



DEVELOPMENT OF MOODLE-BASED E-LEARNING PLATFORM IN 2 DIMENSIONAL AND 3 DIMENSIONAL ANIMATION LESSONS AT 10 BUNGO STATE VOCATIONAL SCHOOL

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Abstract

At SMK Negeri 10 Bungo, there are several problems in the learning process, namely the teacher has difficulty delivering 2-dimensional and 3-dimensional animation subjects without supporting media. with his friend. The purpose of this research is to produce a moodle-based e-learning platform as a learning medium for 2-dimensional and 3-dimensional animation subjects and to determine the level of validity and practicality of moodle-based e-learning. The method used in this research is a type of development research. Development research has the goal of developing a new product or improving an existing product. This study uses research and development methods (Research and Development R&D) which is a research method that aims to produce certain products and test the validation and effectiveness of these products in their application. Moodle-Based e-learning platform development on 2D and 3D animation subjects Test the Validity of the Moodle-based E-learning Platform at SMK Negeri 10 Bungo, stating that the Moodle-based E-learning Platform is valid, namely the media validity is 0.866% and the material validity is 0.851%. Practical Test of the Moodle-based E-learning Platform at SMK Negeri 10 Bungo, stated that the Moodle-based E-Learning Platform was practical, namely the practicality of teachers 75.56% and student practicality 83,629%.

Keywords: E-learning platform, Moodle



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Introduction

The educational process is inseparable from what is called learning. Learning is essentially a process, namely the process of regulating, organizing the environment around students so that they can grow and encourage students to carry out the learning process. Learning is also said to be a process of providing guidance or assistance to students in the learning process. The original role of the teacher as a mentor departs from the number of students who have problems. In learning, of course, there are many differences, such as there are students who are able to digest the subject matter, there are also students who are slow in digesting the subject matter. These two differences have resulted in the teacher being able to regulate the art of management in learning according to the circumstances of each student.

The learning media are tools, methods, and techniques used in order to make communication and interaction between teachers and students more effective in the process of education and teaching in schools. Along with the times, information and communication technology in the current era of globalization has become a basic need in supporting education. "Information and Communication Technology-based education is a means of interaction that can be used by educators, education staff, and students in improving the effectiveness, quality, productivity, and access to education"

Utilization of information and communication technology in the field of education has given birth to an electronic learning model known as e-learning. E-learning which stands for electronic learning means

learning using the help of electronic devices, especially computer devices. In its development, e-learning is also known as online course, online learning, internet-enabled learning, virtual learning or web based learning.

E-learning is a type of teaching and learning that allows the delivery of teaching materials to students using the internet, or other computer network media. E-Learning allows the learning process to occur without going through face-to-face meetings and the development of knowledge to students can be done easily. According to Suartama Kadek & Tastra, Dewa Kade (2014: 43) Moodle is a name for an application program that can convert a learning media into a web form. Moodle is provided free of charge as open source software under the GNU Public License, which means that even though it has copyright, Moodle still provides freedom for users to copy, use, and modify it. The user must agree to provide the original source code to other parties,

2-dimensional and 3-dimensional animation is one of the subjects in class XI Multimedia at SMK Negeri 10 Bungo. Based on the observations that the author made at SMK Negeri 10 Bungo, there were several problems in the learning process, namely (1) teachers had difficulty delivering 2-dimensional and 3-dimensional animation subjects without supporting media, (2) after learning lasted long enough some students started not focus on learning and do not pay attention to the teacher who is teaching by chatting with his friends. In addition to observation, learning problems obtained through interviews are (1) the use of the lecture method and using only power point slides without using a variety of other methods can make students feel bored,

Based on these observations, a basic analysis is drawn that the learning process at SMK Negeri 10 Bungo, especially class XI Multimedia is less than optimal. This is due to the lack of utilization of existing learning facilities in schools, such as the use of infrastructure in the form of a computer laboratory complete with internet and internet connections that can actually support the learning process. Therefore, it is necessary to strive for learning breakthroughs that are shown to improve student learning outcomes through the creation of learning media that have integration with existing learning facilities. In addition, the design of interesting learning media can also motivate students to use the media.

