

DESIGNING MOODLE APPLICATIONS AS A DIGITAL SIMULATION LEARNING MEDIA AT SMK NUSANTARA 1 CIPUTAT

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ABSTRACT

Moodle is a web service that provides support for online learning activities. With Moodle, learning can be done anytime and anywhere as long as there is an internet connection. The model used in this research is the ADDIE model which includes analysis, design, development, implementation, and evaluation. And the application used is XAMPP. The validity and practicality tests involved 1 material expert, 1 media expert and X AKL class students totaling 5 students for small groups and 25 students for large groups. The instrument used is a questionnaire or questionnaire. The data collection time of students on July 06, 2022 at SMK Nusantara 1 Ciputat. The results of the material expert validation test research obtained an average score of 95%, the results of the media expert validation test research obtained an average score of 96%, and the results of the student practicality test research obtained an average score of 92.8%.

Keywords: Moodle, Learning Media, XAMPP

INTRODUCTION

The rapid development of information technology has a positive impact, besides that the development of this technology has an impact on socio-cultural changes, one of which is the changes that occur in the world of education, namely the design of e-learning learning media as a support for the quality of education. The use of technology by humans is generally used as a tool to facilitate daily life activities where every human activity is closely related to technology. Humans must be able to use technology wisely, both those that have developed and those that will be developed in the future. E-learning is currently used as an alternative learning media besides face-to-face learning. This is because e-learning allows students to follow the learning process wherever and whenever they are. Besides that, e-learning is an alternative during the current pandemic in helping the process run. fixed learning

Currently, the learning system used in Digital Simulation subjects at SMK Nusantara 1 Ciputat is still conventional and has not used e-learning, thus causing several obstacles in the field, especially when the world faces the Covid 19 outbreak. The teaching materials used are still in the form of power point slides. Power point slides made by the teacher and delivered to students through Google Classroom or Whatsapp groups in each meeting. The material obtained by students is not complete because it is only limited to power points, exercises or daily quizzes are included in the power point. Students are very dependent on the teacher to discuss the main points of material in each meeting. Another thing that was found in the field was that the learning methods used at SMK Nusantara 1 Ciputat were still focused on the teacher. Teaching still uses a lecture model, where students will record the learning material that has been delivered. Sometimes questions are given that will be answered together. Students do not get many opportunities to ask questions or understand Digital Simulation material either inside or outside of face-to-face learning time.

Currently, the Covid 19 outbreak is still not 100% over. For about two years, schools have not carried out the learning process offline, and only online. However, the online learning process is considered less effective and causes problems for teachers, students and parents. Most complaints come from parents of students. The problem that is often complained about is none other than learning facilities for online learning processes such as cellphones, internet quotas and constraints on network connections that are difficult to reach. Although the government has provided assistance in the form of education quotas to students, it does not facilitate the online learning process. In addition, the tasks given by teachers during online learning are considered difficult for both parents and students themselves. This condition is certainly quite difficult for students in understanding the learning material or doing the assignments given. Seeing the less conducive learning conditions and the spread of covid 19 which has been reduced and also the issuance of a policy from the government that allows limited face-to-face learning (PTMT) SMK Nusantara 1 Ciputat decided to carry out the learning process offline with a capacity of 50% of students in one room. Although only 50% of the students were present, the learning process continued smoothly. The learning process lasts shorter than normal hours because it is still in the pandemic period. In class learning, no other teacher is allowed other than the class teacher.

During the current pandemic, teachers are required to hone their creativity in teaching students so that the learning process does not run monotonously and is also easily understood by students, because it cannot be denied that teachers are currently required to have a high sense of creativity to help students in learning more efficiently and comfortably without having to force and make students feel that learning is very boring.

By designing e-learning as a learning media with the hope of motivating and improving the learning success of students. Moreover, the learning process does not always take place from teacher to student, but can be done by fellow students themselves. The learning process is an effort to balance the activities of teachers and students. However, during the current pandemic, face-to-face learning cannot be implemented optimally. With this problem, a teaching method that is currently developing is e-learning. Through this research entitled "Designing Moodle Applications as Digital Simulation Learning Media at SMK Nusantara 1 Ciputat" it is hoped that it can overcome the problems of the teaching and learning process during the pandemic. Besides that, e-learning is also a learning media that includes many things such as providing material, quizzes, exams and others, so that the entire learning process becomes more effective and efficient.

