THE USE OF MOBILE LEARNING TO ENHANCE LEARNING INNOVATION PASCA PANDEMIC COVID 19

Memet Casmat[1], Benny A. Pribadi[2]

[1, 2]*Universitas Terbuka (INDONESIA)*

Abstract

This study aims to identify the characteristics, objectives, benefits, advantages and limitations of mobile learning analyzing opportunities and challenges the use of mobile learning as a learning model during the Covid-19 pandemic as well describes the application of the use of mobile learning in learning in education base. This research is a literature study with a qualitative approach using descriptive-analytic analysis. The research results show that mobile learning as a subset of e-learning has many advantages in facilitating learning process without the limits of time, space and place. Although it has limitations, but mobile learning has a very good opportunity to be utilized on virtual learning during the covid-19 pandemic as an alternative to learning face to face. Tablets, smartphones and laptops can be used as supporting devices in the implementation of mobile learning. In order to be implemented optimally, teacher skills are needed in operating the device and designing teaching materials properly digitally based.

Keywords: *e-learning, mobile learning, learning resources, during the covid-19 pandemic*

1   INTRODUCTION

The teaching and learning process is an interactive communication process between teachers and students. In the process of communication sometimes experience difficulties so we need an intermediary in the form of media that can connect communication between teachers and students. In essence, the use of media has the goal of creating more communicative and meaningful learning for students. Along with the development of increasingly advanced technology, there are many alternative media that educators can use to help their students learn, one of the technologies that is currently in great demand by the public is mobile learning using smartphones.

Learning media can be developed on mobile devices that are easy to carry anywhere such as smartphones and tablets (Squire, 2009). In addition, students can also easily interpret data, improve understanding, condense information, present data, generate motivation and interest in students in learning so that students do not only listen to explanations from the teacher but through learning media, students can also make more observations. and demonstrations (Sudjana & Rivai, 2011).

Media development in the form of mobile learning can meet the criteria for learning objectives and content, suitability for student characteristics, efficiency of learning time, and ease of use by students. The characteristic of using a smartphone as a learning medium or called mobile learning

is that it has a very high level of flexibility (Wirawan, 2011). As a complement to existing learning, mobile learning allows its users to access materials, directions, and information related to learning anytime and anywhere.

Mobile learning is an alternative to developing learning media that can be used as a learning supplement so that it can train students to learn independently (Arief, 2014).

As for several researchers who have conducted research on the use and utilization of mobile devices in learning, namely (Musahrain. et al, 2017) which discusses the application of Mobile Learning as a medium in learning, (Ibrahim, Nurwahyuningsih. et al, 2017) which discusses the development of Mobile Learning learning media based on Android in science subjects for junior high school students, (Rahmawati, Erni, 2017) who found that m-learning significantly supports independence and student learning outcomes in geography subjects, (Hapidz, Radif, 2019) which discusses the design and manufacture of media mobile learning on the subject of air conditioning systems and installations.

This article aims to present a literature study that discusses the concept or
theory about the use of mobile learning in learning

2 METHODOLOGY

This research is a library research where the data comes from library sources in the form of books, scientific articles, journals, and other sources that are coherent with the object of discussion. This study uses a qualitative approach to obtain in-depth, detailed and meaningful data on what is being studied (Sugiyono, 2011). This research is descriptive-analytic, which is trying to describe clearly and systematically about the object of study being discussed, collect and process data, and present conclusions after analyzing the research discussion.

Sources of data in this study consisted of primary and secondary data. Primary data is data obtained directly without intermediaries or original data, while secondary data is data obtained from existing sources. The primary data in this study were books and journals about learning during the COVID-19 pandemic and m-learning applications. While the secondary data are books, journals and other sources related to m-learning and its applications during the COVID-19 pandemic. Data analysis was carried out in a descriptive-analytic manner by providing a detailed explanation of the research object being discussed.

3 FINDINGS AND DISCUSSION

3.1 Mobile Learning Concept

The term mobile learning by Tamimuddin in (Musahrain, 2017) can be interpreted as the use of handheld and mobile devices or technologies such as mobile phones, PDAs (Personal Digital Assistants), tablets and laptops used in learning (Musahrain, 2017). This opinion is in line with what was expressed by Desmond in Hamzah (2006) that m-learning refers to the provision of learning and training through the use of unlimited equipment such as PDAs (Personal Digital Assistants), cellular phones, and tablets (Hamzah, 2006).

