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## THE EFFECT OF TEACHER COMPETENCE, ONLINE LEARNING MODEL ON STUDENT'S LEARNING EFFECTIVENESS AT STATE JUNIOR HIGH SCHOOL, TELAGA DISTRICT, GORONTALO REGENCY

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**Abstract.** This study aims to determine the direct influence of teacher competence and online learning model on students' learning effectiveness. It employs a survey method by applying a questionnaire. In addition, data analysis uses descriptive and inferential analysis with path analysis. The population in this study is the whole students at Grade VIII of State Junior High School throughout Telaga Subdistrict, Gorontalo Regency, in the amount of 158 students. At the same time, the samples are 88 students taken by using a proportionate stratified sampling technique. Research findings reveal that: 1) teacher competence has a direct positive influence on students' learning effectiveness, 2) online learning model has a direct positive influence on students' learning effectiveness, 3) teacher competence and online learning model simultaneously influence students' learning effectiveness. As having been stated previously, the purpose of this study is to find out the influence of teacher competence and online learning model towards students' learning effectiveness at State Junior High School throughout Telaga Subdistrict, Gorontalo Regency. High-quality education can produce quality and productive human resources so that they can compete in the competitive era of globalization. Importantly, students' learning outcomes are a benchmark of success in learning the material. Teachers need to evaluate students' abilities in order to figure out student learning outcomes. In other words, student learning outcomes can be perceptible from the result of the evaluation.

Keywords: Teacher Competence; Online Learning Model; Students Learning Effectiveness

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### I. INTRODUCTION

In the implementation of education in schools, teachers play an important role. Teachers are educational staff who have the greatest opportunity to affect students, both positive and negative effect. According to Law no. 14 of 2005 concerning Teachers and Lecturers in Article 1 paragraph (1) what is meant by teachers are professional educators with the main task of educating, teaching, guiding, directing, training, assessing, and evaluating students. A teacher must have four competencies, such as personal competence, social competence, professional competence and pedagogic competence. the quality of education must be done from various aspects, both from systems, materials, methods,

facilities and the most important thing is the quality of educational resources, in this case is teachers. The quality of an education can be reflected in the quality of a learning, the quality of a learning will be reflected in the quality of teachers (Hanum, Supriyanto, & Timan, 2020). As someone who carries educational duties, teachers are required to have good teaching competencies. According to Usman (2016) Competent teachers will be better able to create an effective learning environment and will be better able to manage the teaching and learning process, so that student learning outcomes are at an optimal level. The teacher's role is very decisive in efforts to improve the quality of education. Teachers as the front line in the education system, teachers must get maximum attention, why every teacher is required

to be professional and dignified. Teacher competence is the result of integration between personal, scientific, technological, social, and spiritual abilities to form a competency which includes mastery of the material, student understanding, personal development, professionalism, and learning. The development of science that increasingly dynamic, demands the development of human resources. In creating quality education and learning, it should be in line with the development of educational technology which is currently developing. In the 21<sup>st</sup> century, technological developments in the field of education are increasingly advanced, this can be considered by teachers as one of the new strategies in developing learning. Developments in this century require the world of education to change the concept of thinking (El Iq Bali, 2019).

The future of education has far-reaching and profound implications for teaching design and learning techniques. Teachers will realize that conventional learning models and strategies will not be enough to help students. Indonesia is currently faced with challenges in the midst of the Covid-19 pandemic, where the government urges the Indonesian people to stay at home. The Covid-19 pandemic has not only affected the economic and social sectors, but also the education sector, which now inevitably has to start adapting to this era. So that learning activities that were originally carried out face-to-face turned into non-face-to-face learning. The program is known as online learning or the E-learning system (Fauzi, 2020). According to Isman & Hanafi (2016) online learning is the use of the internet network in the learning process. So online learning is an effort to teach students without face-to-face through the available network/internet. The implementation of online learning by the government requires all teaching and learning activities to be carried out from home. The implementation of online learning is carried out as an effort to continue to realize the goals of education in Indonesia in the midst of the Covid-19 pandemic, as well as efforts to prevent the spread of the Covid-19 virus. The Covid-19 pandemic has forced the learning system in schools to drastically change from face-to-face meetings to online learning (RISETDIKTI, 2016).