THEORETICAL REVIEW

a. E-learning

According to Eka Septiani (2018) E-learning is taken from the words 'electronic' and 'learning' so that it can be interpreted as learning done with electronic aids, such as computers. E-learning is a system used as a medium where learning takes place without face-to-face meetings between teachers and students.

b. Learn

According to Arsyad in Rizqi Ilyasa Aghni (2018) states that learning is a series of processes that include many components, one of which is the interaction of a person with the surrounding environment. The success of a learning process is marked by changes in the behavior of students due to an increase in knowledge, skills and attitudes. One of the formalized learning processes is the education process at school.

c. Media

According to Sardiman in Hamdi, R. Eka, and Sittati (2020) revealed that, Media is one of the tools used to convey messages from senders to recipients, and can stimulate students' thoughts, feelings, attention, interest, and interest in learning.

d. Learning

According to Pane & Dasopang in Carol and Durinta (2020) Learning is the process of coordinating and organizing the environment around students to encourage them to participate and carry out the learning process.

e. Learning Media

Learning media is everything that is physical and technical in the learning process that helps teachers communicate learning content to students in order to achieve learning objectives that have been determined by Steffi Adam and Muhammad Taufik Syastra in Ahmad Zaki, and Diyan Yusri (2020).

f. Moodle

According to Numiek (2013) Moodle is a software package designed for web-based online learning activities. Moodle is freely available and used as an open source product.

g. XAMPP

According to Pratama, I Putu Agus Eka in Daniel, Maman, and Jaka (2020) said that XAMPP is an instant web server application (available) for Linux and Windows operating systems.

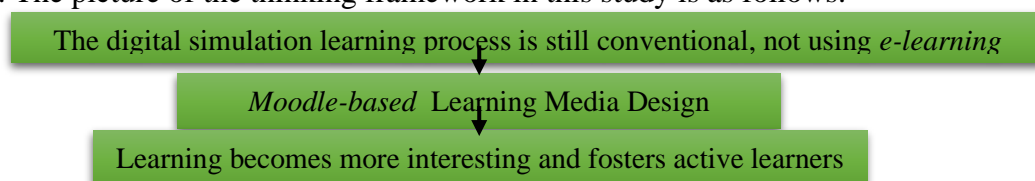
RELEVANT RESEARCH

1. Research by Hamdi, R. Eka, Sittati (2020), The results showed that the assessment by media experts received a score of 78.4% which was included in the appropriate category and the material expert assessment with a score of 81.54% was included in the very feasible category. From these feasibility results it can be concluded that the e-learning material developed is suitable for use as a variety of learning media for Research Methodology courses.
2. Research by Nathasa and Elita (2017), The results showed the percentage of feasibility of this learning media was 79.5%. Based on the eligibility criteria, this Moodle-based e-learning media is considered feasible for use in the learning process.
3. Research by Seprida Hanum (2015), the results showed that through the application of e-learning students believe that e-learning is something new so that students are always active in the learning process.

FRAMEWORK OF THOUGHT

In this research, the focus of research is designing Moodle applications as a learning medium for Digital Simulation. Learning is still conventional not yet using e-learning, thus causing several obstacles in the field. In discussing topics in each meeting, students are more dependent on the teacher. Another thing to note in this case is that the teaching method at SMK Nusantara 1 Ciputat is still teacher-oriented. The teaching process still uses the lecture method, where students sit and record the learning material delivered by the teacher.

In order to create active and interesting learning, teachers must use a different learning model than before. Seeing this problem, efforts are needed to apply a special model in learning Digital Simulation. Based on the existing problems, researchers chose to design the Moodle application as a learning medium in order to foster active students towards Digital Simulation learning. The picture of the thinking framework in this study is as follows.



