

Effect Digital Learning on Student Motivation during Covid-19

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Abstract—This study aims to measure the level of student motivation in using digital learning during Covid-19. In conducting this research, the structural equation modeling method is used by using the Partial Least Square (PLS) theory, the software used is SmartPLS 2.0. with the number of responding 190 students. From the proposed hypothesis, there is a significant value, namely digital learning has a positive impact on student learning motivation. The novelty of this study explores the impact of digital learning on student learning motivation during the Covid-19 pandemic, in which few researchers conducted this research.

Keywords—Digital learning, Learning Motivation, Covid-19

I. INTRODUCTION

Currently, the world is being attacked by a disease outbreak caused by the coronavirus or what is often referred to as Covid-19 (Corona Virus Diseases 19) [1]. This virus spread rapidly throughout various countries, including Indonesia. To deal with the virus, the Indonesian government has taken several policies, including limiting social interactions [2]. The policy of limiting social interactions has had a significant impact on various fields of life, especially in the field of education. The online learning system (in a network) is a learning system without face-to-face learning between teachers and students but is done online using the internet network. Teachers must ensure teaching and learning activities continue, even though students are at home. The solution, teachers are required to be able to design learning media as an innovation by utilizing online media (online). All universities change learning from campus to home. Of course, this has a big effect on the learning and teaching process [3]. In the education sector, by optimizing learning, having a role in the concept of understanding, and helping students to be more active in using a structured learning style, functionally optimizing the quality of the origin of the material pedagogy is carried out using mobilizing and utilizing existing resources [4]. Many students find it difficult to learn changes like this. The transition of the learning period which was originally on campus, forced various parties to follow the path that could be taken to optimize the teaching and learning process. In this difficult time, the use of information technology is the right solution to optimize distance learning [5]. The incorporation of technology in the classroom is a process that involves changes in the education system and occurs over a period of time. Technology provides new characteristics that can be applied by a teacher to make it more attractive to students [6]. One of them is by using digital learning. Digital learning is a

learning technology; students learn digitally both online and offline, anytime and anywhere. Digital learning can include theory eBooks, videos, online assessments, online simulations, certificates, and others [7].

Under a climate of changing modes of learning, governments and businesses have had a large share of the influence invested in research and development of digital teaching platforms during the Covid-19 era. Software and hardware deployed for many digital teaching platforms have been developed, a wide variety of digital teaching materials have been produced, and colleges have been actively introducing different digital teaching platforms for instruction in hopes of improving student learning outcomes. Leveraging shared educational resources on computer networks to shorten the urban-rural education gap has become a common trend globally [8]. It is inevitable that teachers integrate information technology into subjects to help student learning with teaching materials, teaching methods, and various teaching media. It is a shared responsibility for teaching educators to become more efficient, allowing students to enjoy learning, and developing new generations with creative and rational communication and critical thinking with technology and network information in the new era without having to meet face to face [9].

Digital Learning has become an important component in teaching during the Covid-19 pandemic. Every university has implemented online learning methods. It is important to study student motivation in carrying out the learning process using digital learning concepts during the Covid-19 period. Theory of Reasoned Action (TRA) is one of the bases that can be used as a reference in measuring student motivation [10]. Previously, digital learning has been widely used in the learning process in higher education in every part of the world. However, changes are very fast due to Covid-19 resulting in faster transformation. Students, lecturers, and universities are required to adapt quickly [11]. Therefore this study aims to measure the level of student motivation in using digital learning during Covid-19.

II. LITERATURE REVIEW AND HYPOTHESIS

A. Digital Learning

Digital learning is part of the e-learning concept by definition. It can be concluded that a collection of learning materials has been transformed into digital assets, which can be distributed through online media. Digital Learning is a new breakthrough in learning technology that is applied to students to learn digitally through the use of technology, both software,

and hardware, which are packaged in an attractive and interactive manner [12]. All subject matter that is created and distributed digitally and online can be integrated into the software, whether in the form of text, images, or animation, or video. And this material is not just a collection of information stored on a computer in a systematic manner.



Fig. 1. An environment for the development of digital learning

The application of digital learning makes students more independent in learning and deepening teaching materials because students can study anytime and anywhere, both online and offline. And learning evaluation is carried out by means of a digital process, so there is no need for manual corrections [13]. The evaluation results obtained will be faster, more accurate, and objective. Digital learning can also unify all conventional teaching and learning activities into digital form. In digital learning, you can include some teaching materials as references that can make it easier for students to understand lessons such as theory e-books, video tutorials, practice questions, experimental simulations, consultations, even enlightenment or motivation features for students [14].

According to (Sokolová 2011), things that must be considered before using digital learning in teaching are content, facilities, and economic aspects [15].

