The Effectiveness of Distance Learning Using Social Media during the Pandemic Period of COVID-19: A Case in *Universitas Kristen Indonesia*

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Abstract

Pandemic covid-19 has made the learning system on campus forced to change drastically from face-to-face meetings to distance learning online. Many campuses that do not yet have online learning infrastructure are forced to conduct online lectures amid the existing limitations. This study aims to analyze the effectiveness of distance learning using social media during the Covid-19 Pandemic. This study used a survey method using a questionnaire conducted online to 250 students who were then analyzed using the Multi-Attribute Utility Theory (MAUT). Indonesian Christian University supports the policy of learning from home by imposing online learning using social media such as Facebook, Instagram, and Youtube to provide lecture material and assignments to students. The results of testing the effectiveness of distance learning using social media concluded that distance learning using social media is only effective for theoretical and theoretical practical courses, whereas in practice courses and distance field courses using social media is felt to be less effective.

Keywords: Covid-19, Social Media, Distance Learning, Information Technology and Communication.

1. Introduction

The Covid-19 pandemic has made the learning system in Indonesia change dramatically from face-to-face learning to online learning at home. Since the emergence of positive Covid-19 patient cases in Indonesia, the Government through the Ministry of Education and Culture and the Ministry of Religion of the Republic of Indonesia, has implemented a policy of learning and working from home since mid-March 2020. In line with the development of information and communication technology (ICT), Covid-19 has forcing campuses to innovate and transform in learning, one of which is by using distance learning [1]. One alternative form of learning that can be implemented during the Covid-19 emergency is online learning [2]. Online learning is learning that uses internet networks with accessibility, connectivity, flexibility, and the ability to bring up various types of learning interactions [3]. The use of the internet and multimedia technology is able to overhaul the way of delivering knowledge and can be an alternative learning that is carried out in traditional classrooms [4].

Online learning in its implementation requires the support of mobile devices such as smartphones, tablets and laptops that can be used to access information anywhere and anytime [5]. The use of mobile technology has a major contribution in the world of education, including the achievement of distance learning goals [6]. Various media can also be used to support the implementation of online learning. For example virtual classes use Google Classroom, Edmodo, and Schoology services [7, 8, 9], and instant messaging applications such as WhatsApp [10]. Online learning can even be done through social media such as Facebook and Instagram [11].

Many campuses, including the *Universitas Kristen Indonesia* (UKI) which are not accustomed to conducting online lectures are forced to change the face-to-face system into online distance lectures due to the Covid-19 Pendemi which hit Indonesia amid the limited infrastructure. On the other hand, currently students spend a lot of time everyday with the internet [12]. They blog, download, and upload documents in the form of text, sound, images or movies, using Facebook, Instagram, YouTube, online games, and others. In other words, students live together with this technology [13]. At the same time, the practice of learning and learning in tertiary institutions has moved towards a student-centered and community-based learning model [14]. Therefore, now in the midst of the Covid-19 Pendemi many lecturers began to use digital technology especially social media in the learning process to improve the quality of learning and student satisfaction.

Social networking sites such as Facebook, Instagram and Youtube have been subject to much recent debate within the educational community. Whilst growing numbers of educators celebrate the potential of social networking to (re) engage learners with their studies, others fear that such applications compromise and disrupt young people's engagement with 'traditional' education provision [15, 16]. In accordance with the reference of higher education curriculum, courses consist of various types namely theoretical courses, practicum courses, theoretical and practical courses, as well as practical work subjects [17, 18]. In the context of learning activities need to be considered the effectiveness of learning means the extent to which learning objectives that have been set can be achieved as expected.

