

Effectiveness of Use of Smartphone Communication Technology as Mobile Based Learning Media for STKIP Weetebula Students in the Covid-19 Pandemic Period

Ferdinandus Bele Sole^{1,*} Desak Made Anggraeni²

¹ Primary Education Study Program, STKIP Weetebula, Sumba Barat Daya, Indonesia

² Physic Education Study Program, STKIP Weetebula, Sumba Barat Daya, Indonesia

*Corresponding author. Email: bangflow4@gmail.com

ABSTRACT

The spread of corona virus which is well-known as covid-19 in all over the world gives impact to various sectors of life. In the field of education, especially in higher education, learning activities is shifted from face-to-face to online learning. This is intended to prevent the emergence of a new cluster of transmission of the covid-19 virus spreading in the campus area. The implementation of online learning at STKIP Weetabula is by utilizing the communication technology which is smartphone to operate some application such as email, WhatsApp and messenger. This study aims to describe the role of smartphone as learning media used by students in the pandemic of the Covid-19 virus situation. This study uses survey as the research method with descriptive qualitative and quantitative approaches. The data collection technique is by using google form application. The result shows that the use of smartphone communication technology is considered very effective as a media of learning in the covid-19 pandemic situation. The indicator of effectiveness is divided in four component such us program success, the target success, the program satisfaction, and achievement of overall goals. The score gained is 81.6 and it belongs to very effective category.

Keywords: *Effectiveness, Smartphone, Learning Media, Covid -19 Pandemic*

1. INTRODUCTION

Nowadays, the entire world is experiencing a new disease caused by a virus which well known as coronavirus disease 2019 (Covid-19). The newly discovered virus, causing a similar infection (SARS-CoV), was initially named as nCoV 2019 (January 2020) and was later called COVID-19 in February 2020. The WHO and the China Bureau had announced the discovery of a new coronavirus (SARS-CoV-2), which has been isolated from the patients suffering from pneumonia [1].

On March 11, as the number of COVID-19 cases outside China has increased 13 times and the number of countries involved has tripled with more than 118,000 cases in 114 countries and over 4,000 deaths, World Health Organization (WHO) declared the COVID-19 a pandemic [2]. Therefore, WHO asked countries to take

urgent and aggressive actions to prevent and address the spread of the Covid-19.

The Indonesian government confirmed the first case of Covid-19 on March 2, 2020. The 2019 coronavirus pandemic was confirmed to have spread to Indonesia when a dance instructor and her mother were infected from a Japanese national [3]. Until now, patients who have been diagnosed positive with Covid-19 have spread to all provinces in Indonesia. Beside it gives impact on human health, the emergence of this disease also affects various sectors of human. Therefore, the governments need to make strategy and policy to minimize its spread.

One of the efforts made by the government in Indonesia is by implementing an instruction to all citizen to do physical distancing Physical distancing means limiting the number of people you come into close contact with and distancing from each other to reduce the opportunity for the virus to spread from person to person

[4]. Another policy is to implement Large-scale Social Restrictions (PSBB). This policy is state in Government Regulation No.21 of 2020 concerning Large-Scale Social Restrictions (PSBB). PSBB is a limitation of certain activities of residents in an area suspected of being infected with corona virus disease 2019 (Covid-19) in such a way as to prevent the possibility of spreading the corona virus disease 2019 (Covid-19) [5]

Another policy taken by the government is Belajar Dari Rumah (BDR) which in English is translated as learning from home. This policy was done by the Ministry of Education and Culture as stated in Circular number 4 of 2020 related to the Implementation of Education Policy in the Emergency of the Spread of Corona Virus Diseases (Covid -19) [6]. This policy is supported by circular letter No.15 2020 about guideline of learning from home application in Covid-19 situation [7]. The purpose of implementing learning from home is to ensure the fulfillment of students' rights to receive education services during the covid-19 situation, protect all members who are on education field from the effects of Covid-19, prevent the spread an transmission of Covid-19 in all educational units and ensure the full filment of psychosocial support for teachers, students and parents [8].

In higher level of education, the learning method applied is online learning. As what has been stated that learning in level of university in all zones must be done online. Both for theoretical courses as well as for practical courses must be done online as far as it possible. Face-to-face activities on campus might be happened if all members of institution follow and do the health protocols.

STKIP Weetabula as a campus institution in the Sumba Island also implements the government policy by doing a blended learning program as an effort to minimize the spread of the corona virus. Blended learning is implemented by combining the face-to-face learning and online learning. Face-to-face activity is done every two weeks. After that, the lecturers give the students materials and assignment that must be studies and submitted online [9]. Online learning activity is done by using smartphone as learning media. The platforms used to communicate between students and lecturers are email, whatsapp and messenger. This research explores the effectiveness of using smartphone communication technology as a learning media for students at STKIP Weetabula during the Covid-19 pandemic. This study aims to describe the effectiveness of smartphone usage as a learning media in the middle of the Covid-19 virus disease for STKIP Weetabula students.