B. Students Learning Motivation

This theory has a foundation against a belief perspective that is able to influence a person to carry out specific behavior. The belief perspective is implemented by combining various characteristics, qualities, and attributes of certain information, which then forms the will to behave. Intention (intention) is a decision to behave in the desired way or a stimulus to carry out an action, whether consciously or not. This intention is the initial formation of a person's behavior. Planned behavior theory is suitable for describing any behavior that requires planning [16].

Theory Planned Behavior is an enhancement of Theory Reasoned Action. Theory Reasoned Action has scientific evidence that the intention to carry out certain actions is caused by two reasons, namely subjective norms and attitudes towards behavior [17] by adding one factor, namely perceived

behavioral control. The existence of these factors has changed the Reasoned Theory Action into Theory Planned Behavior.

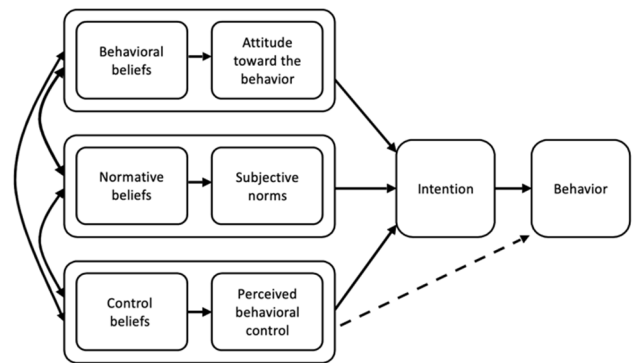


Fig. 2. Beliefs as a source of information on intentions and behavior
 Source: Neila Ramdhani [18]

Theory Planned Behavior explains that attitude towards behavior is an important subject that is able to predict an action, although it is necessary to consider a person's attitude in testing subjective norms and measuring the person's perceived behavior control. Subjective norms are individual perceptions of the expectations of those who are influential in their lives (significant others) regarding whether certain behaviors are carried out or not. This perception is subjective, so this dimension is called a subjective norm. Like attitudes towards behavior, subjective norms are also influenced by beliefs.

If there is a positive attitude, support from people around, and the perception of ease because there are no obstacles to behavior, then the person's intention to behave will be higher [19]. Someone who has a positive attitude towards the digital learning process gets support from people around him and the perception of ease because there are no obstacles in using digital learning, the student's motivation will be even higher. Learning motivation in the context of Theory Planned Behavior (TPB) is a variable of student attitudes. Student motivation is often divided into two types, namely intrinsic motivation and extrinsic motivation.

Three factors of Theory Planned Behavior (TPB):

1) *Attitude toward behavior*: Attitude is not behavior, but attitude presents a preparedness for action that leads to behavior. Individuals will do something according to the attitude they have towards a behavior. Attitudes towards behavior that he considers positive will later be chosen by individuals to behave in their lives. Therefore attitude is a vehicle in guiding an individual to behave.

2) *Perceived behavioral control*: In behaving, an individual cannot fully control his behavior under the control of the individual or in a condition it can be the other way around where an individual can control his behavior under the control of the individual. An individual's control over his behavior is caused by several factors, namely internal factors and external factors. Internal factors come from within the individual such as skills, willingness, information, and others. Meanwhile, external factors come from the environment around the individual. Perception of behavior control is how

a person understands that the behavior he shows is the result of control exercised by him.

3) *Subjective Norms*: An individual will do a certain behavior if his behavior can be accepted by people who are considered important in his life can accept what he will do. Thus, normative beliefs produce awareness of the pressure from the social environment or subjective norms.

Intrinsic motivation, a student is motivated intrinsically when he is motivated from within. Intrinsically motivated students are deeply involved in learning from a unique interest or satisfaction to achieve their own academic and personal goals. Students who are intrinsically motivated like to use strategy and tend to try harder [20]. Highly motivated students tend to try harder in the learning process to achieve what they want to get [21]. A great learning framework will create great quality instruction. At that point, a great appraisal framework will empower instructors to decide great instructing techniques and propel understudies to memorize superior [22].

Online learning has several positive impacts on students because students can study anywhere and anytime. However, there are problems that can interfere with the online learning process, namely students have high learning motivation less when carrying out online learning, even though the motivation to learn is a thing important in the learning process. Motivation in learning has a role to play foster a sense of pleasure, passion, and enthusiasm for learning.

Lack of motivation to learn in online learning is due to the process of online learning. Students can become less active in expressing opinions and thoughts, thus causing a tedious learning process. If students experience boredom in learning, they will get progress in learning outcomes. Therefore, a driver is needed to move students so that the enthusiasm for learning so that they can have learning achievement.

C. Hypothesis

From the study above, the conclusion is drawn as a hypothesis that we propose that the learning process using digital learning will positively and significantly impact student motivation in learning, especially during the Covid-19 period.