Effectiveness in general shows to what extent the achievement of learning objectives that have been determined [19, 20, 21]. The characteristics of the effectiveness of the learning program are successful in delivering students to achieve predetermined instructional goals, provide an attractive learning experience, actively involve students so as to support the achievement of instructional goals and have facilities that support the teaching and learning process [21]. Effectiveness can be measured by looking at students' interest in learning activities [22]. The effectiveness of learning methods is a measure related to the level of success of a learning process. The effectiveness of the learning program is not only in terms of the level of learning achievement, but must also be reviewed in terms of the processes and supporting facilities. The effectiveness of online learning is expected to be equivalent to learning through face-to-face delivery mode [23]. This article will analyze the effectiveness of distance learning using social media during Pandemic Covid-19 from the perspective of students using MAUT..

2. Method

This research is a quantitative descriptive study using survey methods [24, 25, 26, 27, 28, 29, 30, 31, 32]. Quantitative descriptive research aims to explain the characteristics involving samples and populations and is highly dependent on numerical data and statistical analysis [33]. The primary data collection in this study was carried out by distributing questionnaires online to 250 respondents, namely UKI students who carried out lectures on Theory, Practicum, Mixed Practicum Theory and Field Work Practices online through social media. In addition, secondary data collection is done through literature studies to find documents, books, journals, and others related to the effectiveness of learning using social media.

Data analysis in this study uses descriptive statistics which are then analyzed and interpreted using MAUT to determine the effectiveness of online learning based on predetermined criteria [34]. MAUT is a decision support system method that is used to change from several interests into numerical values on a scale of 0-1 with 0 representing

the worst choice and 1. The end result is a ranking order of alternative evaluations that illustrates the choices of decision makers.

Calculation with MAUT method, starting from determining alternatives and criteria: using the types of courses available in the curriculum, namely practicum courses, theoretical courses, courses that use a combination of theory and practicums and courses that are carried out in the field and also the criteria for online learning success, namely Achievement of Instructional Objectives , Attractive Learning Experience, Mastery Learning, Learning Outcomes, Interests and Motivation, facilities and resources, Determine the value of criteria weights on 4 scales namely Very Good, Good, Fairly Good and Not Good which are arranged starting from the number 0.25 to 0.90 until the calculation of normalization and ranking . From this, the decision support system using the MAUT method is precisely used to determine the effectiveness of distance learning using social media Facebook, Instagram, and Youtube.

3. Result and Discussion

Most universities in Indonesia have implemented distance classes or online classes, as an action on the spread of Covid-19. In addition to learning and teaching, a number of campuses in the country have adopted policies until the end of this even semester so that all lecture activities are carried out online, including midterm, midterm, practicum, and final assignment guidance, thesis, and dissertation. This decision was taken based on consideration of the current condition of the spread of Covid-19 at the national level. During online learning, students and lecturers are asked to conduct teaching and learning activities using online applications such as video conference applications, e-mail, and online social media. In an effort to prevent the spread of Covid-19, WHO recommends stopping activities that have the potential to cause mass crowds. For this reason, conventional learning that gathers many students in one room needs to be reviewed for implementation. Learning must be carried out with scenarios that are able to minimize physical contact between students and other students, or between students and lecturers. The use of digital technology allows students and lecturers to be in different places during the learning process [34].

Many universities readily respond to these instructions, one of them is the UKI which issues a circular about the vigilance and prevention of the spread of Covid-19 infections in the UKI environment. UKI which was founded in 1953 is the oldest Christian university in Indonesia and the third private university in Indonesia, after the Islamic University in Yogyakarta and the National University in Jakarta. UKI has currently established and implemented online distance learning to support government programs in dealing with the Covid-19 outbreak that has hit Indonesia since March 2020. The majority of lecturers choose social media such as Facebook, Instagram and Youtube as learning and assignment media. However, the use of these media needs to be adjusted to the needs of existing courses such as theoretical, practical, theoretical and practical courses as well as practical field work courses so that online distance learning activities can run effectively. To see the effectiveness of distance learning using social media, researchers conducted a survey of 250 UKI students and analyzed it using the MAUT method.

There are four alternative courses in online learning, as presented in table 1 below.

