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## Use of Learning Management System for Students' Independence and Discipline

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**Abstract.** *In recent years, technological developments in Indonesia have continued to increase and have had an impact on the world of education. On the other hand, technological advances have led to several learning media, one of which is the LMS. Learning Management System is a software designed to create and distribute learning content. The existence of a learning management system has made it easy for educators to carry out the learning process. This will also have an impact on student behavior in participating in this learning process. With use . The Learning Management System in the learning process can form independent behavior and student discipline. The purpose of this research is to analyze the effect of using . Learning Management System for the independence and discipline of student learning in elementary schools. This type of research is a quantitative research using data collection techniques in the form of questionnaires, observation and documentation, for data analysis techniques in this study using the Partial Least Square (PLS) Structural Equation Modeling (SEM) approach using data processing in SmartPLS software.*

**Keywords** - Learning Management System, Independence, Discipline

### I. INTRODUCTION

In recent years, developments in information and communication technology in Indonesia have continued to increase and have had an impact on various fields, especially in the field of education<sup>1</sup>. Educational technology and the learning process are two interrelated components, for example the learning process will continue without the presence of educators as a means of delivering learning material, but students can still gain knowledge through technology as a means<sup>2</sup>. The existence of this technological development can be utilized to facilitate the implementation of learning that is more effective and efficient<sup>3</sup>. In addition to having a positive impact by facilitating the implementation of education, technological developments have brought new habits, namely learning can be held without face-to-face meetings<sup>4</sup>. By taking advantage of technological developments, several learning devices or media are starting to emerge that can be used to facilitate learning, one of which is the Learning Management System<sup>5</sup>.

The Learning Management System is a system that is comprehensively integrated and can be used as a learning media based on e-learning media<sup>6</sup>. This learning model uses internet-based technology as the main source in organizing learning and aims to enrich students' knowledge of classroom learning<sup>7</sup>. This system is currently widely used by educational institutions in the process of implementing learning, especially during the Covid - 19 pandemic<sup>8</sup>. The existence of a learning management system certainly makes it easy for teachers when providing the learning process for students at school<sup>9</sup>.

The Learning Management System (LMS) itself is included in software that can be used to deliver learning materials and multimedia resources digitally or web-based online and can be used to manage learning activities<sup>10</sup>. Several types of Learning Management System, namely Google Classroom, Google Meet, WhatsApp, and other applications<sup>11</sup>. Through the Learning Management System a distance learning can be done. With this system, teachers can manage planning, distribution, and evaluation activities in learning activities at educational institutions<sup>12</sup>. The use of this system in addition to helping teachers in the process of organizing learning at school can also make it easier

for students to access learning materials without any space and time restrictions<sup>13</sup>. Students can of course easily access learning materials without having to meet face to face with the teacher. Not only that the process of communication between students and teachers can be done through this system.

The Learning Management System (LMS) in the learning process will of course also have an impact on the independence of students. This is because students are required to be independent in accessing the learning contained in the Learning Management System<sup>14</sup>. Student independence can also be formed because learning using the LMS can be done remotely<sup>15</sup>. Therefore, the learning process using LMS can be used by teachers in assessing student character. Students can be judged to have been independent in the learning process marked that these students can control themselves in the learning process and do not depend on others<sup>16</sup>.

Not only that, the use of LMS in the learning process will also shape the personality of students to become disciplined. Discipline in students is a very important thing which of course relates to the abilities possessed by students when managing time and energy when students have to complete their assignments in a timely manner, study hard and understand the material provided by the teacher<sup>17</sup>. From the process of implementing learning using the learning management system, researchers are interested in researching the effect of using the Learning Management System on student independence and discipline. The advantages of the Learning Management System compared to other schools are that it includes the first few in the learning management system in elementary schools containing second learning material which also contains learning videos. Not only that teachers can also upload lesson plans. Fourth, the learning management system also contains literacy and numeracy content. Not only that, the learning management system also contains learning animation content. This learning management system also facilitates students in submitting assignments connected to Google Clasarom. Learning management can also be connected to meeting rooms. Whereas the LMS in other schools only contains literacy and numeracy content or is just a website containing information.

The use of a learning management system for self-learning will have a major impact on student independence and discipline. Learning independence can be interpreted as a learning activity carried out by students without relying on the help of others in achieving learning goals, namely mastery of both material and mastery of knowledge well with self-awareness and being able to apply the knowledge they have in solving problems that occur in life<sup>18</sup>. Independence will certainly affect the abilities and learning outcomes of students, this is in line with research<sup>19</sup>. Which states that independence has a significant influence on mathematics learning. Student independence is an indicator that needs to be developed considering student learning independence is a determinant of student learning success<sup>20</sup>.

