

The Influence of the Use of Communication Technology in Long Distance Learning on Student Achievement Motivation in a Pandemic Period

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Abstract

The COVID-19 pandemic has hit the whole world, including Indonesia. This has been going on for more than a year. The COVID-19 pandemic has forced all activities in the community to be carried out not face to face or online. This also applies to the world of education. During this time, all teaching and learning processes were carried out remotely. In carrying out this distance learning process, the University of Indonesia uses internet-based communication technology facilities. The purpose of the study is to find out the influence of communication technology in instruction on the motivation of students' achievements during pandemics. In developing the learning system, Universitas Indonesia uses the E-learning Management System (EMAS) in addition to many lecturers who use the Zoom, Google Meet, and Google Classroom applications. The use of the "Distance Learning" system will certainly affect student learning patterns, especially their achievement motivation. The theoretical framework in this study uses the Uses and Gratification theory the achievement motivation theory and the concept of distance learning. This study uses a quantitative approach, while the type of research is explanatory with a survey method. The results of this study indicate that there is an influence on several dimensions of achievement motivation, including (1) seriousness in learning; (2) the challenge to complete the task; and (3) the target to complete the study period. The conclusion of this study is that the use of communication technology is an important factor in student achievement motivation. While the suggestion is that because in the future the "Distance Learning" system will end, it is necessary to pay attention to improvements in supporting facilities and teaching systems.

Keywords: Communication Technology, Achievement Motivation, Long Distance Learning and Applications

Introduction

The world, including Indonesia, is currently being hit by the COVID-19 pandemic, which has changed the behavior and daily habits of human life (Dunton et al., 2020; Sfyri et al., 2021; Tulchin-Francis et al., 2021). This COVID-19 pandemic has lasted for more than a year since the official announcement from the Government regarding the corona virus outbreak in

Indonesia on March 2, 2020. This COVID-19 pandemic has forced almost all activities in the community to be carried out non-face to face or face-to-face by online (Aldon et al., 2021; Churiyah et al., 2020; Stockwell et al., 2021; Sun & Zhai, 2020). Government and private offices are required to carry out some of their activities from home or "Work from Home" (WFH) and the number of employees who enter the office is limited, not more than 50% of the total number of

employees (Craig & Churchill, 2020; Li et al., 2021; Putri et al., 2020). In addition, all activities must also implement health protocols which include wearing masks, maintaining distance, and diligently washing hands, avoiding crowds, and reducing mobility or reducing travel activities. This provision also applies to the world of education in carrying out its teaching and learning process. In this period until now all teaching and learning processes are carried out remotely or online using communication technology (Bradley et al., 2020; Essa et al., 2020; Mcroy et al., 2020; Smith et al., 2020; Veraksa et al., 2021).

Communication technology means hardware equipment, organizational structures, and social values in which individuals collect, process, and exchange information with other individuals (Brusesels, 2018; Dousay, 2015; Oluoch, 2016; Palagolla & Wickramarachchi, 2019). The development of communication technology is growing with the internet. The internet has become important is that this is inseparable from the characteristics itself that are different from traditional communication media such as correspondence, newspapers, radio, and television (Fansury et al., 2020; Pontones-Rosa et al., 2021; Sugumar, 2020; Tulloh et al., 2017). One of these characteristics is the nature of the network.

During the COVID-19 pandemic, which has lasted more than a year and a half, all teaching and learning processes are carried out online or through the "Distance Learning" process (Aldon et al., 2021; Churiyah et al., 2020; Rohman et al., 2020; Zheng et al., 2021). Instructional during the pandemic prioritizes independence orientation rather than guided learning (Cook & Artino, 2016; Fisher et al., 2021; Mamun et al., 2020). So far, students have interpreted learning as pursuing something under the tutelage of a coach, instructor, or coach. Such learning needs must be corrected. Although not completely corrected, the pandemic period has begun to realize that self-directed learning is an

important and main thing today (Yamagata-Lynch et al., 2015).