Quinn Clark in Musahrain (2017) argues that mobile learning is the intersection of mobile computing and e-learning: accessible resources wherever you are, strong search capabilities, rich interaction, powerful support for effective learning, and performance-based assessment. E-learning is independent of location in time or space. Based on this opinion, it can be interpreted that mobile learning is learning through mobile computers and e-learning is a tool that can be used as a source to access information that can be done anywhere, has a strong ability to access, is rich in interaction, provides full support. in achieving effective learning and assessment-based initial appearance (Musahrain, 2017).

Mobile learning or m-learning is often termed as e-learning through mobile computing devices. In general, it is considered as any device that is small enough, can work alone, can be carried at all times in everyday life, and can be used for some forms of learning. This device can be seen as a tool to access content, either stored locally on the device or accessible via interconnection.

This device is also a tool for interacting with other people, either through voice, exchanging written messages, still images and moving images (Information Technology Computer Handout, 2019). Mobile learning users can access learning content anywhere and anytime, so that the independence of students will grow because of access to learning content without being bound by space and time (Hakim, 2017).

Thus, mobile learning can be interpreted as part of e-learning that is used by teachers and students in the learning process through handheld devices such as tablets, cell phones, PDAs (Personal Digital Assistants), with the aim of making it easier to access teaching materials for teachers and

other materials. learning for students without time and place limits, so that learning can be more effective and efficient. In addition, learning outcomes can also increase and learning becomes more quality.

3.2   Classification of Mobile Learning

The mobile learning system has several general classifications based on the following indicators:

1. Types of mobile devices supported by notebooks, table PCs (Personal Computers), PDAs (Personal Digital Assistants), smart phones or cell phones

2. Type of wireless communication used to access learning materials and administrative information GPRS (General Packet Radio Service), GSMC (Global System for Mobile Communications), IEEE 802.11, Bluetooth, irDA

3. Educational support synchronously and asynchronously. Users can communicate synchronously via chat and voice communication, or asynchronously via email and SMS (Short Message Service) with educators

4. Support for e-learning standards

5. Availability of a permanent internet connection between the m-learning system and the user

6. User location

7. Access to learning materials and administrative services (Information Technology Computer Handout, 2019).

The general classification in mobile learning systems can clearly be seen in the below of following figure
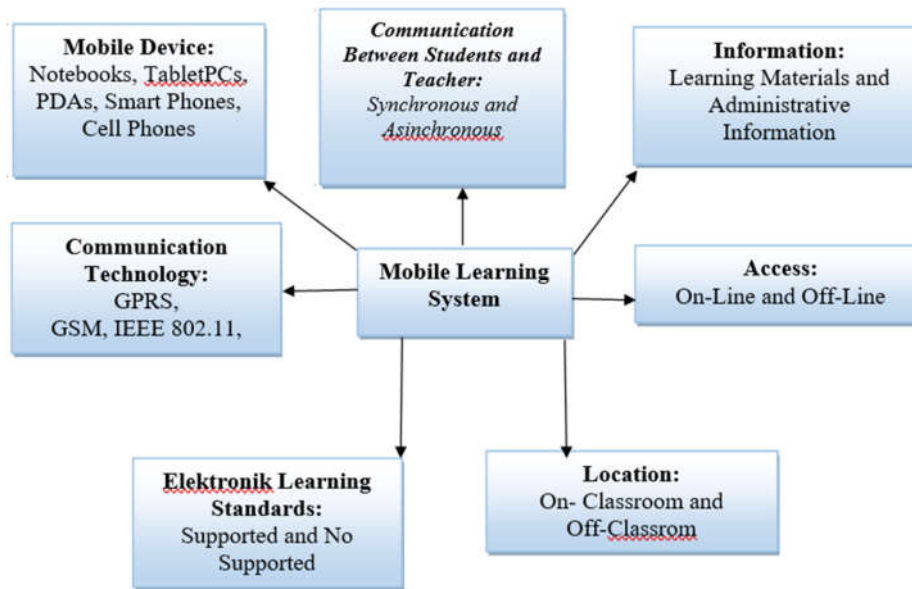
General Classification of Mobile Learning Systems Figure