In addition to student independence, researchers need to know student discipline in this research. Discipline is the primary word for discipline. The word discipline comes from the discipline, which means "training to act following rules,"<sup>21</sup>. Train a person to perform actions according to the rules. Behavior that is controlled, regular, and then based on conscious conditions and has a purpose for the person concerned then influences happiness for himself and others. Owned and controlled behavior is called discipline.

Controlled and controlled in question is able to control and control yourself from actions that violate the rules. Discipline is an aspect of the socialization process that directs an individual in fulfilling and obeying what is expected of his environment both within the school, family and community environment.<sup>22</sup>. Discipline is an individual aspect that leads to an attitude of obeying what is expected of the environment, both in the family, school and community environment.

The use of a learning management system will directly impact changes in student behavior. This is as evidenced in the study entitled "Pembelajaran berbasis learning management system (LMS) menggunakan moodle terhadap peningkatan kemandirian belajar siswa" In this study using experimental research, using a questionnaire instrument with the object studied was all class VIII students of SMPN 24 Medan. The purpose of this study is to find out that learning by using a learning management system (LMS) using the moodle type can increase student learning independence in the material of Light and Optical Instruments in students of SMP N 24 Medan<sup>23</sup>.

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Subsequent research was conducted by Nungki Khunaini and Ni'matush Sholikhah in 2021 with the title "Pengaruh Penggunaan Learning Management System Google Classroom dan Gaya Mengajar Guru terhadap Motivasi Belajar pada Pembelajaran Daring". In the previous research both of these used quantitative research methods, while this study was correlational in nature, and the population used as many as 106 students of class XI IPS MAN 2 Nganjuk is a population that is used as a subject in further research<sup>24</sup>.

Based on some of the research above, it can be concluded that the use of the Learning Management System can provide feedback and can maximize the facilities in classroom learning, because by using the Learning Management System learning becomes more interesting and classes become more interactive. However, previous research has focused more on independence and student learning motivation. The research that will be carried out is to examine the influence of student independence and discipline through the use of the Learning Management System (LMS). The formulation of the research problem is 1). analyze the use of learning management system on student independence, 2). analyze the use of learning management system on student discipline. The selection of these two problem formulations was based on previous research which did not discuss the use of a learning management system for student independence and discipline.

## 7 II. METHOD

This research uses a type of quantitative research with a descriptive approach. The population in the study included all 5th grade students at Muhammadiyah 1 Sidoarjo Elementary School. The population of this study is 30 students of SD Muhammadiyah 1 Sidoarjo. Data collection techniques in this study were in the form of questionnaires, observation and documentation. The questionnaire used in this study was in the form of a questionnaire and a written test which was given to all students before and after the treatment of the two classes. The data analysis technique in this study used the Partial Least Square (PLS) Structural Equation Modeling (SEM) approach using data processing in the SmartPLS version 3 software. PLS itself can be interpreted as a structural equation model in which this equation is based on components or variants (variance)<sup>25</sup>. PLS itself can also be used to confirm a theory<sup>26</sup>. On the other hand the PLS function can also be used to explain whether or not there is a relationship between latent variables<sup>27</sup>. Construct confirmatory analysis using reflexive indicators by looking at the validity of each indicator used to test the reliability of the construct. Evaluation of this research model using validity test. The criteria for the validity of the indicators are measured convergently and the validity includes indicators of loading factor, average variance extracted (AVE), and discriminant validity also includes Square Root Average Variance Extracted (AVE), Cross Loading and correlation between latent constructs.

## III. RESULTS AND DISCUSSION

After collecting the data, the researcher first tested the validity of the questionnaire. There were 7 questions for the Learning Management System variable (X), 7 questions for the Independence variable (Y1) and 7 questions for the Discipline variable (Y2). From the results of data collection it was found that indicator X, Indicator Y1 and Indicator Y2 obtained the following values.

**Table 1.** Data Value Variable Learning Management System (X), Independence (Y1) and Discipline (Y2)

Learning Management System (X)		Independence (Y1)		Discipline (Y2)	
Score	Total	Score	Total	Score	Total
1	5	1	2	1	4
2	65	2	56	2	35
3	97	3	115	3	129

4	40	4	35	4	42
5	3	5	2	5	0

**R Square Test Results**

The R Square value can be interpreted as the coefficient of determination in the endogenous construct. Meanwhile, according to Chin (1998), the R square value is 0.67 (strong), 0.33 (moderate) and 0.19 (weak); (2) Estimate for Path Coefficients, is the value of the path coefficient or the magnitude of the relationship/influence of the latent construct. The R Square test results are as follows:

**Table 1. R Square Test Results**

Variabel	R Square	Adjusted R Square
Y1	0,844	0,838
Y2	0,447	0,427

The table shows the R Square value and Adjusted R Square value of each dependent variable. The R Square value indicates the relationship between the independent variables together with the dependent variable while the Adjusted R Square value indicates how much influence the number of variables has on the Y value. From the table above, the R Square value of Y1 is 0.844 where this value indicates that the relationship between variables Learning Management System (X) with the Independence variable (Y1) is 84.4% and is included in the strong category. Whereas the R Square value of Y2 is 0.447 where this value indicates that the relationship between the Learning Management System (X) variable and the Discipline variable (Y2) is 44.7% and is included in the moderate category. The Adjusted R Square value of Y1 is 0.838 where this value indicates that one independent variable (the Learning Management System variable) has an influence on the Y1 variable of 83.8%. While the Adjusted R Square value of Y2 is 0.427 where this value indicates that one independent variable (the Learning Management System variable) has an influence on the Y1 variable of 42.7%.

**Validity Test Results**

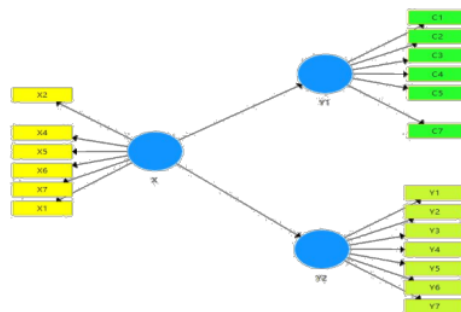
A latent variable can be said to have good reliability if the composite reliability value is greater than 0.7 and the Cronbach's alpha value is greater than 0.7. The following are the results of the reliability test from the analysis that has been carried out as follows:

**Table 2. Validity Test Results**

Variabel	Cronbach's Alpha	Reliabilitas Komposit
X	0,899	0,922
Y1	0,897	0,921
Y2	0,940	0,952

From the table above it can be seen that each variable in this study has a Cronbach's Alpha value above 0.70. This shows that the Learning Management System variable (X), the Independence variable (Y1), and the Discipline variable (Y2) are declared reliable or fulfill the reliability test. Each Cronbach's Alpha value of each variable is 0.899; 0.897; and 0.940 where the three values are included in the strong reliability category.

The Composite Reliability value shows the reliability value of the indicators of each variable in the study. In this study, the Composite Reliability value for each variable was above 0.70. This shows that the construct indicators on the Learning Management System variable (X), the Independence variable (Y1), and the Discipline variable (Y2) have a high reliability value.



**Picture 1. Complete Structural Model**

The image above is a visual display of the complete Structural Equation Model (SEM). Each arrow in the visual appearance of the model shows the relationship between the variables and other variables and the relationship between the variables and the indicators in it. From the figure it can be seen that after conducting the validity test, the number of indicators in variable X is 6 indicators namely X1, X2, X4, X5, X6, and X7. The number of indicators in the Y1 variable is 6 indicators, namely C1, C2, C3, C4, C5, and C7 while the number of indicators in the Y2 variable is 7 indicators, namely Y1 indicators to Y7 indicators. The number of indicators in the diagram is an indicator that passes the reliability test.

#### Discriminant Validity Test Results

The next analysis is the result of the discriminant validity test where the relation value of the indicator to the construct is greater than the correlation value between the indicator and the other constructs. Another criterion for achieving discriminant validity is to look at the correlation value of one construct with another. The reference value of each construct is the square root of the construct's AVE value.

**Table 4. AVE Value and AVE Root**

Variabel	Nilai AVE	Akar AVE
X	0,664	0,815
Y1	0,662	0,814
Y2	0,738	0,859

**Table 5. Correlation Value Between Latent Variables**

Variabel	X	Y1	Y2
X	1,000	0,919	0,668
Y1	0,919	1,000	0,649
Y2	0,668	0,649	1,000

Each variable in this study has a greater latent square root value when compared to the construct correlation values on other latent variables. This shows that all the variables in the study, namely the Learning Management System variable (X), the Independence variable (Y1), and the Discipline variable (Y2) have fulfilled the discriminant validity test.

## VII. CONCLUSION

Based on the test results that have been carried out, it produces several points regarding the Effect of Using the Learning Management System on the Independence and Discipline of SD Muhammadiyah 1 Pucanganom Sidoarjo Students. First, based on the results of the R Square test, the value of the Independence variable (Y1) has a strong influence on the Learning Management System (X) variable with a value of 0.844 and the influence of the Discipline variable (Y2) on the Learning Management System (X) variable is included in the moderate category with a value 0.447. Secondly, based on the results of the Cronbach's Alpha value validity test in this study, it is said to be very good because the value shown above is  $>0.70$  which guarantees the reliability of the construction indicators fulfilling the reliability test.

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Thank you to my family and friends who have helped in completing this thesis.

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