Change the orientation of the study place, from monospace to multispace and even anywhere. Admit it or not, we have always interpreted school as the only place to learn. The experience of the pandemic teaches us to change this awareness into a new form of awareness related to the flexibility of the place to learn. Anywhere and anytime, you can learn optimally. The expansion of the function of the house. The house is not just a place of rest or a social location to chat but has a wider function (Wakkee et al., 2019). The experience of the pandemic, the house plays an important role both as a place of worship, a place to work, and a place to study. This is where, we see and feel, there is a social revolution that forces us to change our perception and understanding of the function and role of the house in the real life of our society today and in the future (Boyer et al., 2014).

Motivation as a set of processes that generate, direct, and maintain human behavior towards achieving goals (Berger-Estilita & Greif, 2020; Ivanova et al., 2020). Theory of motivation related to the concept of learning, which consists of three types of needs, namely the need for achievement, the need for affiliation and the need for power (Bores-García et al., 2020). (M. M. McClelland et al., 2013) said that when a person has a strong need, it will have an impact on his motivation to use behaviors that lead to satisfaction. Having a high need for achievement encourages a person to set challenging goals, work hard to achieve these goals and use the skills and abilities needed to achieve these goals. Based on the results of his research, McClelland developed a descriptive set of factors that reflect a high need for achievement, namely that a person likes to accept responsibility for solving problems, tends to set moderate goals and tends to take risks into account and wants input on his performance (D. C. McClelland, 2005).

University of Indonesia as one of the universities in Indonesia must also carry

out its lecture activities remotely. The University of Indonesia, whose campuses are spread across the cities of Depok and Salemba, has 15 faculties, two Postgraduate Studies and Vocational Programs with approximately 55,000 (fifty-five thousand) students ranging from vocational, undergraduate, specialist, master, and doctoral programs. To carry out this distance learning process, the University of Indonesia uses internet-based communication technology facilities. One of the systems developed at the University of Indonesia is the E-learning Management System (EMAS). In addition to the GOLD application, there are also many lecturers who in giving their lectures use the Zoom application, Google Meet, Google Classroom. To provide services to students, Universitas Indonesia also provides scholarships to its students. Many types of scholarships are available at the University of Indonesia, and one of these types of scholarships is the Bidikmisi scholarship awarded by the Ministry of Education and Culture of the Republic of Indonesia.

The Bidikmisi scholarship program is tuition assistance for students who are poor and have good academic potential to study in higher education in superior study programs until they graduate on time. The students who receive the Bidikmisi scholarship are expected to be able to complete their studies on time, which means that they are given a certain target time to complete their studies. This study took samples of students who received the Bidikmisi scholarship because they were given a certain time target to complete their studies on time. The students receiving the Bidikmisi scholarship who usually live in dormitories or boarding houses around the campus are currently returning to their respective areas. They must face many technical obstacles, for example signal interference or the need for technological tools that must be used such as the need for laptops, cellphones, and of course the need for large amounts of credit to attend lectures remotely.

By looking at the problems above, this study seeks to see how the process of implementing the use of communication technology in distance learning is. In addition, this study will also see how the achievement motivation of students receiving the Bidikmisi scholarship is because they must take part in the distance learning process. Then, this study will also see whether there is an effect of the use of technology used in distance learning on achievement motivation, especially for students receiving Bidikmisi at the University of Indonesia.

Methodology

This study uses a quantitative approach, where the analysis process uses statistical calculations. This type of research is explanatory, where it will be tested how the influence of variable X on variable Y which in this case affects the use of communication technology on achievement motivation, while the research method is a survey where data is obtained from respondents by distributing research instruments. Because it is still in the Covid-19 pandemic, the research instrument uses a Google Form which is sent to the respondent's cell phone number.

The population in this study were regular undergraduate students who received the Bidikmisi scholarship at the University of Indonesia. Overall, there are approximately 1500 active Bidikmisi scholarship recipients. Meanwhile, the number of samples is 136 respondents, and the sampling is done by simple random. The research period was held from August to October 2021. Respondents were spread across 14 faculties at the University of Indonesia. Respondents are active students spread from Class 2017 to 2020 who experience distance learning methods. The distribution of questionnaires is carried out by considering the proportion of years of lectures and scholarship recipients for each faculty.