3.3   Functions and Benefits of Mobile Learning

3.3.1 Mobile Learning Function

There are three main functions of using mobile learning, namely supplement, complement, and substitution functions (Miftah., 2010). The supplement or additional function can mean that there is freedom for students to choose and use mobile in accessing learning materials or in using them as learning media. The complement function is defined as a complement because it can be used as an evaluation tool, providing enrichment, reinforcement and can be used to repeat or recall learning that has been done even without the help and assistance of the teacher or tutor.

While the substitution function, which means that students can be given the freedom to choose the learning model used, both conventional learning models, technology-based learning models, or mixed models, namely combining conventional and technology models.

3.3.2 Benefits of Mobile Learning

Mobile learning has several benefits seen from two angles, namely the point of view of students and educators. When viewed from the point of view of students, mobile learning allows the development of high learning flexibility. Learners can access learning materials at any time and can be repeated. Learners can interact with educators at any time. With conditions like this, students can further solidify their mastery of learning materials.

While from the point of view of educators, mobile learning is useful in terms of updating learning materials which are the responsibility of educators in accordance with the demands of scientific developments that occur, can develop self-potential for educators, conducting research in order to increase their knowledge and knowledge because of the relatively large amount of free time they have, can control the learning activities of students, educators can find out when students learn, what topics are studied, and how long the topics are studied and how many times the topics or topics are studied. material is re-studied, can check the performance of students in carrying out practice questions after studying certain topics and check students' answers and provide students' work (Majid, 2012).

Thus, the benefits of mobile learning can be a source of learning for educators and students both in the process and in learning outcomes at school.

3.4   Advantages and Limitations of Mobile Learning

Each medium has advantages as well as limitations. Likewise, mobile learning as a learning medium that can be used by teachers and students in educative interactions. There are several advantages and limitations of mobile learning, namely:

3.4.1 Advantages of Mobile Learning

M-Learning has advantages compared to other learning resources used in learning that can be used anywhere and anytime, most mobile devices have relatively cheaper prices, small and light device sizes, can be accessed by more students because m-learning utilizes technology that can be used in everyday life.

3.4.2 Limitations of Mobile Learning

M-Learning is a potential alternative to expand access to education. However, there is not much information about the use of mobile devices, especially cellular phones as learning media. This is unfortunate considering that the level of ownership and the level of use that is already quite high is underutilized to be directed towards education. Most of the content circulating in the market is still dominated by entertainment content and very little educational aspect.

Therefore, there must be the development of mobile device-based content or applications that are more numerous, diverse, inexpensive, and easily accessible, especially educational content. Although m-learning has advantages, it also has limitations. The limitations of m-learning are mainly on the side of the device or learning media.

The limitations of this mobile device are the ability of the processor, memory capacity, display screen, power, and input/output devices (Wear, 2019). Thus, this limitation can be overcome along with the development of increasingly rapid communication technology.

3.5 Opportunities and Challenges of Mobile Learning as an Alternative Post-Covid-19 Learning Model

One of the effective and efficient learning models during the COVID-19 pandemic is mobile learning. Learning with this model provides great opportunities for teachers and students during the COVID-19 pandemic. Moreover, the government provides online facilities through online learning media by preparing sources, media and links as stated in the guidelines for organizing learning in the 2020/2021 academic year and the 2020/2021 academic year during the coronavirus disease 2019 (covid-19) pandemic (Kemendikbud, 2020).

There are several software application programs needed in mobile learning, namely the Learning Mobile Author (LMA) program, and the photo editing application program or PhotoScape. In addition, there is a common application program that is familiar, namely Microsoft PowerPoint. These three application programs are quite mutually supportive in preparing teaching materials as well as converting and editing files needed in designing mobile-learning learning programs (Darmawan, 2016). If this learning is used properly, it will provide good opportunities, but if it is not used properly by teachers and students, then this becomes a learning challenge in the future.

Mobile application learning will be a promising innovation prospect that develops through learning applications that are supported by many mobile phone brands.

