



The Quality of E-Learning Based on Learning Media Using Moodle LMS on Text of Observation Reports of Grade 10th Students of Vocational School Telkom Shandy Putra Medan

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Abstract: *The aims of this study to find out the quality of E-learning based on learning media using Moodle LMS on text of observation. This type of research is development research in the field of education known as Research and Development (R&D). Development research (development research) is research that is used to produce certain products and test the effectiveness of these products (Tegeh and I.M, 2013). The result of this study show that The quality of e-learning based learning media using LMS Moodle which was developed as a learning media on the observation report text material is stated to be a useful and effective contribution in improving the quality of learning outcomes of 10th grade TJA1 Vocational School Telkom Shandy Putra Medan. This is because there is a significant difference in the learning outcomes of the average value of students before using e-learning based learning media (pre-test) ie 57.0 or only about 52% are able to exceed KKM and after using e-based learning media learning using LMS Moodle (post-test) the average value of students increased to 77.0% or can be interpreted as 100% of students able to exceed the KKM. Based on these data the difference is increased by 20% or can be interpreted student learning outcomes increased by 58%.*

Keyword: *E-learning; learning media; moodle LMS*

I. Introduction

Education is a very important aspect of life in its role in fostering, shaping and developing high quality human resources. Improving the quality of education is a process that cannot be separated from the process of improving the quality of human resources themselves. Education is the main key to the success of a nation in competing on a global level. Thus, education becomes the centre of attention that causes the Indonesian government to always emphasize a careful response to the decline of education starting from the elementary level, secondary level, until the level of higher education.

Technological developments also play a role in encouraging progress in the field of education in order to improve intelligence, skills, enhance character, strengthen personality, and create the generation responsible for development. In line with the objectives of national education contained in Law no. 20 of 2003, namely developing the potential of students to become human beings who believe and devote to God Almighty; noble, healthy, knowledgeable, capable, creative, independent and be a democratic and responsible citizen.

Media and technology function as intermediaries between resource persons and learners, resource persons - writers, academics, and researchers - pour their knowledge and knowledge into a form of media that can be learned by Monday. As for media users - students, readers, and users of library services - utilize media to obtain information and knowledge needed. A variety of media can be used for learning purposes in gaining knowledge of skills and attitudes and can be needed to carry out the learning process. (Sitorus, 2020).

The level of secondary education is transformed by various kinds of knowledge that can be used as provisions for students to develop the potential for creativity and sharpen the sensitivity of students' feelings that exist in them. One of them is the teaching of Indonesian which aims to make students skilled in speaking well in listening, speaking, reading and writing. This goal is in line with what was stated in the 2013 curriculum that teaching Indonesian is no longer based on students' cognitive abilities (knowledge), but rather affective abilities (attitudes) and psychomotor skills (skills).

Text-based Indonesian learning is the main feature of Indonesian language learning according to the 2013 Curriculum. What is meant by text-based Indonesian learning is the learning process carried out by students who start from the understanding that language is seen as context-bound text, not just as a collection of words or rules of language. Text is the largest or most complete linguistic unit that is united by certain themes which are provided as oral and written texts. One of the texts taught at the high school level is the text of the observation report, which is contained in the 10th grade syllabus of the SMA / MA / SMK level in the 2013 Curriculum which includes sub-studies on the basic competencies points 3.1-3.4 namely understanding, comparing, analyzing, identifying and evaluating the text of the observation report both verbally and in writing and sub-study on the basic competencies in points 4.1-4.5, namely interpreting, producing, editing, abstracting, and converting the text of the report of observations both verbally and in writing.

II. Review of Literature

2.1 Learning Media

The teaching and learning process has two very important elements, which are teaching methods and learning media. These two aspects are interrelated. Learning media is one component of the teaching system which is the dominant factor to support the success of the teaching and learning process. Learning media are used to facilitate teachers in delivering subject matter so that students more easily understand the subject matter.

The word media comes from the Latin *medius* which literally means middle, intermediary or introduction (Arsyad, 2017: 3). In Arabic, the media is wasail which means an intermediary or introduction to the message from the sender to the recipient of the message (Arsyad, 2017: 3). According to Susilana (2017: 7) states that learning media is a container of messages, the material to be conveyed is a learning message, and the goal to be achieved is the learning process. Meanwhile, the Association of Education and Communication Technology (AECT) states that learning media are all forms and channels that people use to channel messages / information (Arsyad, 2017: 3). In line with this, Criticos in Daryanto (2016: 4) states that the media is one component of communication, namely as a messenger from communicator to communicant.

