment give an equal chance to the learners to contribute in learning. The use of CAL and computer conferencing solves the problems of distance; space and time.It is understood that the utilizing technology as a device in online education via internet is a must.

The existence of technology has ultimately influence the way of teaching and learning. Correspondence technology –using mail to deliver the course material- as the earliest way of technology used in teaching is replaced by the second generation by the use of radio and television in 1920s – 1960s. Then, the invention of cassette recording, video recording and limited broadcast channel enriched the way of teaching and learning till the end of 1980s. The emerged of Arpanet raised the use of teleconferencing, video conferencing until 1990s. In 1990s, the limited use of computer because it was expensive and the emerged of World Wide Web has provided greater access of wireless technologies that allow internet anywhere as in the classroom. Until today, the technology keeps improving and it makes teaching and learning also need to adjust with the growing of technology-because technology is dedicated to easier any sectors of human life including education .

Recently, there are various technology has been used and adapted to the need of education, especially in teaching and learning process. Related to the question of which technology is best to use in online learning,it is better to look back a bit about the mode of delivery in communication. In online learning, the process of teaching and learning can be delivered either synchronously and or asynchronously. These modes of delivery have their own uniqueness of using. Table 1 shows some benefits and limitations of communication tools taken from Benson, R., Brack, C (2010) and the characteristics of each of delivery technologies are summed up in table 2.

Table 1. Benefits and limitation of communication tools by Benson, R., Brack, C. 2010

Tool	Specific benefits	Limitations
Email	- Seamless integration of learning and teaching activity with other email activities. - Record of conversation is visible to all. - Communication can occur at convenient times - Attachment of files allows sharing.	- Mixes up learning and teaching activity with other email activities which makes following a thread difficult. - Managing group is more cumbersome.
Asynchronous discussion	- Separates learning and teaching activity from other work activities. - Threaded record of conversation is easily viewed, reviewed and followed. - Communication can occur at convenient times. - Attachment of files allows sharing. - Lends itself to group management.	- Teachers and learners have to go specifically to the discussion space. - Contribution can be missed when activity in the discussion space is sporadic.
Synchronous text chat	- Creates an online 'community' with a sense of belonging (particularly useful for off-campus learners). - Record of interactions can be saved.	- Requires scheduling (for participants to be available at the same time) which reduces flexibility. - Technology is cumbersome, requiring fast typing; participants tend to leave the session if the entry to the space is not acknowledged immediately. - Conversation is often disjointed because of different typing speeds. - Does not allow sharing files.

Synchronous and asynchronous communication that can be used in online learning can be viewed from the description of the term. Synchronous e- learning refers to activities of learning that is used internet as the tool in the real time, while asynchronous e – learning is considered as learning via internet through messages without real time interactions between the instructor and the learners.

While, the table below sum the characteristics technologies that can be used as models of distance education. It is taken from David Chrystal (2003).

Tabel 2. Characteristics of Delivery technologies

Models of distance education and associated delivery technologies	Characteristics of Delivery technologies					
	Flexibility			Highly refined material	Advanced interactive delivery	Institutional variable costs approaching zero
	Time	Places	Pace			
FIRST GENERATION The correspondence model - Print	Yes	Yes	Yes	Yes	No	No
SECOND GENERATION The Multi-media Model						
- Print	Yes	Yes	Yes	Yes	No	No
- Audiotape	Yes	Yes	Yes	Yes	No	No
- Videotape	Yes	Yes	Yes	Yes	No	No
- Computer-based learning (eg. CML/CAL/IMM)	Yes	Yes	Yes	Yes	Yes	No
- Interactive video (disk and tape)	Yes	Yes	Yes	Yes	Yes	No
THIRD GENERATION The Telelearning Model						
- Audio teleconferencing	No	No	No	No	Yes	No
- Video conferencing	No	No	No	No	Yes	No
- Audiographic communication	No	No	No	Yes	Yes	No
- Broadcast TV/radion and audioteleconferencing	No	No	No	Yes	Yes	No
FOURTH GENERATION- The Flexible Learning Model						
- Interactive Multimedia (IMM) online	Yes	Yes	Yes	Yes	Yes	Yes
- Internet-based access to WWW resources	Yes	Yes	Yes	Yes	Yes	Yes
- Computer mediated communication	Yes	Yes	Yes	Yes	Yes	**No**
FIFTH GENERATION- The						
- Intelligent Flexible Learning Model	Yes	Yes	Yes	Yes	Yes	Yes
- Interactive multimedia (IMM) online	Yes	Yes	Yes	Yes	Yes	Yes
- Internet based access to WWW resources	Yes	Yes	Yes	Yes	Yes	Yes
- Computer mediated communication, using automated response systems	Yes	Yes	Yes	Yes	Yes	Yes
- Campus portal access to institutional processes and resources	Yes	Yes	Yes	Yes	Yes	Yes

As the tables show, that technologies that can be used in online teaching and learning have their own characteristics. They are differed from it flexibility of time, place and pace, whether they are highly refined materials or advanced interactive delivery and as it spends cost to the institutions variously. In correspondence model, the use of printed material provides flexible opportunity for the learners to access it. They can control when to open the materials and work on it. The lack of it is that is not provide interactive interaction between teacher and the learners, and allow the institution to set free from some cost such as, internet budget as in flexible learning model and the intelligent flexible learning model.

After all, the writer would like to share some recommended technologies that can be used in online learning. It is figured out in the table 3.

Table 3 Recent technologies in online learning by Benson, R., Brack, C. 2010

Term	Definition/ Description	Example/Application
Blog (Weblog)	Online journal or diaries typically 'owned' by individual with comments contributed by others	Sharing information and ideas
Folksonomy	Collaborative creation and management of tags to annotate and categorize contents. Tags (metadata) are generated by users (social tagging), not only by experts (as in search engines)	Aggregating tags of users create folksonomy. Example; delicious.
Webhosting service	Use to share specific content, connect with 'like' content	Image and video sharing, online photo or video management and sharing application. For example, Picasa, Flickr and Youtube
Mashup	Digital media file containing any or all of the text, graphic, audio, video and animation which recombine and modify existing digital work to create derivative works.	Students' projects
Mobile learning	Learning that takes advantage mobile (portable) devices	Mobile phones: text messages. Tablet/computer
Podcast	Audio/video which is required hostserver	Content online. Students create a site and connect to the similar site
Shared documents	Non html documents which are editable online	Google document, spreadsheet
Social software	Software which facilitates social interaction	Social networking, such as Facebook, Instagram, etc
Virtual worlds	Online simulation such as in a game	Second life
Web	Web development and design that facilitates communications, secure information sharing, interoperability and collaboration into World Wide Web	Concept that led to the development of web community. For example, wikis, blogs
Wiki	Editable web page 'owned' by groups	Wikipedia

Conclusion

Table 3 lists only some technologies on the time it was written. Nowadays, the technology develops faster. Web 2.0 has turned to more sophisticated into Web 5.0. Many websites, blogs, learning platforms, learning applications grow in every second to support online learning or offline learning. They have advantages as well as disadvantages. Each of them can be modified each other to meet the students' needs in order to produce qualified teaching and learning. It can be concluded that each technology is best for its own characteristic. The ability of teachers as the facilitators of learning in using the technologies, modifying it, mixing it, and applying it the virtual classroom determines the quality of learning as well as the quality of the outcomes and the quality of the teachers itself.

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