The use of mobile technology can significantly enhance blended learning [10], but can have a major role

in also supporting on-campus teaching. Smartphones have been used in educational activities to access course content, acquire information related to students' performance, and to encourage discussion and sharing between students and teachers [11]

In the Indonesian dictionary, effectiveness comes from the word effective which means having an effective value, influence or effect, usually it is defined as an activity that can provide satisfying results [12]. Effectiveness is measurement to compare the plan and process with the results achieved. In order to determine the effectiveness or failure of a program, it is necessary to measure the effectiveness. There are ways to measure effectiveness in general and the most prominent which can be described as follows: 1) Program Success: the effectiveness of a program can be carried out with operational capabilities in making the work programs based on the previously set goals. The success of the program can be seen from the process and the mechanism of an activity done in the field; 2) the Success of the Target Effectiveness from the perspective of goals achieving, it could be done by focusing attention on output aspects. It means that the effectiveness can be measured by how far the level of output in the policy and procedure of the organization achieve the goal that has been planned; 3) Satisfaction with the Program: satisfaction is an effectiveness criterion that refers to the success of the program that meets with user needs. The users will feel satisfaction with the quality of the product provided, the higher the satisfaction felt by users can lead to benefits for the institution; 4) Input and Output Level: the effectiveness of input and output levels can be seen from the ratio between input and output. If the output is bigger than the input, it can be perceived that it is efficient. In other hand, if the input is bigger than the output, it can be perceived that it is inefficient. 5) Achievement of Overall Goals: it is about how far the organization achieve the goal. In this case, it is a general assessment of as many single criteria as possible and result in general assessment if the effectiveness of the organization..

In this study, the components used to measure the effectiveness of using smartphone as learning media are; 1) program success; 2) target success; 3) Program satisfaction and 4) overall goals and achievements.

2. METHOD

This study uses survey as the research method with descriptive qualitative and quantitative approaches. The subjects of this study are the students of STKIP Weetabula who are learning during the Covid-19 pandemic. They are students from 2019-2020 academic year. The number of the subjects in this study are 330 students from six programs which are Primary Teacher

Study Program (PGSD), Bahasa Indonesia Study Program, Mathematic Study Program, Physic Study Program, Chatolic Study Program and Science Education Study Program. The subjects of the study are the students from semester II, semester IV and semester VI. The data collection technique is survey using the google form application. The research instrument is questionnaire. The research data will be analyzed using descriptive analysis techniques. In order to find out the level of effectiveness of using smartphones as learning media during the Covid-19 pandemic. The data obtained were then compared with the following category table:

Table 1. Level of Effectiveness Category

Score Range	Category
19-33	Very Ineffective
34-48	Ineffective
49-63	Effective Enough
64-78	Effective
79-100	Very Effective

Data Source : Processed by Researcher

3. RESULT AND DISCUSSION

Based on the results of questionnaires answered by respondents, it is known that STKIP Weetabula students are familiars with smartphones. They have been using smartphones as a tool of communication since 2013. The benefits obtained when using smartphones are to facilitate communication between students and lecturers, to give them access to get materials and other information quickly, to increase their knowledge, and as an online learning media. The most frequently used application in smartphone are facebook, Whatsapp, e-mail, messenger and Instagram. While the application mostly used in learning are whatsapp, e-mail, messenger, google classroom and zoom. The data about effectiveness of using smartphone as the media of learning will be described as follows.

3.1. Program Success

Measurement of program success is measured by several indicators which are the ease of usage, the speed of information and the benefits.

3.1.1. Ease of usage

The ease of usage of smartphone can be determined through the time span while it is used. Some respondents have started using smartphones since 2013. Details about smartphone usage data by STKIP Weetabula students can be seen on figure 1.

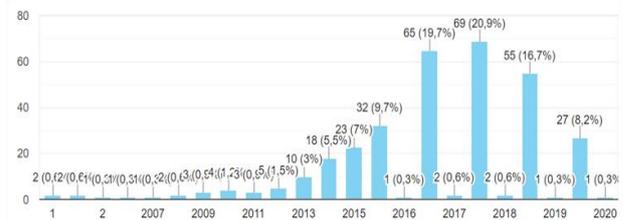


Figure 1 Smartphone Usage Data by STKIP Weetabula Students

Based on diagram above, it is known that from 2013 until 2019, there are 305 out of 330 respondents that have used smartphones. This data shows that from the aspect of ease, the use of smartphones as a learning medium for STKIP Weetabula students is categorized very effective with score 92. Students can operate and use the smartphone. Respondents are also familiar with applications found on smartphones that can be used as learning media such as Whatsapp, email and messenger.