In education units at the junior high school level, the implementation of online-based learning is still relatively rare or has never been implemented. So that the implementation of online learning in junior high school will definitely encounter various obstacles. The most prominent obstacle is the change in habits that occur in students, initially well received, enthusiastic because the activities will be carried out at home, but over time it will cause a saturation in students because they do the same routine every day. In addition, the intensity of the teacher in delivering a material in one of the subjects is reduced and less than optimal. If the delivery of material which is usually done in schools is not by the lecture method, it will be a little easier to apply in online learning, on the other hand there are subjects which if not delivered by the lecture method will be difficult for students to understand, and it may be difficult to apply online learning in these subjects (Ningsih, 2020).

In face-to-face learning, there are usually still obstacles when teaching and learning activities take place, especially in lower classes. In the lower class, the teacher usually conveys learning material using the lecture method so that easily understood by students. In the implementation of online learning, which is still relatively new, there will certainly be obstacles faced by teachers, students and schools. Implementation of online learning that has not been maximized in schools, or teachers who only give assignments without explaining the material to students can have an impact on students (Dewi, 2020). In addition to these obstacles, there are benefits from implementing online learning during this covid-19 pandemic. In a learning with a situation like this, teachers are required to be more active in understanding how to communicate with students with clearly different languages and tools (Juliawan, Bawa, & Qondias, 2021).

The use of learning media and online learning methods must be used by teachers with the maximum (Simatupang, Sitohang, Situmorang, & Simatupang, 2020). This is to support the implementation of online learning during the pandemic in an undetermined period of time when the application of online learning will end. Thus the development of student learning is very dependent on whether or not the teaching and learning process delivered by the teacher. The development of student learning at home during the Covid-19 pandemic will tend to be different from the development of learning in schools so that teachers as facilitators must have various innovations, providing motivation for students in carrying out teaching and learning activities. This online learning process also makes it difficult for teachers to measure the extent to which students understand the material presented.

## II. METHODS

The research was carried out at the State Junior High School in Telaga District, Gorontalo Regency. The reason of the researcher took this school was because of its geographical location, where this location was easily accessible by researchers in collecting research data. The research method used is a quantitative method with a correlational approach, with the type of survey research that is to explain causal relationships and conduct hypothesis test with a pathanalysis approach. The population in this study were all second grade students in the Telaga District State Junior High School, amount to 158 students. Furthermore, the determination of the sample size using the Harry King Nomogram with an error rate of 5%, obtained a sample percentage of 55%, the sample taken is  $0.55 \times 158 = 88$  so that the sample taken in the study amounted to 88.

III. RESULT AND DISCUSSION

Table 1  
 Data Description of Each Variable

Research Variable	Theoretical Scores			Empirical Data Scores	
	Item	Lowest	Highest	Lowest	Highest
Teacher Competence	25	25	125	68	99
Online Learning Model	23	23	115	72	99
Student Learning Effectiveness	24	24	120	72	99

The data description of each variable in this study consists of 1) teacher competence (X1), (2) online learning model (X2), (3) student learning effectiveness (Y)). The results of data collection in general are presented in table 2 below.

Table 2

Descriptive Statistics	Teacher Competence	Online Learning Model	Student Learning Effectiveness
N	88	88	88
Range	25	27	27
Minimum	68	72	72
Maximum	93	99	99
SUN	7388	7590	7689
Mean	83.95	86.25	87.38
Std. Deviation	5.76	6.10	6.03
Variance	33,15	37.18	36.42

Based on the results of the description analysis, it was found that the student learning effectiveness variable had mean with  $\bar{Y} = 87,05$  with median (Me) = 87,04, and modus (Mo) = 86,45. Descriptive statistical processing of data in groups shows that the frequency distribution of 7 classes were obtained with a minimum score of 72 and a maximum score of 99, so the score range was 27. The list of frequency distributions of student learning effectiveness data is presented in Table 3.

Table 3

List of Data Frequency Distribution Effectiveness of student learning

Interval Class	X0	f	fiXi	Percentage (%)	Ci	fci
72 – 75	73.5	4	294	4.55	-3	-12
76 – 79	77.5	5	388	5.68	-2	-10
80 – 83	81.5	12	978	13.64	-1	-12
84 – 87	85.5	26	2223	29.55	0	0
88 – 91	89.5	21	1880	23.86	1	21
92 – 95	93.5	13	1216	14.77	2	26
96 – 99	97.5	7	683	7.95	3	21
<b>Total</b>		<b>88</b>	<b>7660</b>	<b>100</b>	<b>0</b>	<b>34</b>

Student Learning Effectiveness Data (Y)

The data in Table 3 shows that the frequency distribution of the student learning effectiveness variable data shows a symmetrical curve. This is indicated by the presence of median and modus values that are close to the mean. Table 4.2 also shows that 29.55% of respondents are in the mean column. The distribution of student learning effectiveness scores is shown in the diagram in Figure 1.