Table 1. List of Alternative Courses

No	Courses	Description
1	Theory and Practicum	A1
2	Internship	A2
3	Theory	A3
4	Practicum	A4

Determination of the level of importance of each criterion based on the weight value used to recommend the effectiveness of distance learning using social media Facebook, Instagram and Youtube is a case in table 2 below.

Table 2. Criteria and Range

No	Criteria	Range
1	Achievement of Instructional Objectives (C1)	0.25-0.90
2	Attractive Learning Experience (C2)	0.25-0.90
3	Mastery Learning (C3)	0.25-0.90
4	Learning Outcomes (C4)	0.25-0.90
5	Interest and Motivation (C5)	0.25-0.90
6	Facilities and Resources (C6)	0.25-0.90

Each perception of assessment is given an SB rating (Very Good) = 0.90, B (Good) = 0.75, C (Fair) = 0.50, TB (Not Good) = 0.25. The following are the respondents' assessment data on alternatives available using a questionnaire for 4 subject categories. The questionnaire for each course consisted of 3 questions for each criterion. The questionnaire results obtained from 100 people were classified based on the type of course (Theory, Practicum, Practical Theory, Field) by calculating the average value for each course as presented in Table 3 below.

Table 3. Average Evaluation of Respondents on Alternative Courses

No	Course	Mean					
		C1	C2	C3	C4	C5	C6
1	Theory and Practicum (A1)	0.78	0.76	0.75	0.78	0.75	0.79
2	Internship (A2)	0.60	0.60	0.54	0.58	0.59	0.85
3	Theory (A3)	0.79	0.81	0.79	0.94	0.80	0.79
4	Practicum (A4)	0.79	0.66	0.72	0.62	0.68	0.75

Furthermore, giving preference weight of each criterion for each alternative course type. The preference weights for each criterion for the effectiveness of the courses are as follows:

Achievement of Instructional Objectives	= 0.10
Learning Outcomes	= 0.20
Mastery Learning	= 0.30
Attractive Learning Experience	= 0.10
Interest and Motivation	= 0.10
Facilities and Resources	= 0.20

Then the normalization calculation is performed using the MAUT method as in table 4 below:

Table 4. Normalization Matrix and Preference Range

No	Course	C1	C2	C3	C4	C5	C6
1	Theory and Practicum (A1)	0.78	0.76	0.75	0.78	0.75	0.79

2	Internship (A2)	0.60	0.60	0.54	0.58	0.59	0.85
3	Theory (A3)	0.79	0.81	0.79	0.94	0.80	0.79
4	Practicum (A4)	0.79	0.66	0.72	0.62	0.68	0.75
	Preferance Range	0.10	0.20	0.30	0.10	0.10	0.20

Furthermore, normalization of an effective recommendation matrix for distance learning using social media Facebook, Instagram and Youtube is obtained using the equation formula (2). Then the results obtained as in the table in the following 5:

Table 5. Matrix Normalization Results

No	Course	C1	C2	C3	C4	C5	C6
1	Theory and Practicum (A1)	0.91	0.78	0.82	0.56	0.73	0.40
2	Internship (A2)	0.00	0.00	0.00	0.00	0.00	1.00
3	Theory (A3)	1.00	1.00	1.00	1.00	1.00	0.42
4	Practicum (A4)	0.98	0.29	0.72	0.10	0.41	0.00

After the matrix normalization results are obtained, the next step to do the matrix normalization results is by weighting the preferences by using the equation formula (1).

$$A1 = (0.10 \times 0.91) + (0.20 \times 0.78) + (0.30 \times 0.82) + (0.10 \times 0.56) + (0.10 \times 0.73) + (0.20 \times 0.4) = 0.70$$

$$A2 = (0.10 \times 0.00) + (0.20 \times 0.00) + (0.30 \times 0.00) + (0.10 \times 0.00) + (0.10 \times 0.00) + (0.20 \times 1.00) = 0.20$$

$$A3 = (0.10 \times 1.00) + (0.20 \times 1.00) + (0.30 \times 1.00) + (0.10 \times 1.00) + (0.10 \times 1.00) + (0.20 \times 0.42) = 0.88$$

$$A4 = (0.10 \times 0.98) + (0.20 \times 0.29) + (0.30 \times 0.72) + (0.10 \times 0.10) + (0.10 \times 0.41) + (0.20 \times 0.00) = 0.42$$

Calculation results based on the Equation formula (1) are displayed in a matrix form, as in table 6 below.