Discussion



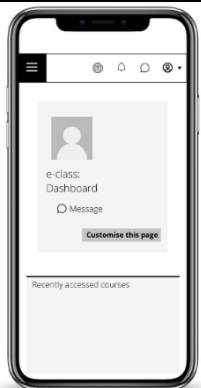
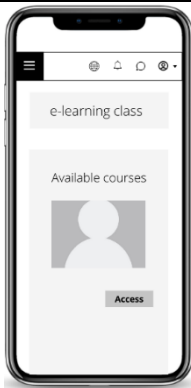
The development model used in this research is the ADDIE model. This model has five development stages, namely, analysis, design, development, implementation, and evaluation. The following are the results of the development of Moodle applications as digital simulation learning media.

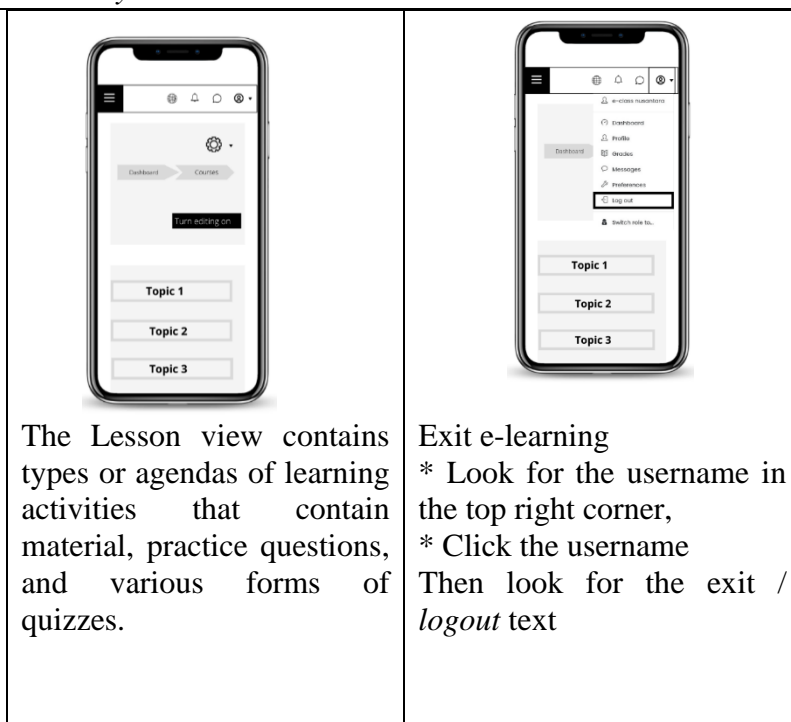
1. Analysis

Identify problems, then identify products that meet the objectives, and think of products to develop.

2. Design

At this stage the design of the product design to be developed is as follows:

 <p>Open the google page, then type in the web address: educlasscenter.com</p>	 <p>Entering username and password Username: Yolikoto Password: Yolikoto23_ After entering the username and password click Login</p>
 <p>Dashboard view is the main page that will appear after login. Various important information can be directly accessed from this main page</p>	 <p>The home site display is a display that will be accessed by students to see the subjects to be studied.</p>



The Lesson view contains types or agendas of learning activities that contain material, practice questions, and various forms of quizzes.

Exit e-learning
* Look for the username in the top right corner,
* Click the username
Then look for the exit / logout text

Figure 2. Storyboard

3. Development

This stage is the process of realizing what has been designed. To make this e-learning design, we need to prepare several applications, namely:

a. Application Installation

1) XAMPP

XAMPP functions as software that can make a computer into a localhost. This application can be downloaded at the link below: <https://www.apachefriends.org/download.html> after that install the XAMPP application.