Statistical analysis using SPSS 23 with linear regression test to determine the effect of the independent variable on the

dependent variable. The instrument validity test shows that all indicators in the study are valid, while the instrument reliability test is reliable, meaning that there is consistency from one question to another. Test the validity and reliability using 30 questionnaires outside the number of 136 instruments that will be asked to respondents.

Results and Discussion

Table 1. The results of hypothesis

R	R Square	Adjusted R Square	Std. Error of the Estimate
.875	.765	.763	8.414

Based on table 1, the coefficient of determination is 0.765. This value indicates that the variable of media use (independent variable) can explain the achievement motivation variable (dependent variable) by

Results of Regression Test Level of Media Use Against Motivation Achievers with the following hypotheses:

H_0 = There is no effect between the use of media on student achievement motivation.

H_1 = There is an influence between the use of media on student achievement motivation student.

The results of hypothesis tests between the use of media against achievement motivations such as table 1.

76.5% while the remaining 23.5% is explained by other variables. Further regression tests are performed as for the results as shown in table 2.

Table 2. The regression coefficient test

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	30855.830	1	30855.830	435.859	.000 ^b
Residual	9486.288	134	70.793		
Total	40342.118	135			

Based on table 2, it can be seen in the regression coefficient test. This is used to determine whether the independent variables together have a significant effect on the dependent variable. In this case, the ANOVA table is used to determine whether

the regression model can be used to predict the dependent variable or not. The result obtained the value of Sig. 0.000 which means less than 0.05. So, H_0 is rejected, then H_1 is not rejected. Continued with coefficients tests with results as in table 3.

Table 3. Coefficients Result

Variable	Coefficient B	Std. Error	Std. Coefficients β	t	Sig.
(Constant)	-86.332	5.957		-14.493	.000
Media Use	3.663	.175	.875	20.877	.000

Based on table 3, the resulting regression equation $Y = -86.332 + 3.663X$. The equation illustrates that a change to 1 unit of the variable level of media use will affect the variable level of achievement motivation by 3.663. The correlation coefficient value is 0.875. This indicates the strength of the relationship between the

variable level of media use (independent variable) and the variable level of achievement motivation (dependent variable) is very strong in a positive direction. Based on the interpretation of each table in the regression test, it can be concluded that H_0 is rejected and H_1 is not rejected. So, it can be said that there is a

strong influence between the level of media use and the level of student achievement motivation.

Linear Regression Test of Each Dimension on the Variable Level of Media

Use on the Level of Achievement Motivation. The results of the correlation test can be seen in table 4.

Table 4. The correlation coefficient the Results

Variable	Coefficients B	Std. Error	Std. Coefficients β	t	Sig.
(Constant)	-73.385	8.177		-8.974	.000
Duration of Use	4.035	1.391	.127	2.901	.004
Application Choice	1.138	.375	.125	3.037	.003
Time Spent	4.805	.195	.844	24.623	.000

The value of the correlation coefficient of the "time spent" dimension is 0.844. This indicates the strength of the relationship between the dimension of "time spent" on the level of achievement motivation is very strong in a positive direction. The value of the correlation coefficient of the "duration of use" dimension is 0.127. This indicates the strength of the relationship between "duration of use" to the level of achievement motivation is weak in a positive direction.

The correlation coefficient value of the "application choice" dimension is 0.125. This indicates the strength of the relationship between "application choice" on the level of achievement motivation is weak in a positive direction. So, the dimension of the variable of media use that has the most influence on the level of achievement

motivation is the dimension of the time spent. Meanwhile, the dimension of the media use variable that has the least effect on the level of achievement motivation is the application choice dimension.

Multicollinearity test results aim to test a regression model there is a correlation between free variables. Multicollinearity test results are seen from the magnitude of variance inflation factor (VIF) and tolerance (Stavridi, 2015). Tolerance is used to measure selected independent variables that are not explained by other independents. A low tolerance value equals a high VIF value. The cutoff value is used to indicate the existence of multicollinearity which is a tolerance value of ≥ 0.01 or equal to the value of $VIF \leq 10$ while the results of the multicollinearity test can be seen in table 5.