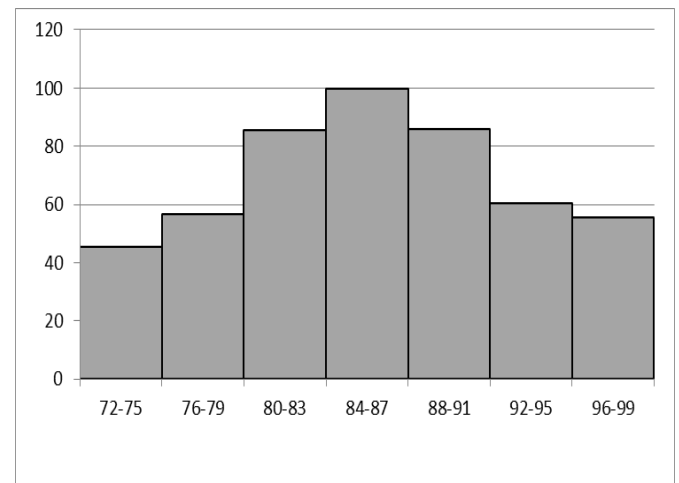


Figure 1. Histogram of Variable Data Distribution of Student Learning Effectiveness

Teacher Competence

Based on the results of the description analysis, it was found that the teacher competency variable had value of mean of  $\bar{X}_1 = 84,27$  with median (Me) = 84,36 and modus (Mo) = 83,38. Descriptive statistical processing of data in groups shows that the frequency distribution is obtained by 7 classes with a minimum score of 70 and a maximum score of 95, so the score range is 25. The list of frequency distributions of teacher competency data is presented in the following table:

Table 4.  
 List of teacher competency data frequency distribution

No	Interval	X0	Frekuensi (f)	Prosentase (%)	Ci	fci
1	70 – 73	71.5	4	4.55	-3	-12
2	74 – 77	75.5	8	9.09	-2	-16
3	78 – 81	79.5	12	13.64	-1	-12
4	82 – 85	83.5	28	31.82	0	0
5	86 – 89	87.5	20	22.73	1	20
6	90 – 93	91.5	11	12.50	2	22
7	94 – 97	95.5	5	5.68	3	15
<b>Total</b>			<b>88</b>	<b>100</b>	<b>0</b>	<b>17</b>

The data in Table 4 shows that the frequency distribution of the teacher competency variable data shows a symmetrical curve. This is indicated by the median and modus prices that are close to the mean. Table 4 also shows that 31.52% of respondents are in the average column.

The distribution of teacher competency scores is shown in the figure 2:

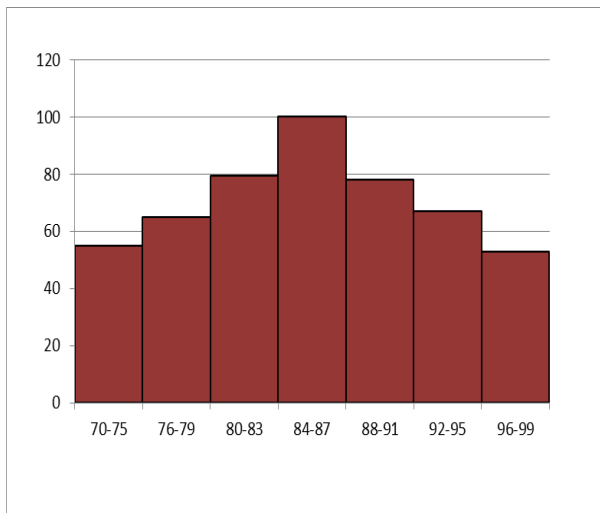


Figure 4.2. Histogram of Data Distribution of Teacher Competency Variables

### Online learning model

Based on the results of the description analysis, it was found that the online learning model variable had mean value of  $\bar{X}_2 = 86.05$  with median (Me) = 86,17, and modus (Mo) = 86,23. Descriptive statistical processing of data in groups shows that the frequency distribution is obtained by 7 classes with a minimum score of 72 and a maximum score of 99, so the score range is 27.

The list of frequency distributions for online learning model data is presented in Table 5.