Based on the opinion of the experts above, the researcher concludes that learning media are all things in the form of objects or tools that are used as intermediaries and channeling messages (information) by the teacher to support the success of the learning process and stimulate, influence, feelings and interests of students to achieve goals in study.

2.2 Development of E-Learning Learning Media Using Moodle

Learning using learning media based on e-learning has interactive properties as mass and interpersonal media, and a repository of information. E-learning based learning provides more than access and provides quality information that is not the same as traditional learning.

Website-based learning can combine broader information, of course by combining existing content with website information sources (Jas, Media, and Nilawasti, 2012).

E-learning based Indonesian learning can be developed using Moodle. According to Gadsdon in Basuki (2015: 44), explaining Moodle is an open source software package used to create internet-based learning materials and courses. Moodle is freely available under the open source GNU Public. As such, Moodle is copyrighted, but users have the right to copy, use, and modify source code provided they agree to provide modified sources for others, do not delete or change original licenses and copyrights, and apply the same license to each derivative works.

2.3 Definition of Observation Report Text

Text is a complete expression of the human mind in which there are situations and contexts. In the text contains implied meanings, so anyone who reads the text will interpret the purpose of the text. The text has the purpose of providing information for the reader. One type is the observation text.

Kosasih (2014: 43) stated that the text of the observation report is a text that states the facts obtained through observation. With the text, the reader gains a certain amount of knowledge or insight, not the result of imagination. Facts from observations will be clearer and more interesting if accompanied by pictures in the form of tables, graphs, or charts. Mills in Wijaya (2016) states that observation is a planned and focused activity to see and record a series of behaviors or the course of a system that has a specific purpose, and reveal what is behind the emergence of the behavior and foundation of a system.

Observations must be planned according to the opinion above. Without a plan, the observation will not succeed. Observation must also be based on the basis of a system, because with these two references, the observation activities will be carried out properly. Education in Wijaya (2016) explains that the text of the report is often considered the same as the description text. Actually, the report text and description text are different. The most striking difference between the two lies in its nature, namely that the report text is global and universal, while the description text is unique and individual.

Based on the description above, the author can conclude that the text of the observation report is the text of the report made by students to the observation of an object that can be seen, so that it can be recorded and the validity of the data can be proven clearly in public and the scope of the study or observed must be true. True certainly must not change to determine the success of these observations.

III. Research Methods

This type of research is development research in the field of education known as Research and Development (R&D). Development research (development research) is research that is used to produce certain products and test the effectiveness of these products (Tegeh and I.M, 2013). The development model used in this study is a modification of the ADDIE model. The ADDIE model was developed by Reiser and Mollenda in 1990 (Syahriah, 2016). One of its functions is ADDIE, which is to be a guideline in building effective training tools and infrastructure and programs that support the performance of the training itself.

III. Results and Discussion

Learning is a process of communication in the classroom between teachers and students. Effective learning is learning that provides self-learning opportunities or can carry out activities as widely as possible for students to learn. Learning media that have been developed aim to improve the quality of student learning and can measure the extent of the achievement of student learning outcomes to the text of the observation report using e-learning learning media using Moodle LMS.

The form of learning outcomes tests used is a multiple choice test (arranged with five answer choices namely a, b, c, d and e) and an essay test. Students are given a pre-test to determine the students' initial abilities and afterwards are given a post-test to assess the improvement in the results (quality) of learning using e-learning-based learning media. The first test is to do a pre-test evaluation test by giving questions to students about the text of the observation report. Pre-test was conducted in 10th grade TJA1 with 31 students. Pre-test is an evaluation to students by not giving material to students in order to find out the students' initial ability to the material to be delivered. Data from the pre-test results can be seen in the table below.

