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The Influence of YouTube-Based Learning Process and Digital Literacy on Student Learning Motivation in Informatics Lessons at SMK Sore Tulungagung

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***Abstract*—In today's digital era, the learning process needs tools to support the effectiveness of the learning process, the use of YouTube and digital literacy in the learning process will provide convenience to students when learning. This research was conducted at SMK Sore Tulungagung using the Quantitative Descriptive research method with a sample of 178 tenth grade TKJ students. Data were obtained using questionnaires. From the results of the data that has been obtained, it will be analyzed using the multiple Linear Regression method. Data analysis includes: 1) Normality test, 2) Linearity test, 3) Multicollinearity test, 4) Heteroscedasticity test. Hypothesis test partially (T Test), and simultaneously (F Test). The hypothesis results show that the influence of YouTube-based learning processes and digital literacy on student learning motivation in informatics lessons at SMK Sore Tulungagung has a contribution of 15.0% with an F value of 15,482, a significance value of 0.000 less than 0.05 which means that there is an influence of the YouTube-based learning process and digital literacy on student learning motivation in informatics lessons at SMK Sore Tulungagung.**

Keywords—YouTube-Based Learning Process, Digital Literacy, Learning Motivation, Informatics, Quantitative

I. INTRODUCTION

Along with the times, the existence of internet facilities has become an important need in the educational environment, especially in schools. The ease of accessing information and exchanging data makes the implementation of the internet network in schools very essential. The availability of the internet network allows students to obtain more diverse and comprehensive learning materials.

This condition encourages students to better understand the optimal use of the internet network. The use of technology, such as Android devices and the like, to access learning materials through the internet, also facilitates the learning process of students. The use of the internet as a learning medium includes support for learning activities, the provision of information, and the strengthening of the learning process itself [1].

The wise use of the internet provides various benefits, one of which is the ease of the student learning process. This convenience allows students to access information relevant to the subject matter delivered by educators more flexibly

Informatics subjects that emphasize the direct practice aspect require learning media that supports applicative skills. The use of learning videos through the YouTube platform allows students to access materials flexibly, repeatedly, and can be accessed anytime and anywhere, so it is expected to increase students' motivation to learn in informatics subjects.

SMK Sore Tulungagung is a private vocational high school in Tulungagung, East Java, which was established in 1975 and has eight majors, including Computer and Network Engineering. With a total of around 2,500 students, including 1,159 from the class of 2024-2025, the school implements an Independent Curriculum and a two-session system (morning and evening) to create learning comfort. Discipline is strictly enforced through moral and social sanctions.

The learning facilities are quite complete, including eight computer laboratories with internet access in each class. However, obstacles such as lack of concentration, attention, and differences in students' ability are still challenges. To overcome this, digital-based learning is implemented, one of which is through YouTube as an easily accessible learning video medium. Digital literacy is also strengthened through reading, typing, and recording information digitally, with teacher supervision to maintain effectiveness.

This study aims to determine the influence of YouTube-based learning processes and digital literacy on students' learning motivation in informatics lessons at SMK Sore Tulungagung.

II. LITERATURE REVIEW

A. Learning Motivation

Learning motivation is the student's internal interest or drive to master a lesson. In education, motivation is very important because it encourages student involvement in the learning process, improves material understanding, and helps achieve optimal academic achievement. Each student has a different level of motivation, and one way to improve this is to provide access to learning resources that are relevant to their experience [2].

According to [3] Learning motivation can be understood as an encouragement from within a person that arouses the spirit to continue to be active in learning activities in order to achieve academic success. This motivation does not just

appear, but is influenced by various factors. Among them are personal interest in a subject, an individual's belief in his or her abilities, and the existence of a conducive learning environment that supports the learning process. These three factors interact with each other in forming a strong spirit of learning in a person.

B. YouTube-Based Learning Process

YouTube is a video-based app from various users around the world. The ease of access to information makes it effective as a learning medium. The use of YouTube in the learning process is expected to expand students' knowledge and understanding of the material, as well as increase learning motivation. [4] Explain:

1) Student motivation before YouTube use: Before YouTube is used, student motivation is low. Learning becomes less conducive and students are passive. Once implemented, students are more motivated, socially active, and more enthusiastic about going to school.

2) Motivation-boosting strategies through YouTube: Teachers use YouTube for five meetings with different educational videos each session. This strategy increases students' motivation and understanding, as well as encourages active engagement and curiosity that supports the development of critical thinking.

3) Barriers to YouTube-based learning: Constraints include inadequate facilities, lack of teacher readiness, unstable internet networks, and limited funding due to reliance on personal financing.