3.1.2. Information Speed

The speed of information in this study is related to speed of communicating with lecturers and fellow students, the speed of knowing materials information and assignments from lecturers and the speed of sending assignments and the results of exams or quizzes from lecturers. Based on the respondents' answers, it is known that the effectiveness of using smartphones as learning media in terms of the speed of information obtained score 91.6 and is considered very effective.

3.1.3. Benefits

This aspect is related to the benefits of smartphones as learning media such as communication tools and discussions with fellow students and lecturers, students use smartphone to get assignments, materials, send assignments and evaluation results to lecturers. Besides, the use of smartphones as a learning media makes students become more familiar with technology, especially in the communication process and the speed of information. The benefits aspect obtained score 88.6 and is considered very effective

Overall, the components of program success with the aspect of ease of usage, speed of information and benefits obtained mean score 90.1 which belongs to very effective category.

3.2. Target Success

The success of the target to in this study related to the successful use of smartphone learning media in an effort to anticipate and minimize the spread of Covid-19 in the Weetabula STKIP campus. The use of smartphones as learning media is one solution after the blended learning policy implemented by STKIP Weetabula as an alternative to learning during the Covid-19 pandemic. Blended learning is a combination of face-to-face meetings and online learning. Online learning has flexibility in its implementation and is able to encourage independent learning and motivation to be more active in learning. Some of the indicators measured on the component of target success are face to face intensity on campus, and the emergence of a new cluster of the spread of the Covid-19 virus on campus. Based on the results of the questionnaire, it is known that the use of smartphones as learning media is very effective in minimizing the spread of the Covid-19 virus in the campus environment with an acquisition score 86.6.

3.3. Satisfaction of the Program

The level of satisfaction with the program in this study refers to students' satisfaction in using smartphones as learning media during the Covid-19 pandemic situation. This satisfaction is measured by using several indicators such as satisfaction is measured by using several indicators such as satisfaction with the implementation of lecturers, satisfaction with the communication process, satisfaction with the clarity of information, satisfaction with the speed of receiving information and satisfaction with the interaction between lecturers and students. Based on the results of student response, data on the effectiveness of learning using smartphone media on the satisfaction aspect of the program obtained score 81.8 and is considered very effective.

3.4. Achievements of Overall Goals

The achievement of overall goals is intended to measure the overall level of effectiveness starting from the success of the program, the success of the target and satisfaction with the program. The overall goal achievement component obtained a mean score of 86.2 and it belongs to effective category.

A summary of the results of measuring the level of effectiveness of using smartphones as a learning medium for STKIP Weetabula students can be seen in the Table 2.

Table 2. The Recapitulation of Research Result

Effectiveness Measurement	Score	Category
Program Success	90,1	Very Effective
Target Success	86,6	Very Effective
Program Satisfaction	81,8	Very Effective
The Achievement of Overall goals	86,2	Very Effective
Average	86,1	Very Effective

Based on Table 2, it can be perceived and concluded that the use of smartphones as a learning media is very effective for the students of STKIP Weetabula during the covid-19 pandemic with an average acquisition score 86.1. The level of effectiveness belongs to very effective category makes smartphones as a learning medium that can minimize the spread of the covid-19 virus in the STKIP Weetabula environment. The limited face-to-face learning pattern as well as online learning that is applied at the Weetabula STKIP campus (blended learning) is very effective in preventing the emergence of new cluster of the spread of the corona virus on campus. This happens because of the health protocol implemented on campus which must be obeyed by all academicians carrying out activities on campus. Besides online learning that is implemented encourages the emergence of social distancing behavior and minimize the appearance of students crowds which is considered can reduce the potential to the spread of covid-19 in the campus environment.

The level of effectiveness of using smartphone media as a learning medium which belongs to very effective category is coming with several challenges and obstacles experienced by students. There are three things that becomes obstacles and also big challenges for students in learning during this pandemic which can be seen as follows.

1. The amount of internet for mobile phone costs that must be bought regularly to access lecturer materials and do assignments. This complaint was conveyed because most students are coming from underprivileged families. They had difficulty in accessing lecture materials and assignments because of this. Students also ask for compensations from the

campus such as a reduction in tuition fees and also providing free internet access on campus.

2. Lack of signal in remote areas. Most of the students who study at STKIP Weetabula come from remote areas where the internet network is not really good. This obstacle eventually required students to look for places which provided good internet access.
3. Some areas where students live do not electricity yet. Therefore, they experience difficulties studying course materials and doing assignments in the evening.