Table 5.  
 List of Data Frequency Distribution Online learning model

Interval Class	X0	Frequency (f)	Percentage (%)	Ci	fci
<b>72 – 75</b>	73.5	5	5.68	-3	-15
<b>76 – 79</b>	77.5	9	10.23	-2	-18
<b>80 – 83</b>	81.5	12	13.64	-1	-12
<b>84 – 87</b>	85.5	27	30.68	0	0
<b>88 - 91</b>	89.5	20	22.73	1	20
<b>92 – 95</b>	93.5	8	9.09	2	16
<b>96 - 99</b>	97.5	7	7.95	3	21
<b>Total</b>		88	100	0	12

The data in Table 5 shows that the frequency distribution of the online learning model variable data shows a symmetrical curve. This is indicated by the median and modus prices that are close to the mean. In Table 5 it also appears that 30.68% of respondents are in the mean column.

The distribution of scores for the online learning model is shown in the diagram in Figure 3.

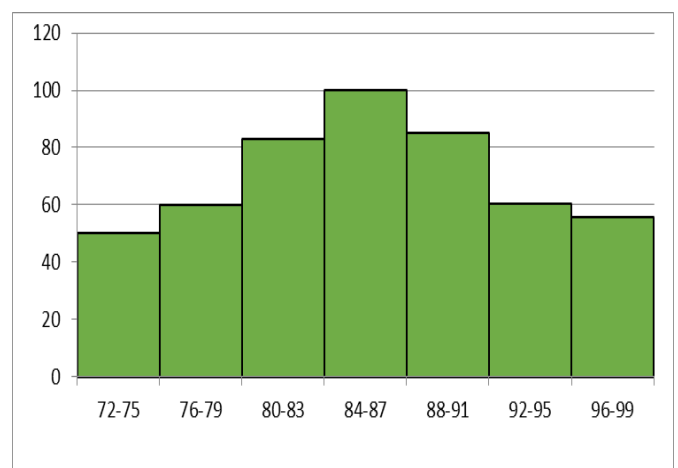


Figure 3. Histogram of Variable Data Distribution Online learning model

## Discussion

### The Effect of Teacher Competence on the Student Learning Effectiveness

The test results found that teacher competence had a direct positive effect on student learning effectiveness as indicated by the significant path coefficient value, namely  $\beta_{1.1} = 0.22$ ,  $t$  count = 2.46, and  $t$  table = 1.66. It turns out that the price of  $t$ count is greater than  $t$ table or  $2.46 > 1.66$ . Thus, the hypothesis proposed by the researcher that there is a direct positive effect of teacher competence on student learning effectiveness is accepted. This means that when there is an increase in student learning effectiveness as a result of increasing teacher competence; and vice versa if the effectiveness of student learning decreases it is caused by low teacher competence.

The result of this study strengthens the results of previous research conducted by Mulyasa (2013) which explains that the teacher is the most important component in the education system as a whole that must receive maximum attention. This figure will receive strategic attention when talking about education issues, because teachers are always associated with any component in the education system. Teachers have a very strategic role in efforts to realize national development goals, especially in the field of education, so they need to be developed as dignified and professional professionals.

This finding is also reinforced by other findings made by Dian Rosdiana, an Economics Teacher at Tasikmalaya City Senior High School with the title The effect of teacher competence and teaching commitment on the learning process and its implications for student learning outcomes in economics subjects. The results of this study indicate student learning outcomes, the learning process effectiveness, teacher competence and teaching commitment of senior high school Economics teachers in Tasikmalaya City are included in the high category, and there is an effect of teacher competence and teaching commitment on student learning outcomes and there is an indirect effect of teacher competence and teaching commitment on student learning outcomes through the learning process effectiveness. The results of this study indicate student learning outcomes, the learning process effectiveness, teacher competence and teaching commitment of senior high school Economics teachers in Tasikmalaya City are included in the high category, and there is an influence of teacher competence and teaching commitment on student learning outcomes and there is an indirect effect of teacher competence and teaching commitment on student learning outcomes through the learning process effectiveness.

Thus, it can be concluded that the research findings which state that teacher competence has a direct positive effect on the student learning effectiveness.