C. Digital Literacy-Based Learning Process

Digital literacy is the ability of individuals to operate and utilize digital technology appropriately in learning and daily life. This literacy includes understanding how devices work, effective use, and their advantages and disadvantages, so that users can master technology well. Internal barriers and external constraints according to [5] include:

1) Internal obstacles in the implementation of digital literacy in schools include:

a) Characteristics and readiness of students

b) Limited facilities and infrastructure

c) Lack of budget.

d) Educators and education staff for the literacy movement in schools

2) External obstacles in the implementation of digital literacy include:

a) Low community and environmental support

b) Lack of attention or assistance from the government

III. RESEARCH METHODOLOGY

This study uses a descriptive approach with a quantitative method to analyze the influence of YouTube-based learning processes and digital literacy on students' learning motivation. The results of the research are presented factually according to the actual conditions. According to [6], the quantitative method emphasizes testing theory through variable measurement and numerical data analysis using a deductive approach. This approach generally follows paradigms such as positivism, experimentation, or empirical. The main objective is to identify possibilities based on findings that are measurable and statistically analyzeable[7].

This study uses multiple linear regression analysis to find out the extent of the influence of YouTube-based learning processes and digital literacy on students' learning motivation. In addition, this analysis is also intended to observe the interaction between the two independent variables in influencing the dependent variable.

A. Research Variables

This study uses a dual paradigm involving two independent variables, namely YouTube-based learning and digital literacy, and one dependent variable, namely student learning motivation. This approach with two independent variables is further described by [8].

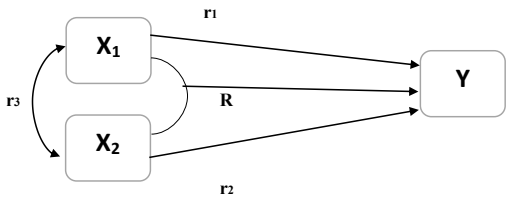

Figure 3. 1 Dual Paradigm of Two Independent Variables

B. Population and Sample

This study took the population of tenth grade students majoring in Computer and Network Engineering at SMK Sore Tulungagung, which consisted of four classes.

In this study, the sampling technique used was probability sampling using the simple random sampling method. This method is performed by simple randomization, where each member of the population has an equal chance of being selected as a sample regardless of class division in the population [9].

Table 3. 1 Research Sample

No	Class	Number of Students
1	X TKJ 1	45
2	X TKJ 2	44
3	X TKJ 3	45
4	X TKJ 4	44
Sum		178

C. Data Collection Techniques

In the implementation of this research, data was collected through primary sources using questionnaires as the main instruments. The data collection process was carried out directly to respondents by utilizing the Google Form platform. The use of this online media was chosen to make it easier for respondents to fill out questionnaires flexibly, so that it is expected to be able to support the smooth and effective data collection process.

The preparation of the questionnaire was adjusted to the indicators on each variable to match the aspects to be measured in the research. These indicators are the main reference in formulating question items, so that the data obtained is relevant to the research objectives. The following

are the indicators for each variable along with the questionnaire items.

Table 3. 2 Grids - YouTube-Based Learning Process Instrument Grids

No	Indicator	Item
1	YouTube as a learning medium	1, 2, 3
2	Ease of use of YouTube	4
3	YouTube provides informative learning content	5, 6
4	YouTube interactivity as a learning medium	7, 8
5	Ease of sharing learning videos	9, 10
6	Free YouTube accessibility is free	11, 12

Table 3. 3 Grid - Instrument Grid for Digital Literacy-Based Learning Process Instruments

No	Indicator	Item
1	Can search for information on the internet	1, 2
2	Hypertextual Directional Guidance Ability	3, 4
3	Able to assess informational content	5, 6
4	Critical of the information obtained	7, 8

Table 3. 4 Grid - Learning Motivation Instrument Grid

No	Indicator	Item
1	Have a passion and desire to succeed	1, 2
2	The presence of encouragement and the need to learn	3, 4
3	Ability to work independently	5, 6
4	Willingness to accept challenges in learning	7, 8
5	Perseverance in doing tasks	9, 10

The questionnaire in this study was compiled using the Likert assessment scale which consisted of four categories, namely: strongly agree (SS), agree (S), disagree (KS), and disagree (TS). The four categories are used to measure student learning motivation, with each category having the following assessment weight:

Tabel 3. 5 Skala Likert

Category	Code	Score
Strongly agree	SS	4
Agree	S	3
Disagree	KS	2
Disagree	TS	1

D. Instrument Validity and Reliability

The validity test is carried out to ensure that the instrument used is really able to measure the variables being studied. In this study, the validity test was carried out with the help of SPSS software version 27. The number of respondents was 33 students with a total of 30 statements tested. The test was carried out at a significance level of 5% ($\alpha < 0.05$), with a table r value of 0.344 as a reference for decision-making.