In addition, the lack of optimal mobile learning in the learning process has a negative impact on students. Moreover, various social networking applications that appear today on the internet, be it Facebook, Twitter, Telegram, Instagram, online games, and other social networks will distract students from learning. This is the challenge for mobile learning in the future. Therefore, teachers must package and design mobile learning learning in an interesting, creative, innovative and fun way so that students do not get bored in learning.

3.6   Mobile Learning Applications in Learning

Current technological advances require teachers to be more creative in integrating technology-based media into learning. One of them can be done through the use of mobile learning. Mobile learning can be utilized at all levels of education, including at the basic education level. Basic education is the initial level of education during the first 9 years of children's schooling and becomes the basis for secondary education.

Basic education is carried out to provide and develop attitudes and abilities, knowledge and basic skills needed to live in a community environment, and to prepare students to continue to secondary education. In basic education, teachers carry out learning by developing students' learning creations through edutainment or playing with learning or play and learning (Pramana, 2017).

Playing while learning will affect the development of students, starting from their physical development, encouraging communication with other students, and channeling pent-up emotional energy when playing. Therefore, teachers must choose educational games in order to maximize and optimize the human potential of students. Educational game tools must be designed according to the age range of students at the basic education level.

Teachers must pay attention to aspects that must be developed, both physical, motor, emotional, social, language, cognitive, and moral aspects that can be used in various ways (Mursid, 2015). One way that can be taken by teachers is to use mobile learning in learning. Considering the

tendency of students at the basic education level to prefer to use gadgets or smartphones as media that looks interesting and fun, as well as many game applications or games in it so that it beats other media. Therefore, teachers at the basic education level must properly design and design their learning through mobile learning.

However, the teacher must also understand the characteristics, interests and potentials possessed as well as the learning styles of students, so that learning can be achieved easily. In addition, teachers must also be the main learning source or mediator in learning whose task is to design or design, prepare and utilize other learning resources so that learning is of quality (Samsinar, 2020).

If the teacher pays attention and focuses on the character, interests, potential, learning styles and multimedia learning, then the teacher must take advantage of learning with mobile-learning. Mobile learning has a system based on its tools that use notebooks, tablets, PDAs, smartphones, cell phones, and all mobile devices that can be used whenever and wherever a person is. When viewed from the network aspect, namely General Packet Radio Service (GPRS), Global System for Mobile Communication (GSM), bluetooth, and infa red.

When viewed in terms of communication for teachers, it can be done online and offline by means of synchronous and asynchronous communication. And when viewed in terms of location, it can be done outside or in the classroom (Aripin, 2018). Mobile learning is a form of learning technology in the form of developing teaching materials, both theory and practice, which requires several supporting abilities. These abilities relate to the ability to analyze curriculum starting from competency standards, basic competencies, core competencies, teaching materials, content or material analysis, and topics of teaching materials to be studied.
developed to the Syllabus and Learning Program Plans.

In addition, the ability to analyze the availability and carrying capacity of learning media or multimedia learning is required. On the other hand, the initial requirement that must be possessed is the ability to install software that supports the production of mobile learning teaching materials both offline and online. There are several software application programs needed, namely the Learning Mobile Author Program (LMA), Photo Editing Application Program or PhotoScape, and Microsoft PowerPoint.

These three application programs support each other in preparing teaching materials as well as converting and editing files needed in designing mobile learning learning programs. In developing mobile learning learning, one must analyze the content of the curriculum structure in each subject in school or analyze several material topics that are indeed adaptive to be developed into a mobile program. Therefore, not all material topics in a subject can be designed in the form of mobile learning.

Thus, the requirement for the m-learning program is to analyze content. After analyzing the content, it is necessary to develop the topic into the form of learning flow stages through flow charts. Flow chart or flow chart is a chart that contains graphic symbols that show the direction of the flow of activities and data owned by the program as an execution process. Flow chart models vary according to their type, both for drills (practices), tutorials, simulations and games. The flow chart models in interactive multimedia are as follows:

a. Flow Chart Model with Drill Type (Practice)

The stages of learning with this type are presenting problems in the form of practice questions at a certain level of student performance, students working on practice questions, the program records student performance, evaluates and provides feedback, if the answers given by students are correct, then the program presents the next material and if students answer incorrectly then the program provides facilities for repeating exercises or remedies which can be given partially at the end of the whole question.