Table 1. Pre-Test Value Test Data Results

No.	Student's name	KKM	Score	Predicate
1	Alzidane paundra rafilano	60	60	Graduated
2	Armieza syafitrie sadi	60	58	Ungraduated
3	Cynthia sola dianindah damanik	60	53	Ungraduated
4	Destia ary sandi tarigan	60	69	Graduated
5	Dicky galuh riyadi	60	36	Ungraduated
6	Divani atmalia	60	62	Graduated
7	Evita 691riteria691 zeffanya. P	60	63	Graduated
8	Fadhil athaya	60	69	Graduated
9	Fathir adli ahmad arrifqi	60	61	Graduated
10	Ferdi maulana batubara	60	52	Ungraduated
11	Fransiska hirim m.samosir	60	63	Graduated
12	Ibrena karina br. Bangun	60	61	Graduated
13	Java heca sashini	60	36	Ungraduated
14	Lois firmansae saragih	60	57	Ungraduated
15	Mary chaterine bangun	60	70	Graduated
16	Meyrani hasibuan	60	70	Graduated
17	Michael ginta ginting	60	52	Ungraduated
18	Moch. Azky milza	60	54	Ungraduated
19	Muhammad afdal irfangga	60	48	Ungraduated
20	Muhammad akbar rafli	60	61	Graduated
21	Muhammad farhan	60	46	Ungraduated
22	Muhammad ravandi	60	61	Graduated
23	Nayla nabila	60	68	Graduated
24	Nobel 691riteri muhen gurning	60	63	Graduated
25	Radika satrio dwi pasena	60	51	Ungraduated

26	Rafif syahputra pasaribu	60	58	Ungraduated
27	Sepri liasta kaban	60	45	Ungraduated
28	Shopie maharani	60	70	Graduated
29	Sri fadilla	60	46	Ungraduated
30	Venny herita	60	59	Ungraduated
31	Wira santya utami	60	63	Graduated
Total			1777	
Average			57	

Based on the acquisition of the pre-test scores above, the number of students who are able to get the title of graduation with a minimum KKM of 60 is only 16 students from a total of 31 students. If calculated using a percentage is 52% of students who are able to meet the graduation criteria based on KKM. Learning outcomes before using learning media based on e-learning gained an average score of 57% with the assessment criteria "Medium" meaning the value achieved by students in the learning material of the text of the observation report needs to be improved. The frequency distribution of pre-test scores of student learning outcomes before using learning media based on e-learning using LMS Moodle on the observation report text material can be seen in the table below.

Table 2. Frequency Distribution of Pre-Test Values

No.	Interval	Frequency	Percentage
1	36-40	1	3.2
2	41-45	1	3.2
3	46-50	3	9.7
4	51-55	5	16.1
5	56-60	5	16.1
6	61-65	10	32.3
7	66-70	6	19.4
Total		31	100

The table above shows that students who have a range of grades from 36 to 40 are 1 person or 3.2%, students who have a range of grades 41-45 are 1 person or amounting to 3.2%, students who have a range of grades from 46 to 50 are 3 people or 9.7%, students who received a range of grades 51-55 amounted to 5 people or amounted to 16.1%, students who received a range of grades 56-60 amounted to 5 people or amounted to 16.1%, students who received a range of grades 61-65 totaled 10 people or 32.3%, and students who received a range of grades 66-70 totaled 6 people or 19.4%. The total number of students is 31 students.

Post-test is done after the e-learning based learning media using LMS Moodle has been used in learning. Evaluation of the post-test questions is the same as the pre-test questions. It is used to measure improvement in students' abilities after studying the material. The data obtained after conducting the post-test is that students are more able to improve their abilities after learning material from e-learning. Data from the post-test results can be seen in the table below.

Table 3. Post Test Test Value Data

No.	Student's name	KKM	Score	Predicate
1	Alzidane paundra rafliano	60	71	Graduated
2	Armieza syafitrie sadi	60	81	Graduated
3	Cynthia sola dianindah damanik	60	76	Graduated
4	Destia ary sandi tarigan	60	76	Graduated
5	Dicky galuh riyadi	60	71	Graduated
6	Divani atmalia	60	71	Graduated
7	Evita 693riteria693 zeffanya. P	60	85	Graduated
8	Fadhil athaya	60	85	Graduated
9	Fathir adli ahmad arrifqi	60	81	Graduated
10	Ferdi Maulana batubara	60	71	Graduated
11	Fransiska hirim m.samosir	60	73	Graduated
12	Ibrena karina br. Bangun	60	73	Graduated
13	Java heca sashini	60	73	Graduated
14	Lois firmansae saragih	60	76	Graduated
15	Mary chaterine bangun	60	72	Graduated
16	Meyrani hasibuan	60	88	Graduated
17	Michael ginta ginting	60	80	Graduated
18	Moch. Azky milza	60	75	Graduated
19	Muhammad afdal irfangga	60	76	Graduated
20	Muhammad akbar rafli	60	76	Graduated
21	Muhammad farhan	60	72	Graduated
22	Muhammad ravandi	60	72	Graduated
23	Nayla nabila	60	73	Graduated
24	Nobel 693riteri muhen gurning	60	73	Graduated
25	Radika satrio dwi pasena	60	75	Graduated
26	Rafif syahputra pasaribu	60	80	Graduated
27	Sepri liasta kaban	60	80	Graduated
28	Shopie maharani	60	85	Graduated
29	Sri fadilla	60	80	Graduated
30	Venny herita	60	83	Graduated
31	Wira santya utami	60	85	Graduated
	Total		2381	
	Average		77	