One of the media that is suitable and meets the three criteria is Moodle-based e-learning learning media. Moodle-based e-learning is a web-based media that utilizes a Learning Management System (LMS) which can be downloaded and installed for free. Web-based learning media according to students' conditions, where currently it is rare to find students who have never opened the web so that web-based media is not something new. The criteria for teaching materials to be presented are also suitable when displayed in web media because web-based media can accommodate teaching materials in the form of text, images, and videos. On the criteria for the utilization of available facilities.

Method

A. Research Time and Place

This research is a type of development research. Development research has the goal of developing a new product or improving an existing product. This research uses research and development (R&D) methods. Study

This research is a type of development research. Development research has the goal of developing a new product or improving an existing product. This research uses research and development (R&D) methods. is a research method that aims to produce certain products and test the validation and effectiveness of these products in their application. Development research is a systematic study of how to design a product, develop or produce the design, evaluate the performance of the product, with the aim of obtaining empirical data that can be used as a basis for making products, tools and models that can be used in learning. or non-learning (Sugiyono,2019:395)

Research and development methods can be interpreted as a scientific way to research, design, produce and test the validation of products that have been produced. Based on this understanding, research and development activities can be shortened to 4P (Research, Design, Production and Testing) (Sugiyono, 2019: 396).

B. Research design

This research is a type of development research. Development research has the goal of developing a new product or improving an existing product. This research uses research and development (R&D) methods. is a research method that aims to produce certain products and test the validation and effectiveness of these products in their application. Development research is a systematic study of how to design a product, develop or produce the design, evaluate the performance of the product, with the aim of obtaining empirical data that can be used as a basis for making products, tools and models that can be used in C. .Operational Definition

The operational definitions of research are:

1. Media is a facility or infrastructure used to convey something in the learning process in the classroom.
2. *E-Learning* is the process and application of web-based learning (web-based learning), computer-based learning (laptop-based learning), virtual classes (virtual classrooms).
3. *Moodle* is a web-based service that provides assistance in online learning activities.
4. Moodle-based E-Learning learning media is a tool that can be accessed via a Smartphone connected to the internet network for the delivery of learning materials in the teaching and learning process which is done online.

C. Research subject

Research subjects are informants which means people in the research setting who are used to provide information about the situation and condition of the research setting.

D. Instruments and Data Collection Techniques

In this study used data collection techniques in the form of a questionnaire (questionnaire), a questionnaire containing a list of questions. Questionnaire is a data collection technique used to provide questions to get answers from respondents.

The questionnaire instrument used in the validity test and validity test was asked to be suitable for use by supervisor 1, after following the improvements suggested by supervisor 1, proceed to supervisor 2, after being valid the instrument was used to measure the validity of the learning media. Meanwhile, to test this practicality, it will be validated by supervisor 1 and supervisor 2, if it is valid then it is given to teachers and students.

E. Data collection technique

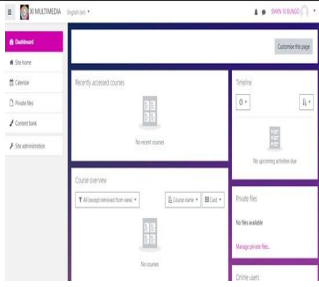
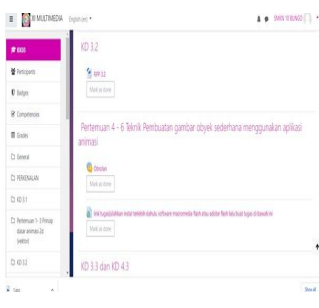
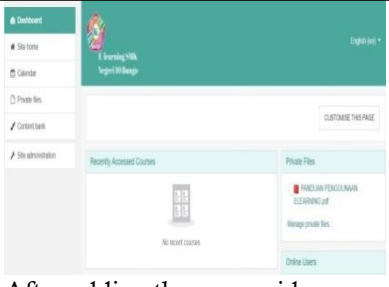
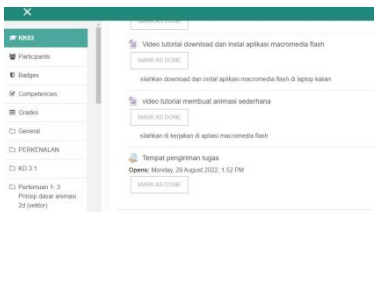
In this study, reliable data sources and appropriate techniques are needed to obtain the data set. Questionnaire (questionnaire) is a data collection technique by providing or distributing a list of questions to respondents in the hope of providing a response or list of questions.