Learning with this model does not present repetition when presenting questions. Repetition occurs after solving the overall problem and after checking the ability results whether they have met the standard or not.

b. Flow Chart Model with Tutorial Type

The stages of learning with this model are introduction or giving instructions, presentation of material information, questions and responses, assessment of responses, feedback, repetition, lesson arrangements, introduction and closing.

c. Model Flow Chart with Simulation Type

The stages of learning with this model are giving instructions, presenting material, giving simulations, conclusions and closing.

d. Model Flow Chart with Type Games

The learning stages of this model are started with a menu containing the identity of the programmer, learning instructions, program help menu, games, game controls, successful or failed games, closing or exiting. After determining the flow chart model, the next step is to develop a storyboard according to the flow chart that was made.

Storyboard is basically a development of a flow chart. The flow chart is the center of a computer-based learning program production with various models adapted to the characteristics of the material or information that has been designed in program production planning (Darmawan, 2016). The flow chart only contains an outline of the contents of each plot from start to finish, and the storyboard is a more detailed or more complete explanation of each flow contained in the flow chart.

The function of the storyboard is as a medium to provide detailed or more complete explanations contained in each plot in the flow chart, as a guide for programmers and animators in realizing program plans in the form of programming language and animation, as a guide for voice actors and recording technicians in record sound for the needs of the script, as a written document, and as material in making a manual book as a user manual and program contents according to the storyboard that was made. There are several things that must be considered in developing a storyboard, namely:

a. Determine the type of visual that will be used to support the content or content of the lesson, and make a sketch of it.

b. Prepare the part to be played audio in the program package. Audio can be in the form of silence, special sound effects, background sound, music and narration. The combination of sounds will be able to enrich the program package

c. Pay attention to the content or content of the lesson, it must include everything in the storyboard

d. Review storyboards by checking that all audio and graphics match the text, introductions and introductions show something that can attract attention, important information has been included, interactive sequences have been combined, learning strategies and tactics have been combined, narratives are made as concise and short as possible, program supports exercises the exercises, flow and organization of the program are easy to follow and understand

e. Collect and present storyboards so they can be seen at once

f. Storyboard review and criticism by the production team

g. Record all comments, criticisms and suggestions

h. Revise the storyboard according to input from the production team

i. Start doing production (Arsyad, 2015).

After the storyboard is complete, then prepare the file to make mobile learning teaching materials in Microsoft PowerPoint (PPT) format, save as file by selecting PowerPoint Presentation, select save as type JPG file, click every slide, and click ok. Furthermore, for the need to convert files into mobile learning teaching materials, they are processed with two application programs, namely the PhotoScape application program and the Mobile Learning Author Application Program (LMA). After processing this application program, it is ready to produce mobile learning programs

4 CONCLUSION

Based on a review of various literature, it can be concluded that mobile learning is part of e-learning as a form of learning that utilizes electronic devices, digital media, and mobile communication devices and technologies whose development is very rapid. The use of mobile learning is relatively easy, without limits and time and the price of the device is affordable so that both teachers and students can use it in learning.

Even though it has limitations, mobile learning has excellent opportunities to be utilized in virtual learning during the Covid-19 pandemic as an alternative to face-to-face learning. Mobile learning can be a solution for learning during the Covid-19 pandemic by utilizing devices that are familiar to teachers and students, such as tablets, smartphones and laptops. Mobile learning can be a learning innovation to be applied at all levels of education, including basic education.

To be implemented optimally, the teacher must master this learning model by properly packaging and designing teaching materials starting with installing the Learning Mobile Author (LMA) software application, the Edit Photo or PhotoScape Application program, and Microsoft PowerPoint. After that, prepare teaching materials and convert and edit files needed in designing mobile learning learning programs.

Mobile learning offers many benefits and advantages in making learning effective. Therefore, this learning model is highly recommended for teachers in implementing virtual learning during the Covid-19 pandemic as a substitute for face-to-face learning. This research is limited to only examining mobile learning conceptually. For other researchers, it is highly recommended to conduct further studies on the use of mobile learning, one of which is related to the effectiveness of using mobile learning in virtual learning.

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