Based on the acquisition of the post-test scores listed in table 4.21, after studying the material from e-learning, the number of students who are able to get the minimum mark of graduation with a minimum KKM of 60 are all students. If calculated using a percentage is 100% of students who are able to fulfill the graduation criteria based on KKM. Learning outcomes after using e-learning based learning media obtained an average score of 77% with “good” assessment criteria, meaning that the scores achieved by students in the learning text material of the observation report are good and can achieve expectations. Implementation most of the students have been able to operate the criteria for accessing e-learning even

though there are some students who have not criteria and are still asking questions but overall these obstacles can be overcome.

The frequency distribution of post-test scores of student learning outcomes after using e-learning based learning media using MMS LMS on the observation report text material can be seen in the table below.

Table 4. Posttest Value Frequency Distribution

No.	Interval	Frequency	Percentage
1	71-75	14	45.2
2	76-80	9	29
3	81-85	7	23
4	86-90	1	3.2
5	91-95	0	0.0
6	96-100	0	0.0
7	101-105	0	0.0
Total		31	100

The table above shows that students who scored 71-75 totaled 14 people or 45.2%, students who scored 76-80 totaled 9 people or 29%, students who scored 81-85 totaled 7 people or 23 %, students who scored 86-90 totaled 11 people or 3.2%, there were no students who received a range of 91-95 or 0.0%, there were no students who had scored 96-100 or 0.0%, and there are no students who have a range of 101-105 or 0.0%, so the total number of students is 31.

After students get learning that uses e-learning based learning media using LMS Moodle on observational report text material, student learning outcomes before and after using e-learning based learning media have increased significantly, namely 20.0. It is known that the average score of students before (pretest) using e-learning based learning media is 57.0 and the average post-test score is 77.0. The following table below results from the Pre-Test and Post-test scores.

Table 5. Data Difference Results Test Results Pre-Test and Post-Test

No.	Group	Average Score	Difference
1	Before (Pre-Test)	57	20
2	After (Post-Test)	77	

The table above shows that after analyzing it can be seen the results of increasing student scores from the average value obtained increased from the pre-test score of 57.0 in "medium" criteria to 77.0 in "good" criteria for post-test scores and differences the difference between the pre-test and post-test values is 20.0. The results of competency achievement show satisfactory results seen from the development of understanding by students of 10th grade TJA1 Telkom Vocational School Shandy Putra Medan. Thus, it can be concluded that learning media based on e-learning using LMS Moodle on observational report text material can improve student learning outcomes in Indonesian subjects. For clarity, the results of empirically obtained data can be seen in the diagram below.

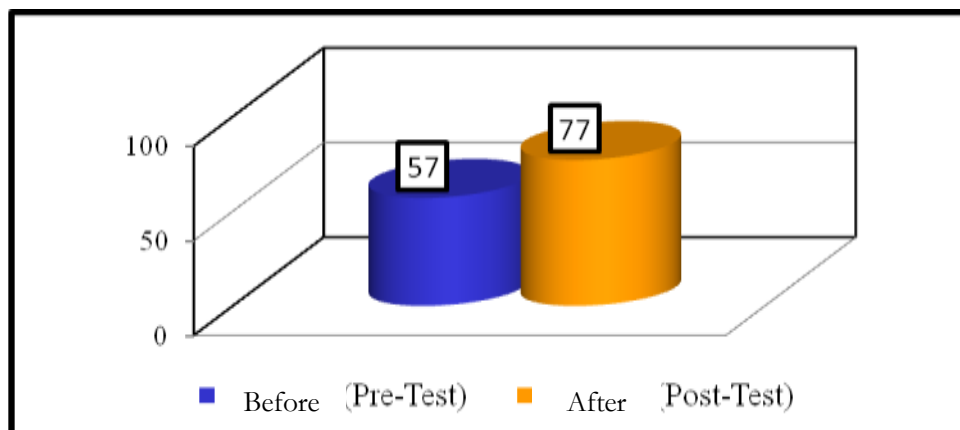


Figure 1 Average Pre-Test and Post-Test Average Learning Media Based on E-Learning Using Moodle LMS on Observation Report Text