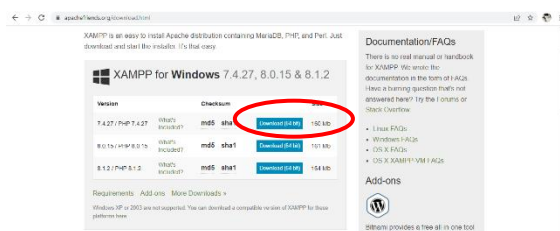


Figure 3. XAMPP installation

2) Moodle

Moodle can be downloaded at the link below: <https://download.moodle.org/releases/latest/>

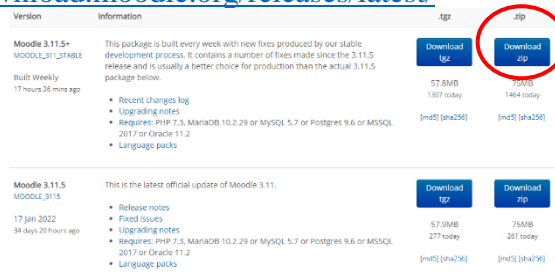


Figure 4. Moodle installation

3) Moodle Theme (Moove)

This application serves to replace the theme on Moodle, where this application can be downloaded at the link below:

<https://moodle.org/plugins/thememoove>



Figure 5. Moodle Theme Installation

b. Moodle Installation

- a) Make sure the XAMPP application has been successfully installed on our PC / Laptop. Then extract the downloaded Moodle zip file and move it to the local disk C: \xampp\htdocs to the "htdocs" folder. Here we name the moodle folder "e-learning".

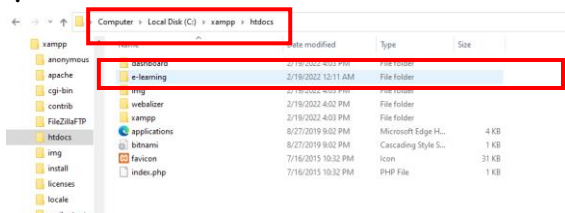


Figure 6. Extract Moodle Zip File

- b) Open the XAMPP Control Panel application and click Start on Apache and MySQL until their status changes to running.

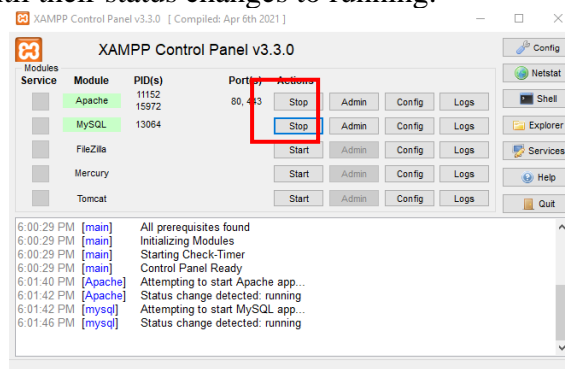


Figure 7. XAMPP

- c) Then, open moodle by typing "http://localhost/moodle" in the address on google chrome. Then the language options will appear, we can just let it use English, after that click Next.

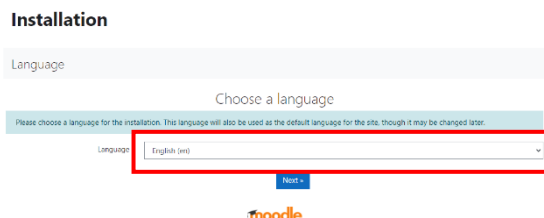


Figure 8. Selecting a Language

- d) Next, the "Confirm Path" will appear, then we fill in the 3 columns on this page, namely the Web Address, Moodle Directory, and Data Directory columns.

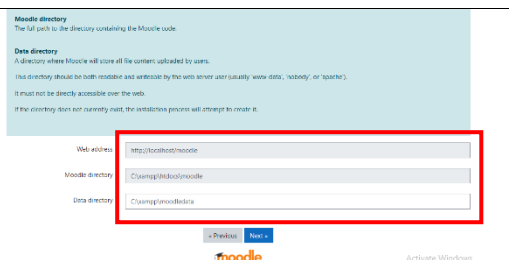


Figure 9. Confirm Path

- e) Then select the "choose database driver" type, namely MariaDB (narrative/mariadb) then click next.

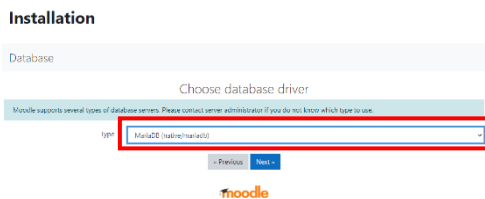


Figure 10. Database type

- f) Next, the "database settings" menu will appear, in this menu there are 6 forms that can be filled in, but we only need to fill in the Database User form with "root" (without quotes) and the database name is "moodledb".