Besides providing the students with input regarding the obstacles and challenges that they experiences, students also give appreciation for the implementation of blended learning at the STKIP Weetabula STKIP campus. This system is considered very good to anticipate the spread of the covid-19 virus in the campus environment. Another good impact felt by students is that they are increasingly proficient in utilizing features on smartphones. Moreover, they are also increasingly independent on terms of studying and doing assignments. This must be appreciated because in learning in normal times, some students admit that not all the students do the assignments given. Other students are only passive but still registered as group members. In learning during this pandemic, students become more active and independent.

4. CONCLUSION

Based on the results of research and discussion, it can be concluded that the use of smartphone as communication technology is considered very effective as a learning media in the situation the covid-19 pandemic therefore the score gained is 81.6. This is integrated in the four components of effective category. The component of program success with the aspects of ease of usage, speed of information and benefits obtained a mean score 90.1 and it belongs to very effective category. The target success component obtained score 86.6 and d it belongs to very effective category. The program satisfaction component has score 81.8 and the overall foal achievement component has score 86.2.

The future research can Exploring about input and output level, and also about educators' opinion on the use of smartphones for learning and teaching.

REFERENCES

- [1] M. Pal, G. Berhanu, C. Desalegn, & V. Kandi, "Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2): An Update," *Cureus*, vol. 12, no. 3, pp. 7423, 2020. Available: <https://doi.org/10.7759/cureus.7423>
- [2] M. Cascella, M. Rajnik, A. Cuomo, et al., *Features, Evaluation and Treatment Coronavirus*

- (*COVID-19*) [Updated 2020 Jul 4]. StatPearls Publishing; 2020. [Online]. Available: <https://www.ncbi.nlm.nih.gov/books/NBK554776/>
- [3] R. D. M. Kumala, "Legal Analysis of Government Policy on Large Scale Social Restrictions in Handling Covid-19," *The Indonesian Journal of International Clinical Legal Education*, vol. 2, no. 2, pp. 181-200, 2020. Available: <https://doi.org/10.15294/ijicle.v2i2.38326>
- [4] R. Aminnejad & R. Alikhani, "Physical distancing or social distancing: that is the question. Canadian journal of anaesthesia = Journal canadien d'anesthésie," *Advance online publication*, 2020. Available: <https://doi.org/10.1007/s12630-020-01697-2>
- [5] Presiden Republik Indonesia. *Peraturan Pemerintah Nomor 21 Tahun 2020 tentang Pembatasan Sosial Berskala Besar Dalam Rangka Percepatan Penanganan Coronavirus Disease 2019/COVID-19*. 2019(022868), 8, 2020.
- [6] Kemendikbud, *Surat Edaran Nomor 4 Tahun 2020 Tentang Pelaksanaan Kebijakan Pendidikan dalam Masa Darurat Penyebaran Corona Virus Disease (Covid-19)*. Jakarta: Kemendikbud, 2020.
- [7] Kemendikbud, *Surat Edaran Nomor 15 Tahun 2020 Tentang Pedoman Penyelenggaraan Belajar dari Rumah dalam Masa Darurat Penyebaran Covid-19*. Jakarta: Kemendikbud, 2020.
- [8] Tim Penyusun, *Buku Pedoman Pelaksanaan Blended Learning Selama Pandemi Covid-19*. Tambolaka: STKIP Weetabula Press, 2020.
- [9] KBBI, *Kamus Besar Bahasa Indonesia (KBBI)*, 2016. [Online] Available: <http://kbbi.web.id/pusat> Accessed 30 Juli 2020.
- [10] A. Echeverría, M. Nussbaum, J. F. Calderón, C. Bravo, C. Infante, and A. Vásquez, "Face-to-face collaborative learning supported by mobile phones," *Interactive Learning Environments*, vol. 19, no. 4, pp. 351–363, 2011. Doi: 10.1080/10494820903232943.
- [11] T. D. Cochrane, "Beyond the Yellow Brick Road: mobile Web 2.0 informing a new institutional e-learning strategy," *ALT-J*, vol. 18, no. 3, pp. 221–231, 2010. Doi: 10.1080/09687769.2010.529110
- [12] J. P. Campbell, *Riset dalam Efektifitas Organisasi. Terjemahan Sahat Simamora*. Jakarta, 1989.
- [13] M. Erlangga Pal., G. Berhanu, C. Desalegn, & V. Kandi, "Severe Acute Respiratory Syndrome

Coronavirus-2 (SARS-CoV-2): An Update,”
Cureus, vol. 12, no. 3, pp. 7423, 2020. Available:
<https://doi.org/10.7759/cureus.7423>