Based on the picture above, it can be concluded that e-learning based learning using LMS Moodle in the observation report text material can improve student learning outcomes in Indonesian subjects and overall they like learning independently using e-learning and find it helpful in learning. Furthermore, the percentage of the quality of learning media based on e-learning is obtained in the following ways:

$$\text{Percentage of Quality} = (\text{Observation score}) / (\text{Expected score}) \times 100\%$$

$$\text{Percentage of Quality} = 3535 / ((4 \times 31) \times 34)$$

$$\text{Percentage of Quality} = 3535/4216$$

$$\text{Percentage of Quality} = 84\%$$

Based on the above calculation, it can be concluded that the e-learning based learning media is stated to have a 84% quality percentage in the "Very Good" category after it is used by students in learning Indonesian subjects the text of the observation report. The category of "very good" can be interpreted that the e-learning based learning media developed have very good and effective qualities to improve student learning outcomes and get positive responses from students who use them.

The results of research and development of learning media based on e-learning using Moodle LMS on observational report text material is proven to improve the quality of student learning, meaning that the products produced are effective in improving student learning outcomes. This is in line according to the Ministry of National Education (2004: 7) states that improving the quality of learning in terms of learning media can be seen from how effectively learning media is used by teachers to increase the intensity of learning. This opinion is in line with the thought of Sugiono (2012: 157) states that research and development (Research and Development) is a research method used to produce certain products and test the effectiveness of these products. The product produced in this research and development is in the form of e-learning based learning media using LMS Moodle on the observation report text.

Testing the quality of student learning outcomes in this media using test instruments. Tests were conducted using pre-test and post-test in 10th TJA1 with 31 students of Vocational School Telkom Shandy Putra Medan. Pre-test and post-test given to students before and after using e-learning based learning media using Moodle LMS. Analysis of differences in average student learning outcomes using data on student pre-test scores with the results of students'

post-test scores increased significantly after using e-learning-based learning media using Moodle LMS. Aids in the process of data analysis using the help of Microsoft Excel software, analysis of differences in learning outcomes known from the average student before using e-learning-based learning media (pre-test) that is 57.0% or only about 52% who score beyond KKM and after using e-learning based learning media using LMS Moodle (post-test) the average value of students increased to 77.0% or can be interpreted as 100% of students able to exceed KKM. Based on these data there is a significant difference to the learning outcomes before and after students use e-learning and the achievement data of student learning outcomes obtained a significant difference between 20 or can be interpreted student learning outcomes increased by 58%.

The results of the above research are relevant to the results of research conducted by Desy Rahmayanti Hasibuan who examines the Effect of Web-Based Interactive Learning on Carbohydrate Metabolism Material on Student Motivation and Independence Learning'. The results obtained from the 45.16% motivation questionnaire were in the high category, learning independence 32.26% were in the high category, and student responses to web-based learning were 51.61% in the high category. While from the learning outcomes the average pretest scores were 30.90 and post-test 84.41, the MFI's average assignment score was 78.60, the average CBR was 89.19, the average CJR was 80.65, the average formative value was 87.78. Based on the research results obtained that Web-based learning is very interactive and has a positive effect on student motivation and learning independence. In line with the results of research conducted by Wardimansyah Ridwan shows that the assessment of the development of learning media based on e-learning concluded that the learning media based on e-learning is very practical and very effective as evidenced by the provision of pre-test and post-test with the average results of the assessment on the pre-test is 4.6, while the post-test is 9.2. Then, the results of research conducted by developing media, namely Ahmad Rizal Nurul K, Sapto Haryoko, and Muhammad Yahya show that students who are taught using web-based interactive media are higher than the learning outcomes taught without using interactive web-based learning media in the eyes manual arc welding lessons at the Vocational High School. In addition, the results of research conducted by Batara Ristanto shows the effectiveness of e-learning learning media can be categorized effectively used for learning. This is because there are significant differences in student pre-test learning outcomes before getting treatment (treatment) with student learning outcomes post-test after getting treatment (treatment) with student learning outcomes using e-learning media. The increase in the number of students who passed a minimum of 65 in the pre-test was 3 students (12%) and in the post-test were 20 students (80%).