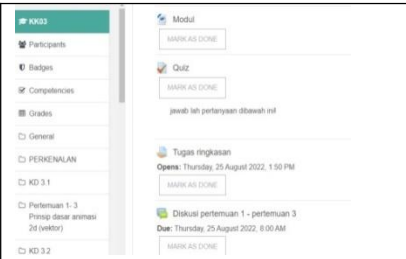
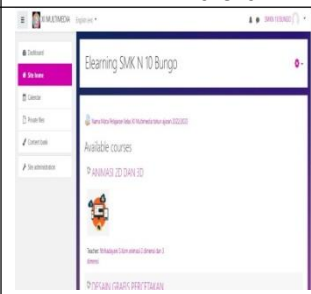
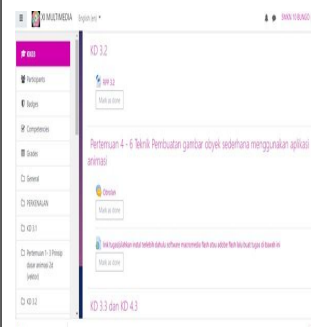
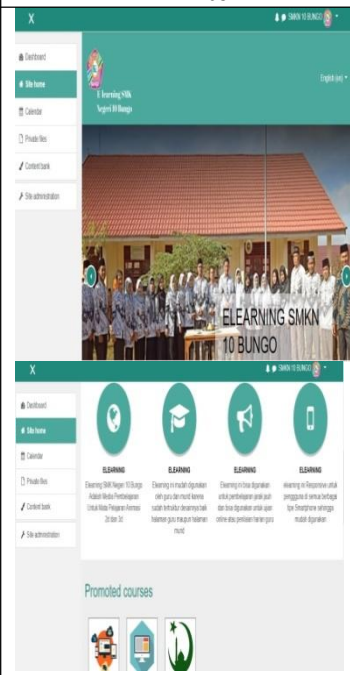
Results and Discussion

A. Research result

The product produced in this study is a Moodle-based E-learning Platform developed by researchers, with the aim of being a tool in the learning process and as an independent learning resource that can be used by students.

Table. 1 Media Revision based on Validator Suggestions.

No	Validator Name	Before	After
1.	V1	 <p>No user guide</p>  <p>Incomplete materials and assignments.</p>	 <p>After adding the user guide</p> 

			 <p>After adding materials and assignments</p>
No	Validator	Before	After
	V2	 <p>Make it look as attractive as possible</p>  <p>Add video tutorials and assignment assignments</p>	 <p>The view is already interesting</p>

			Already added tutorial videos and assignment assignments
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B. Data Analyst

The validity of this media aims to determine the opinion of media experts regarding the feasibility of Moodle-based e-learning learning media. This validation is done by showing the Moodle-based e-learning media and submitting a validation questionnaire to the media. Where in the questionnaire there are several statements consisting of 3 indicators, namely Appearance, Interactivity Aspects and Benefit Aspects. The validation of learning media experts is carried out by 2 media experts

The following are the results of media validity can be seen in the table below:

Table 2. Media Validity Results

No	Assessment Aspect	Validator		Amount	Validity Results	Category
		VI	V2			
1.	Appearance	3	3,571	6.5	0.821	Valid
2.	Interactivity Aspect	3,375	3.5	6,875	0.859	Valid
3.	Benefit Aspect	3	4	7	0.875	Valid
Total					2,555	-
Average					0.851	Valid

Source: Research Results, 2022 (Data processed)

Based on the results of the data analysis of moodle-based e-learning media, on the display, aspects of interactivity and aspects of usefulness assessed by media expert validators were declared "valid" because the validity category of learning media 0.667 was declared "valid" while 0 - 0.666 was declared "invalid" from The table above which states about the results of media validation, a value of 0.851 is declared "valid" and feasible to be used as learning media.