The reliability test of the research instrument is used to evaluate the credibility of the questionnaire used to collect research data. If a variable shows an *Alpha Cronbach* value of >0.60, then it can be considered consistent or reliable in its measurement [10].

E. Data Analysis

Data analysis was carried out after all data from respondents were collected completely. The data is then grouped by variables and analyzed according to the research objectives. In the quantitative approach, there are two types of statistical analysis, namely descriptive and inferential [8]. In this study, descriptive statistical analysis was used to process the data obtained.

F. Descriptive Stastistical Analysis

Descriptive statistics are used to describe the data obtained without drawing general conclusions. This analysis includes the process of collecting, processing, and presenting data in a structured manner. The measures used include mean values, variance, maximum, minimum, total amount, range, curtosis, and skewness to show the characteristics of the data as a whole[11].

In this study, the analysis prerequisite tests include normality tests, linearity tests, multicollinearity tests, and heteroscedasticity tests. Furthermore, the hypothesis test is carried out through two approaches, namely partial tests (T test) and simultaneous tests (F tests).

IV. RESEARCH RESULTS

This research was carried out through several stages of data testing based on the results obtained from the field. This section presents data from each variable collected during the implementation of the research at SMK Sore Tulungagung.

A. The Influence of YouTube-Based Learning Processes on Student Learning Motivation

The data obtained based on a sample size of 178, has an average of 34.44, a median value of 35.00, a mode of 36, a standard deviation of 5,252, a variant of 27,582, a range of 36, a minimum value of 12, and a maximum value of 48.

The variable frequency distribution of YouTube-based learning process was categorized as very low as 1 student 0.5%, low as 11 students 6.2%, sufficient as many as 64 students 35.9%, high as many as 82 students 46.1%, and very high as many as 20 students 11.3%. A graph of the frequency distribution can be seen in the following figure:

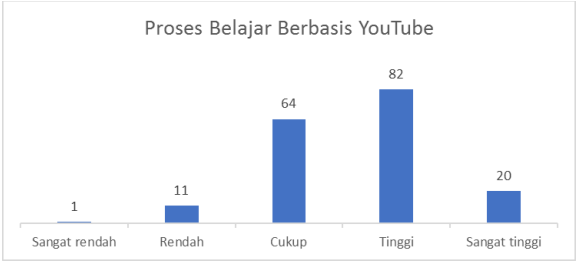

Figure 4. 1 YouTube-Based Learning Process Frequency Distribution Graph

B. Description of Digital Literacy-Based Learning Process Variable Data

The data obtained based on a sample size of 178, had an average result of 23.91, middle indigo 24.00, a value that often appears 24, a standard deviation of 3,450, a variant of 11,901, a range of 18, a minimum score of 14, and a high value of 32.

The variable frequency distribution of digital literacy-based learning processes was very low as 0 students 0%, low as 16 students 8.9%, sufficient as many as 57 students 32.0%, high as many as 86 students 48.4%, and very high as many as

19 students 10.7%. A graph of the frequency distribution can be seen in the following figure:

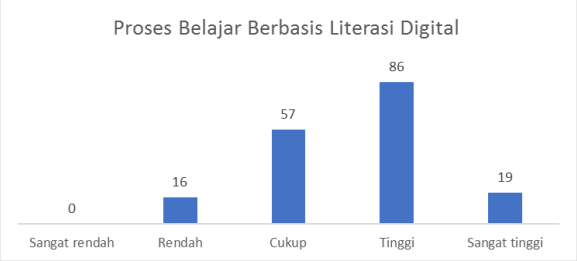

Figure 4. 2 Digital Literacy-Based Learning Process Frequency Distribution Graph

C. Description of Learning Motivation Variable Data

The data obtained based on the number of sample sizes 178, had an average result of 23.87, a median value of 33.00, a value that appears frequently 30, a standard deviation of 3,926, a variant of 15,413, a range of 20, a minimum value of 20, and a high value of 40.

That the frequency distribution of the variable learning motivation is in the very low category 0% of students, in the low category, has a percentage of 0.5%, the fair category has a percentage of 10.7%, the high category, has a percentage of 51.1%, the very high category has a percentage of 37.7%. A graph of the frequency distribution can be seen in the following image:

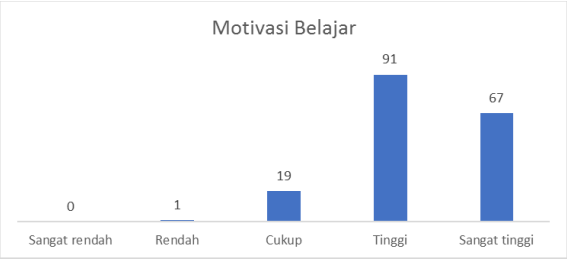

Figure 4. 3 Frequency Distribution Graph of Learning Motivation

D. Data Analysis

Data analysis and hypothesis testing is the initial hypothesis assessment and data analysis by conducting data analysis and hypothesis testing will know the results in each data test

1) Normality Test

The results of the normality test showed that the number of samples was 178 respondents with an Asymp score. Sig is 0.075 and Monte Carlo Sig is 0.075. The test was conducted with a 99% confidence level, with a value range between 0.068 and 0.081. Because the significance value is greater than 0.05, it can be concluded that the data in this study are normally distributed.