III. STUDY APPROACH

There are two phases in the study. First, where the questionnaire phase to describe related to the perceptions of teachers and students about the use of online learning media amid the Covid-19 Pandemic. Second, phase the test which will test the effectiveness of an online learning media reviewed from the aspect of student motivation

A. The Objective of The Research

The main point of this research is to determine whether the use of digital learning during the Covid-19 period will affect student motivation in learning so that the purpose of this study is to describe the results of student motivation in using digital learning.

B. Population Statistics and Sampling

The population of statistics in this study includes students from various departments and levels of education in Indonesia who are still active in learning. Respondents were taken

randomly. The data collection method used a questionnaire via Google form, which was distributed in July 2020. This sampling was taken during the Covid-19 period, with 190 students responding.

IV. ANALYSIS AND RESULTS

In conducting this research, the structural equation modeling method is used by using the Partial Least Square (PLS) theory, the software used is SmartPLS 2.0. The following are the demographics of the respondents shown in table 1.

TABLE I. DEMOGRAPHICS OF RESPONDENTS

Department	Faculty of Computer	50,5%
	Non-Computer Faculty	49,5%
Semester	Semester 1-4	42,2%
	Semester > 4	57,8%
Gender	Boys	38,5%
	Girls	61,5%

This study is to test the hypothesis, a questionnaire designed to be used for digital learning and student motivation which includes nine questions, with 5 points on the Likert scale (from 1 = strongly disagree, 2 = disagree, 3 = doubt, 4 = agree, 5 = totally agree). In this study, the reliability of the questionnaire was checked through Cronbach alpha (digital learning questionnaire 0.8579 and student motivation 0.8261), which are presented in Table 2. To test the convergent validity, the parameters used were loading factor, average variance extracted (AVE), and Communality. The loading factor parameter has a rule of thumb value greater than 0.70 for the confirmatory research model and greater than 0.60 for exploratory research. The AVE and communality values must also be more than 0.50 for confirmatory research or exploratory research. In table 2, these values are in accordance with the predetermined rule of thumb. CR = Composite Reliability.

TABLE II. VALUE OF CONVERGENT VALIDITY

	Items Variable	Cross Loading	AVE	CR	Cronbach's Alpha	Communality	R-Square
Digital Learning	DL1	0.8566	0.7005	0.9030	0.8579	0.7005	
	DL2	0.7357					
	DL3	0.8966					
	DL4	0.8503					
Motivasi Mahasiswa	MS1	0.7936	0.5885	0.8765	0.8261	0.5885	0.5097
	MS2	0.8045					
	MS3	0.6485					
	MS4	0.8373					
	MS5	0.7376					

This study uses the bootstrapping method to obtain the significance value of the hypothesis. The value used as an indicator is T-Statistics, with a value greater than 1.96. From the analysis, it was found that the T-Statistics value = 11,794, which means that the T-Statistics value has met the requirements significantly. Figure 1 explains the loading factor value and the path coefficient value.

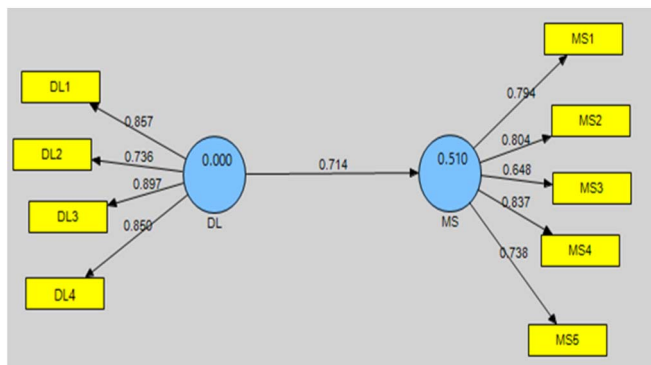


Fig. 3. Loading factor and path coefficient value

To test the validity of Discriminant using the cross-loading parameters and the square root AVE and correlation between latent constructs that have values greater than 0.70 for each variable. Digital learning latent variables have four indicator variables, namely DL1, DL2, DL3, and DL4. The cross-loading value of DL1 is 0.867, DL 2 is 0.736, DL3 is 0.897, and DL4 is 0.850. The loading value states the correlation between the variable and the indicator. The higher the loading value, the closer the correlation is between the latent variable and the indicator.

V. CONCLUSION

Testing the results of the hypothesis that has been done above can be concluded that digital learning has a significant effect on student motivation in the Covid-19 pandemic. Students tend to be more motivated in learning by applying digital learning. If students are motivated in learning, then they are more likely to be involved with digital learning, so they are more likely to achieve learning goals.

Therefore it is known that utilizing digital learning as a standard tool in student instruction, on the other hand from the data obtained by students argues that by using digital learning

they must incur more expensive costs, so for campus organizers, a better mechanism must be prepared so that digital learning is felt cheaper in cost.

And further research is expected to find out in more detail about digital learning on student's motivation in the field of education by using various questionnaires that have been adapted to the times, as well as examples of other variables that may be more influential than digital learning.

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