The validity of this material aims to determine the opinion of material experts regarding the feasibility of Moodle-based e-learning learning media.

Table 3. Material Validity Results

No	Assessment Aspect	Validator	Amount	Validity Results	Category
		V1			
1.	Content (Material)	3.33	3.33	0.833	Valid
2.	Language	3.6	3.6	0.9	Valid
Amount				1,733	-
Average				0.866	Valid

Source: Research results, 2022 (Data processed)

Based on the results of the analysis of moodle-based e-learning media on the content (material) and linguistic aspects which were assessed by the material expert validator, it was declared "valid" because the validity category of the learning media 0.667 was declared "valid" while 0 - 0.666 was declared "invalid" from the table above. which states about the results of material validation, a value of 0.866 is declared "valid" and suitable for use as a learning medium.

This practicality test was conducted to determine whether the Moodle-based e-learning media was practical or not to be used in schools, the practicality test was carried out by teachers of 2d and 3d animation subjects and students of class XI MM. For the teacher's questionnaire there are several statements consisting of 3 indicators and for students there are several statements consisting of 3 indicators. So the results of the practicality of teachers and students can be seen in the following table:

Table 4. Teacher Practicality

No	Practical Aspect	(%)	Category
1.	Learning Media	80	Practical
2.	Theory	80	Practical
3.	Benefit	66.67	Practical
Average		75.56	Practical

Source: Research Results, 2022 (Data processed)

Based on the results of the analysis and the percentage level of practicality of e-learning learning media based on 2d and 3d animation which was assessed by 2d and 3d animation teachers as "practical" because the practicality category 61-80% was declared "practical" because in the table of practicality results the teacher's response above stated that having a percentage of 75.56% in the "practical" category and suitable for use as a learning medium.

The practicality test of Moodle-based e-learning media also requires input in the form of responses from students. This data was obtained after learning using the media, through a questionnaire given to students. The results obtained can be seen in the table below:

Table 13. Student Practicality

No	Practical Aspect	(%)	Category
1.	Learning Media	81.371	Very Practical
2.	Theory	87.09	Very Practical
3.	Benefit	82.41	Very Practical
Average		83,629	Very Practical

Source: Research Results, 2022 (Data processed)

Based on the table of practicality of teacher responses and student responses, it can be concluded that the moodle-based e-learning media that has been made with an average teacher practical value of 75.56% in the practical category and the average practicality value of student responses is 83,629% in the very practical category.

C. Discussion

This study aims to develop a Moodle-Based E-learning Platform for 2d and 3d animation subjects at SMKN 10 Bungo. Testing the feasibility of the Moodle-Based Elearning Platform presented in the form of a questionnaire. The questionnaire consists of several aspects, namely aspects of appearance, aspects of interactivity and aspects of usefulness. The data obtained from the assessment of the media validator will then be analyzed using Aiken`V Statistics. Based on the results of media validation on the Moodle-Based Elearning Platform, it is known that the display aspect shows a value of 0.821 with a valid category, the interactivity aspect shows a value of 0.859 and the Benefit aspect shows a value of 0.875 with a valid category.

TestThe feasibility of the material is presented in the form of a questionnaire. Moodle-Based Elearning Form Testing the feasibility of the material consists of several aspects: content (Theory), and Language. The data obtained from the assessment of the material validator will then be analyzed using Aiken`V statistics. Based on the validation results of the Moodle-Based Elearning Platform Material, it is known that the Content (Material) has a valid category value of 0.833 and Language has a valid category value of 0.9.

Evaluationall aspects of the material obtained an average of 0.866 with the categoryvalid. Based on these average results, it can be concluded that the feasibility of the Moodle-Based Elearning Platform learning media is considered valid by material experts.Based on the results of the practicality of the teacher, it shows that the learning media aspect shows a value of 80% in the practical category, the material aspect shows a value of 80% in the practical category and the benefit aspect shows a value of 66.7% in the practical category.

Based onThe results of student practicality show that the learning media aspect shows a value of 81.371% with a very practical category, the material aspect shows a value of 87.09% with a very practical category and the benefit aspect shows a value of 82.41% with a very practical category.