2) Linearity Test

Based on the results of the linearity test, the significance value of each variable was 0.000, which means it is smaller than 0.05. Meanwhile, the significance value of *deviation from linearity* for the YouTube-based learning process variable to the learning motivation variable was 0.475, and for the digital literacy-based learning process variable to learning motivation was 0.328, both of which were greater than 0.05. Thus, it can be concluded that the relationship between independent variables and bound dependent variables is linear.

3) Multicollinerarity Test

The results of the multicollinearity test showed that all variables had a tolerance value of 0.588, which was above the minimum threshold of 0.1. In addition, the Variance Inflation Factor (VIF) value of 1.701 is still below the maximum limit of 10. Based on these results, it can be concluded that there is no indication of multicollinearity between independent variables to dependent variables in this study.

4) Heteroscedasticity Test

The results of the heteroscedasticity test showed that the significance value of the YouTube-based learning process variable to the learning motivation variable was 0.799 and the digital literacy-based learning process variable to learning motivation was 0.179. Both values are greater than 0.05, so it can be concluded that no symptoms of heteroscedasticity were found in this study.

E. Uji Hypothesis

In the multiple linear regression analysis hypothesis hypothesis carried out in this study, a partial test (T Test) and a stealth test (F Test) were used.

1) Partial Test of the Influence of YouTube-Based Learning Process on Learning Motivation

Based on the results of the partial test, the YouTube-based learning process variable to the learning motivation variable showed a significance value of 0.000, which is smaller than 0.05. Thus, the hypothesis is accepted and it can be concluded that there is a significant influence between the YouTube-based learning process on learning motivation. The magnitude of the influence of the contribution value is 9.7%.

2) Partial Test of the Influence of Digital Literacy-Based Learning Process on Learning Motivation

Based on the results of partial testing, the digital literacy-based learning process variable on learning motivation showed a significance value of 0.000, which is smaller than 0.05. Thus, the hypothesis is accepted, there is a significant influence between the digital literacy-based learning process on learning motivation. The magnitude of the influence of the contribution value is 14.2%.

3) Simultaneous Hypothesis Testing

The results of the ANOVA test showed that the simultaneous testing yielded an F value of 15.482 with a significance of 0.000, which is smaller than 0.05. Based on these results, it can be concluded that the hypothesis is accepted and that there is a significant simultaneous influence between the YouTube-based learning process and the digital literacy-based learning process on learning motivation.

Table 4. 1 Simultaneous ANOVA Test Results

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	410.126	2	205.063	15.482	000b
	Residual	2317.902	175	13.245		
	Total	2728.028	177			
a. Dependent Variable: Learning Motivation						
b. Predictors: (Constant), Literasi Digital, YouTube						

CONCLUSION

Based on the results of the study, it can be concluded that in the partial test, there was an effect of the YouTube-based learning process on students' learning motivation. With a significance value of 0.000 < 0.05, the hypothesis is accepted. In addition, the digital literacy-based learning process also has a significant influence on students' learning motivation, which is shown by a significance value of 0.000 < 0.05. Simultaneously on the results of simultaneous tests. The YouTube-based learning process and digital literacy have a significant influence on students' learning motivation, as evidenced by the results of the ANOVA test with an F value of 15.482 and a significance of 0.000 < 0.05, so that the hypothesis is accepted. In this result, the contribution value of the influencing variable is 15.0% and 85.0% is from other variables.

Students are advised to limit and understand the use of digital technology in the learning process, including the optimal use of YouTube accompanied by digital literacy and media ethics. Teachers are expected to provide direction and supervision to students, and have innovations in the learning process, for example through the use of YouTube videos that support the delivery of digital literacy-based materials. Schools are expected to provide supporting facilities such as internet access and adequate computer labs to support digital learning. Researchers are then advised to use a qualitative approach or mixed methods to explore more deeply the factors that affect learning motivation, as well as consider other variables such as the learning environment, teaching style, and personality of students, considering that the simultaneous contribution of YouTube and digital literacy in this study is only 15.0%.

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