### The Effect of Online Learning Models on Student Learning Effectiveness

The results of hypothesis test indicate that there is a direct positive effect of the online learning model on the student learning effectiveness which is indicated by a

significant path coefficient value, namely  $\beta_{2.2} = 0.30$ ,  $t$  count = 3.21 and  $t$  table = 1.66. It turns out that the value of  $t$ -count is greater than  $t$ -table or  $3.21 > 1.66$ . Thus, the hypothesis proposed by the researcher that there is a direct positive effect of the online learning model on the student learning effectiveness is accepted.

This finding is in line with the results of previous research by Mawar Ramadhani with the title of the researcher is The effectiveness of the use of WEB-based E-Learning learning media Information and Communication Technology lessons on the learning outcomes of class X students of State High School I Kalasan. The results showed that the effectiveness of web-based E-Learning media was included in the medium criteria, with a normalized gain index of 0.54, the effectiveness of conventional learning media was included in the medium criteria, with a normalized gain index of 0.30 and the increase in learning outcomes with E-Learning media was better than the improvement of learning outcomes of conventional learning media on material for Class X Presentation Maker Software at State Senior High School 1 Kalasan. Based on the results of the  $t$  test of the mean value of learning outcomes obtained  $t$  count  $>$   $t$  table ( $2.870 > 1.672$ ), and the significance value ( $P$ ) is  $0.006 < \alpha$  (0.05), thus  $H_0$  is rejected and  $H_a$  is accepted. This proves that the web-based E-Learning learning media is effective in improving student learning outcomes in the material for Presentation Maker Software for Class X State Senior High School 1 Kalasan.

### The Effect of Teacher Competence, Online Learning Model on the Student Learning Effectiveness.

The results of hypothesis test indicate that there is a direct positive effect of teacher competence, online learning models on the student learning effectiveness, which is indicated by a significant path coefficient value,  $\beta_{3.3} = 0.38$ ,  $t$  count = 4.26 and  $t$  table = 1.66. Thus, the hypothesis proposed by the researcher that there is a direct positive effect of teacher competence, online learning models on the student learning effectiveness is accepted. From the results of the hypothesis test, it can be interpreted that the better the teacher's competence, the online learning model, the better the results of student learning effectiveness.

The findings of this study are in line with the results of previous research conducted by Bahana (2020) The results of the study show that teacher competence plays a role in increasing the online learning effectiveness. Both pedagogic, personal, professional, and social competencies all have a stake in the implementation of online education. Research findings indicate that this role is reflected in the form of management that has been carried out by teachers in online learning. There is the development of student learning techniques that were initially fully online into a combination (personal tutoring, visiting teachers, visiting students, and assignments). That development will not be realized if the teacher concerned does not have good competence. Personal Competence; Professional Competence; Based on the results of the analysis, that learning technique is more effective than previous online learning, it can be seen from the student's



enthusiasm for learning which has increased. In this case, it is important for teachers to develop teacher competence which is a foundation for realizing quality education.

The increasing competence of teachers will have an impact on the desire of teachers to increase the student learning effectiveness. A high level Teacher competence will make it easier for teachers to carry out their profession significantly, especially those related to services to their students in learning at school. A teacher who understands the online learning model will be reflected in his attitude and daily behavior at school who is always creative and innovating in maintaining the effectiveness and efficiency of his work through optimal services, improving the quality of learning. The use of learning media in the teaching and learning process is one of the efforts to improve the effectiveness and quality of the learning process which in turn can improve the quality of student learning outcomes. The use of learning media in the teaching and learning process has several benefits including: (1) Teaching will attract more students' attention so that it can foster student learning motivation, (2) Teaching materials will be clearer so that students can understand and master the objectives of teaching well, (3) Teaching methods will be more varied, (4) Students will interact more in learning activities because they do not only listen to the teacher's explanations but also other activities such as observing, demonstrating and others. As stated by Keengwe & Georgina in their research has stated that technological developments provide changes to the implementation of teaching and learning (Keengwe & Georgina, 2012). Information technology can be accepted as a medium in carrying out the educational process, include helping the teaching and learning process, which also involves finding references and sources of information (Wekke & Hamid, 2013).

#### IV. CONCLUSION

Based on the result and discussion of the research that has been done, the following conclusions and suggestions can be drawn:

There is a direct positive and significant effect of teacher competence on the student learning effectiveness in State Junior High Schools in Telaga District, Gorontalo Regency.

There is a direct positive and significant effect of the online learning model on the student learning effectiveness in State Junior High Schools in Telaga District, Gorontalo Regency

There is a joint and significant effect of teacher competence, online learning models on the student learning effectiveness in State Junior High Schools in Telaga District, Gorontalo Regency.

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