Evaluationall aspects of practicality students get an average score of 83,629% with a very practical category. Based on the data obtained, it shows that the Moodle-Based Learning Platform by students' practicality is categorized as very practical.

Conclusion

The development of a Moodle-Based e-learning platform on 2-dimensional and 3-dimensional animation subjects has 5 stages, namely, (1) Analysis, (2) Design, (3) Development, (4) Implementation, (5) Evaluation. OnTest the Validity of the Moodle-based E-learning Platform at SMK Negeri 10 Bungo, stating that the Moodle-based E-learning Platform is valid, namely the media validity is 0.851% and the material validity is 0.866%. Practical Test of the Moodle-based E-learning Platform at SMK Negeri 10 Bungo, stated that the Moodle-based E-Learning Platform was practical, namely the practicality of teachers 75.56% and student practicality 83,629%.

References

- Andrizal, A., & Arif, A. (2017). Development of Interactive Learning Media in the Padang State University E-Learning System. *INVOTEK: Journal of Vocational Innovation and Technology*, 17(2), 1–10. <https://doi.org/10.24036/invotek.v17i2.75>
- Dwi Surjono, H. (2017). Multimedia for interactive learning.
- Falahudin, W. (2017). The Effect of Brain Training on Intelligence Levels in Young Adult Age Groups. *Diponegoro Medical Journal*, 6(2), 402–416.
- Fauzi, A. (2020). Moodle-Based E-Learning Communication to Prevent the Spread of Covid-19. *Journal of Women & Islamic Studies*, 13(1), 28–39.
- IImiawan and Arif, (2018). (2018). Development of E-Learning Moodele as a Learning Management Media. *Kodifika*, 12(2),167. <http://doi.org/10.21154/kodifikasia.v12i2.1516>
- Mongi, NS, & Hendry, H. (2021). Analysis of E-learning System Development and Implementation To Increase Agent Knowledge Using ADDIE Model Method (Case Study: PT. Global Infotech Solution). *Journal of Computer Systems and Informatics (JSON)*, 2(3), 269. <https://doi.org/10.30865/json.v2i3.2920>
- Natasia, C., & Puspitasari, D. (2020). Utilization of Moodle e-learning media to support student learning at the Faculty of Management and Business, Ciputra University. *Office Administration Education*, 8(1), 169–179. <https://journal.unesa.ac.id/index.php/jpap/article/viewFile/8238>
- Neni Isnaeni, & Dewi Hildayah. (2020). Learning Media in Formation of Student Learning Interaction. *Journal of Syntax Transformation*, 1(5), 148–156. <https://doi.org/10.46799/jst.v1i5.69>
- Nurrita, T. (2019). Development of circle learning media to improve student learning outcomes. *Journal of Physics: Conference Series*, 1321(2), 171–87. <https://doi.org/10.1088/1742-6596/1321/2/022099>
- Pane, A. (2017). LEARNING AND LEARNING Aprida Pane Muhammad Darwis Dasopang. 03(2), 333–352.
- Rizal, S., & Walidain, B. (2019). Making Moodle-Based E-Learning Learning Media in the Introduction to Computer Applications Course at the University of Serambi Mekkah. *JOURNAL OF SCIENTIFIC DIDACTIKA: Scientific Media of Education and Teaching*, 19(2), 178. <https://doi.org/10.22373/jid.v19i2.5032>
- Sugiarti. (2017). Moodle-Based E-Learning on Science Learning in Schools. *MangiferaEdu*,2(1), 43–49. <https://doi.org/10.31943/mangiferaedu.v2i1.17>
- Wicaksana, Ervan Johan, D. (2020). The Effectiveness of Learning Using Moodle on Students' Motivation and Talent Interests Amid the COVID-19 Pandemic. *EduTeach: Journal of Education and Learning Technology*, 1(2), 117–124.
- Iryadunas, Thomson Mary, Annika Maizeli, R. Lina.(2021). Development of learning media for understanding the syntax of mobile-based 21st century learning models. *Journal of Physics Education and Science Research*. 8(1), 46-59
-

Suartama, Kadek & Tastra, Dewa Kade. (2014) Moodle-Based E-Learning. Singaraja: Ganesha Press
University of Education with Graha Ilmu.