Table 5. The results of the multicollinearity test

Variable	B	Std. Error	β	t	Sig.	Tolerance	VIF
(Constant)	-73.385	8.177		-8.974	.000		
Duration of Use	4.035	1.391	.127	2.901	.004	.532	1.878
Application Choice	1.138	.375	.125	3.037	.003	.597	1.675
Time Spent	4.805	.195	.844	24.623	.000	.863	1.158

To find out whether there are symptoms of multicollinearity between the dimensions of duration of use, application

choice, and time spent to the dependent variable, namely achievement motivation. Then we need to see the tolerance value and

the VIF value. If the tolerance value is > 0.10 , it means that there is no multicollinearity. Another condition is that if the VIF value is < 10.00 , it means that there is no multicollinearity.

Based on the table 5, it is known that the tolerance value for the “duration of use” dimension is 0.532; the “application choice” dimension is 0.597; the dimension of “time spent” is 0.863, which means that there is no multicollinearity. Then, it is known that the VIF value of the “duration of use” dimension is 1.878; the “application choice” dimension is 1.675; and the “time spent” dimension is 1.158, which means that there is no multicollinearity. Based on the SPSS calculation above, it is known that there is no multicollinearity between variables in the use of media. Thus, there is a linear relationship between the variables of the level of media use and the level of achievement motivation in students.

Based on the survey results, it is known that as many as 101 students stated that they used the application for distance learning, more than 5 (five) hours a day. This indicates that communication technology has a very important role in the distance learning process for students receiving the Bidikmisi scholarship at the University of Indonesia. The use of distance learning applications with a duration of more than 5 hours, was carried out by the respondents in the morning until the afternoon. This shows that the lecture process is carried out as usual, starting from morning to evening. In the choice of applications to support long distance learning, respondents used the Zoom application more often, followed by an application made by the University of Indonesia, namely EMAS. In the third position, there is the Google Meet application. Meanwhile, Google Classroom is in the final position as an alternative of applications for long distance learning. The findings are supported by previous researchers that communication technology can facilitate distance learning (Backhaus et al., 2019; Mcroy et al., 2020; Oluoch, 2016).

Furthermore, this study found that the long-distance learning system caused the low interest of students to play an active role in the learning process. As many as 55.1% of respondents admitted that they were not very active in terms of questions and answers during the distance learning system. Respondents admitted that they rarely asked the lecturers even though there were materials they did not understand. In addition, it was also found that the long-distance learning system caused a low level of awareness of students to consult with academic supervisors at the beginning of the semester. As many as 55.1% of respondents admitted that they rarely or never conducted consultations with academic supervisors at the beginning of the semester. This is an interesting finding because consultation activities at the beginning of the semester are activities that must be carried out during the offline learning process. Moreover, Bidikmisi scholarship recipients are required to complete their studies on time. Thus, collaboration between students and academic supervisors in determining the study plan is very important. After knowing the process of using communication technology in long distance learning and student motivation during long distance learning, this study shows that the use of communication technology affects the achievement motivation of students receiving the Bidikmisi scholarship. The level of use of communication technology has an effect of 76.5% on the level of student achievement motivation. These findings are in line with some previous research that communication technologists are influential with the number of student achievement motivations (Berger-Estilita & Greif, 2020; Ivanova et al., 2020; Tapingkae et al., 2020; Wu et al., 2019).

Conclusion

The results of the study it was found that students used communication technology more than five hours a day in participating in distance learning. This study also shows that the Zoom application is the most widely

used by students. The influence of the use of communication technology on student achievement motivation is the activity to conduct questions and answers during teaching and learning activities and the activity to consult with lecturers.

Looking at the results of the study, above, the suggestion from the results of the study is that it is necessary to conduct a review in long distance learning. For example, it is not necessary for students to have to listen to the lecturers' lectures continuously. The use of technology for more than five hours a day will affect the concentration power of students due to physical fatigue. This causes students to be less enthusiastic in asking lecturers and consulting. Learning models can also use modules so that they can learn independently.

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