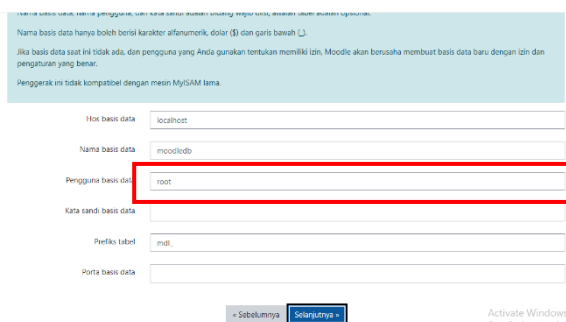


Figure 11. Database Setting

- g) After that, the "Server Check" page will appear, here several warning statuses will be displayed, namely a red check status which means that it must or must be repaired, a yellow check status which means that it can be left without being repaired, and a green ok status which means there are no problems.

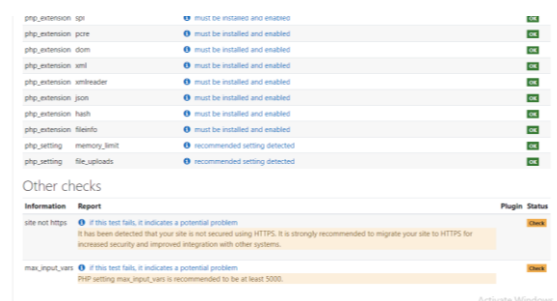


Figure 12. Server Check

- h) Then after that make sure all installations are successful and after that click "continue".

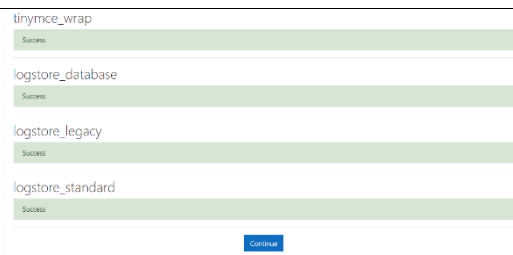


Figure 13. Successful installation

- i) Then set up your account and update your profile, then click next. Username:admin password: Adminmoodle_123 for admin login

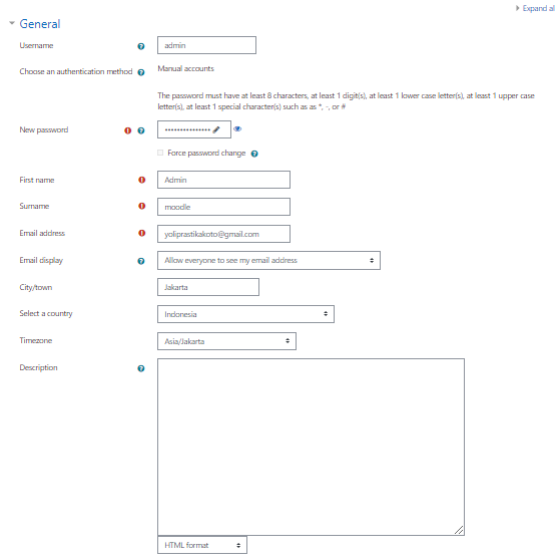


Figure 14: Account Setup

- j) Display of the installed e-learning dashboard.

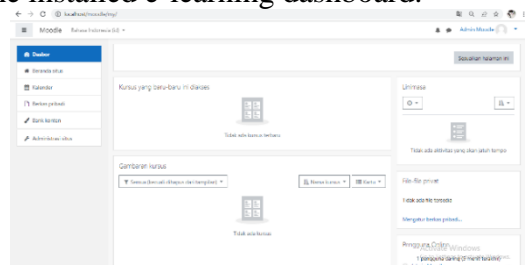


Figure 15. Dashboard view

4. Implementation

Implementing the Moodle application that has been developed by researchers as a learning media that aims to obtain its advantages and disadvantages, which are as follows:

- a. First step, please open the browser that you have. Make sure the internet connection is always connected, then access the moodle web as shown below: educlasscenter.com

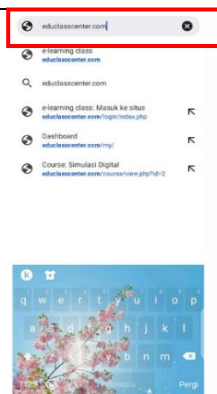


Figure 16. Browser page

- b. Step two, enter your username and password and click login. Username: Yolikoto
Password: Moodle_123

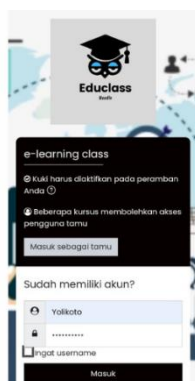


Figure 17. Login Page

- c. Step three, After successfully logging in, the change password page will appear, please change the password as you wish, then save changes.



Figure 18. Change Password page

- d. Step four, When you have successfully logged in, then click "site home" to access the subjects to be studied.



Figure 19. Site Home view

- e. The fifth step, the digital simulation subject will appear which contains assignments, materials, or quizzes totaling 10 questions. Then you can click on the quiz to be studied.

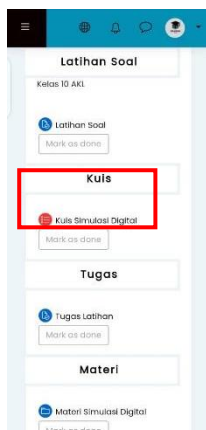


Figure 20. Subject Display

- f. Step six, After clicking, a display will appear as shown below. Do the quiz properly and correctly, in the quiz there are 10 questions with a duration of 20 minutes that have been listed on the screen.

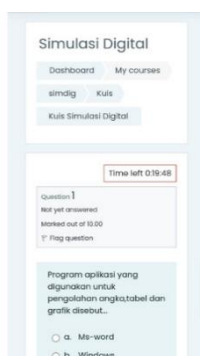


Figure 21: Quiz view

- g. Step seven, after the quiz is completed, you can immediately see the score you have obtained.

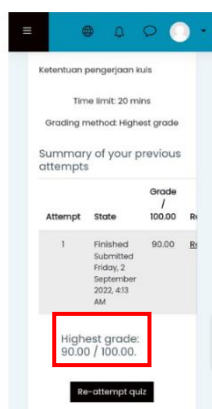


Figure 22. Quiz Score Display

- h. Step eight, After you feel there are no more tasks to be done then you can immediately log out / exit the e-learning page located on the top left.

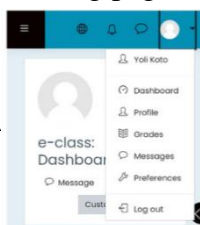




Figure 23: Logout page

5. Evaluation

This stage is the final stage of ADDIE development. At this stage, the need for revision is determined based on the results of expert evaluations and testers conducted. So that we can determine whether the learning media products produced have succeeded as we originally hoped. Then proceed with quantitative test data analysis. Quantitative data is obtained in the form of numbers from respondents' assessments.

CONCLUSION AND CLOSING

a. Summary

Give The development model used in making Moodle as a learning media is the ADDIE model. And the application used is XAMPP. The ADDIE model has five stages, including:

- Analysis, a stage where thinking about the products needed in the completeness of the data that will be developed for the implementation of e-learning using Moodle in class X SMK Nusantara 1 Ciputat.

- Design, at this stage the researcher designs the product that will be developed later.

- Development, this stage is the process of realizing what has been designed by researchers.

- Implementation, implementing the Moodle application that has been developed by researchers in class X AKL SMK Nusantara 1 Ciputat.

- Evaluation, aims to see the validity of the product that has been developed. Based on the results of the research, the students' practicality test obtained an average score of 92.8% or very practical.

b. Cover

The author would like to thank those who have supported this research so that it can run as it should, and the author would like to thank the Principal and Teachers of SMK Nusantara 1 Ciputat who have accepted the author to conduct research.

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