The effectiveness of the use of e-learning learning media using LMS Moodle can be seen from the increase in students' post-test learning outcomes after using the media has increased and can be seen by an increase in the achievement of student competencies. The effectiveness is inseparable from the learning process that is going well and in accordance with the expectations and advantages possessed by e-learning based learning media using Moodle LMS. The first advantage, based on the results of research conducted while learning in class students can play a more active role in gaining the opportunity to build their own knowledge so as to obtain good understanding. Second, this learning media can provide more varied learning processes such as demonstrating the results of learning practices. Third, the increase in learning outcomes achieved due to an atmosphere conducive to learning. Fourth, students are more enthusiastic about learning than using conventional media, especially on material that is always teacher-centered. Fifth, this learning media contains pictures and videos that will make students more interested and motivated in independent learning. Sixth, this learning

media product can be accessed anywhere and anytime while connected to the internet, making it easier for students in the access process.

Thus, all the above explanations show that e-learning based learning media using Moodle LMS developed as learning media on observational report text material provides a useful and effective contribution in improving the quality of student learning outcomes in 10th grade TJA1 Vocational School Telkom Shandy Putra Medan.

V. Conclusion

The procedure for developing learning media based on e-learning using LMS Moodle in the text of the observational report made was adapted from the ADDIE Research and Development method. There are 4 stages, namely the analysis phase, the design and development stage, the implementation phase, and the evaluation stage. The first stage, the analysis phase is carried out assessment and front-end analysis to teachers and students. The results of the needs analysis of the data obtained 100% of teachers and students need learning media that is easy and interesting, especially in the text material of the observation report. The second stage, the design and development of media is carried out by compiling material in accordance with the 2013 curriculum which has been designed in the form of e-learning based learning media using Moodle LMS. After the design and development of the learning media have been designed, then this learning media is validated by 2 material expert validator lecturers, 1 design expert validator lecturer, and 1 instructor media validator lecturer. Next, an assessment conducted by an Indonesian language teacher of the media developed. After that, the small group trial is the initial product test conducted to the user, namely students of 10th grade TJA2 totaling 9 students. Then, the next step is to revise the developed media products based on the assessment results collected. The third stage, to implement the feasibility test of learning media for 10th grade TJA1 students of Telkom Shandy Putra Medan, Medan City, amounting to 31 people. The final stage is evaluating the overall activities that have been carried out to assess the feasibility and assess student learning outcomes using e-learning based learning that has been developed.

Testing the feasibility of the developed learning media is carried out by material experts, design experts, media experts, Indonesian language teachers, and students. E-learning based learning media using Moodle LMS on the observation report text material is declared feasible and can be used in the Indonesian language learning process. In line with the assessment results obtained by 2 lecturers of material expert validators with an average of 97.2% in the "very good" category, obtained by the results of an assessment by 1 design expert validator lecturer with an average of 97.5% in the "very good" category, and the results obtained by 1 lecturer validator of media experts with an average of 78% in the "good" category. The results of an assessment conducted by one Indonesian language teacher that is 91.3% in the "very good" category. The results of students' responses to the small group test that is 82.11% in the "very good" category, and then the product revision in accordance with suggestions and input. After that, the implementation phase, namely limited field testing, was obtained an average of 84% in the "very good" category.

The quality of e-learning based learning media using LMS Moodle which was developed as a learning media on the observation report text material is stated to be a useful and effective contribution in improving the quality of learning outcomes of class X TJA1 SMK Telkom Shandy Putra Medan. This is because there is a significant difference in the learning outcomes of the average value of students before using e-learning based learning media (pre-test) ie 57.0 or only about 52% are able to exceed KKM and after using e-based

learning media learning using LMS Moodle (post-test) the average value of students increased to 77.0% or can be interpreted as 100% of students able to exceed the KKM. Based on these data the difference is increased by 20% or can be interpreted student learning outcomes increased by 58%.

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