Table 6. Normalized Matrix Multiplication Results with Preference Range

No	Course	Result	Rank
1	Theory and Practicum (A1)	0.70	2
2	Internship (A2)	0.20	4
3	Theory (A3)	0.88	1
4	Practicum (A4)	0.42	3

The results of calculations using the MAUT method for the case study of the effectiveness of distance learning using social media in the UKI produce more objective choices with the theoretical course assessment (0.88) as the highest assessment, followed by the Theory and Practicum courses (0.70) , Practicum courses (0.42) and Field courses (0.20). This means that online learning is only effective for theoretical and theoretical practical courses, while for practical courses and field courses are not effective online and are more effective using conventional face-to-face lectures [35].

Online learning implemented at UKI is in order to suppress the spread of Covid-19 implemented using learning applications and virtual class services that can be accessed through social media using the internet network. In general, students feel satisfied about the flexibility of conducting lectures. Students are not pressed by time because they can set their own schedule and place where they want to attend lectures. Through online learning, lecturers give lectures through virtual classes that can be accessed anywhere and anytime. This allows students to freely choose which

subjects to attend and assignments that must be done first. The flexibility of time, location, and online learning methods affect student satisfaction with learning [36].

There is one interesting finding in this study, where students feel more comfortable to ask questions and express opinions in a lecture forum that is held online through social media [37; 38]. Learning from home makes them not feel the pressure from friends they usually feel when studying in lectures face to face. The physical absence of lecturers also makes them not feel awkward in expressing their opinions. The absence of physical barriers and the limitations of space and time make it easier for students to communicate. In addition, online learning eliminates awkward feelings so students can express their thoughts and ask questions freely [39].

Online distance learning using social media is also able to foster student learning independence. Learning without direct guidance from lecturers makes students independently look for information about course material and assignments given to them. Some of the activities carried out are reading reference books, online articles, scientific journals, or discussing with peers through instant messaging applications. Online learning is more students centered so that it can bring up the responsibility and autonomy of students in learning [40]. Online learning requires students to prepare their own learning, organize and evaluate and simultaneously maintain motivation to learn [41].

Learning conducted online also has its own challenges. Separate lecturer and student locations when carrying out learning make lecturers unable to directly monitor student activities during the lecture process. There is no guarantee that students really pay attention to the explanation given by the lecturer. Students fantasize more frequently in online lectures compared to face-to-face lectures [42]. For this reason online lectures must be held in a short time because students have difficulty maintaining concentration if online lectures are held for more than an hour [43]. The survey results also showed that many students had difficulty in understanding course material provided online. The lecture material which is mostly in the form of reading material cannot be understood thoroughly by students. Students assume that reading the material and doing the assignments is not enough, they need verbal explanation directly from the lecturer about some material that is complex. Communication with lecturers through the application of instant messages or in the discussion column provided by the application of virtual classes is not able to provide a thorough explanation of the material being discussed. In the class where the involvement of lecturers is very small, it does not show the existence of deep and meaningful learning [44]. Interaction with lecturers becomes very important in online learning because it can reduce psychological distance which in turn will lead to better learning [45].

4. Conclusion

Based on the results of testing with the MAUT method of the effectiveness of distance learning using social media (Facebook, Instagram, and Youtube) in theory courses ranked first at a value of 0.88, followed by theory and practicum courses at the second position with scores 0.70, practicum subjects are in the third sequence with a value of 0.42 and courses in the fourth field are worth 0.20. This means that distance learning using social media is only effective for theoretical and theoretical and practical courses, while for practical courses and field courses are not effectively done remotely using social media such as Facebook, Instagram and Youtube.

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