

Web-based Interactive Distance Learning Design with Moodle

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Abstract

The rapid development of technology is driving integration towards education. Web-based interactive distance learning is one of the proofs of the improvement of technology. The current research provides the design of how web-based interactive distance learning by using Moodle through a systematic literature review. The data was taken from searches databases and then found out 9 articles regarding the Moodle learning system. It was found that Moodle provides many features that can enhance the learning process, as well as facilitate the learning environment regardless of place and time. However, the shortcomings were also found that it can be less satisfying because of the cost and the communication that existed in the Moodle also affected the satisfaction of the learning system. A deep considerable is needed by the educational practioners regarding the utilisation of Moodle in learning system.

Keywords: *Distance Learning, Web-based Interactive Learning, Moodle*



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1. INTRODUCTION

The rapid development of technology has led to the integration of technology into almost every aspect of human life. Education is no different. In the rapidly evolving landscape of education, the integration of technology has become imperative, ushering in a new era of learning that transcends traditional boundaries. A number of studies have been carried out around the world to determine the positive impact of technology on learning and how it can improve the learning environment in the classroom (Jhurree, 2005). One prominent manifestation of this educational transformation is the advent of Web-based Interactive Distance Learning (WIDL) platforms. The new model of web-based distance learning facilitates a forum for teaching in which every student access to everything, regardless of time and place has. In addition, the course material can be dynamically updated and interactively designed as required (Kamel, 2014). These platforms leverage the power of the internet to facilitate engaging and interactive educational experiences, overcoming geographical constraints and fostering a global learning community.

Among the myriad of platforms, Moodle stands out as a robust and versatile Learning Management System (LMS) that has gained widespread recognition in the realm of distance education. Moodle is a free open-source platform which empowers educators to create dynamic online courses, deliver content seamlessly, and engage learners through interactive features (Matijašević-Obradović et al., 2017). This paper delves into the design and implementation of Web-based Interactive Distance Learning with a focus on the Moodle platform.

2. METHODOLOGY

The current research was designed using the qualitative method in the form of a literature review. Literature review is a research method that is used to provide an overview of the areas in which research is being conducted in a disparate and interdisciplinary manner (Snyder, 2019). The current research used systematic literature review to identify, select and critically appraise research to answer the research questions. The data were taken from scholarly publications published in database searches such as Scopus and Google Scholar—including ScienceDirect, TandFonline, Springer, etc. Once the data was collected, it was systematically analysed to draw conclusions and answer the research question.

The question formula of the current research is as follows:

1. How is the design of web-based interactive learning design with Moodle
2. What are the benefits of using Moodle?
3. What are the challenges of distance learning with Moodle?

3. RESULT

The data was extracted from database searches using the keywords 'web-based interactive distance learning', 'distance learning with Moodle', 'learning design with Moodle'. Searching for articles on the related terms, 10 articles were found to identify the design of distance learning with Moodle, the benefits of using Moodle and the challenges of distance learning with Moodle. The articles used for this review are listed in the following table.

Title	Date of Publication
Adaptation of the Moodle for application in distance education course at the state university of campinas	2012
Factors affecting the effectiveness and use of Moodle: students' perception	2013
A study about using E-learning platform (Moodle) in University teaching process	2014

E-course based on the LMS Moodle for English Language	2015
Teaching: Development and implementation of results	
Student perception of Moodle learning management system:	2015
a satisfaction and significance analysis	
Student reactions to classroom management technology:	2015
learning styles and attitudes toward Moodle	
Optimising Moodle quizzes for online assessments	2019
Motivation factors and barriers to the continuous use of	2019
blended learning approach using Moodle: students' perceptions and individual differences	
A systematic review on trends in using Moodle for teaching	2022
and learning	

4. DISCUSSION

A. The Design of Web-based Interactive Learning Design with Moodle

The development of virtual learning environments has been growing rapidly from time to time. The trend of using the virtual learning environment is due to its ease of use, flexibility and convenience during the learning process. Many applications have been developed that bring the feature to contribute to the increase of knowledge delivery and building communication among students. According to Garbin et al., (2012), the Virtual Learning Environment (VLE) usually offers features such as forum, email, blog, menu for asynchronous communication, chat for synchronous communication, wikis, glossaries, texts and polls together with learning materials such as books, video links, audio and search tools. However, the researchers also found that technical issues related to the use of Moodle were the biggest problem in the adoption of Moodle for distance learning at the university. The researchers then designed Moodle to address these issues by developing features such as:

- Groups: This feature enables students to identify their group members, fostering a better understanding and connection among them.
- Profile: This feature empowers students to share information about themselves, enabling them to specify their interests and facilitating the establishment of new connections.
- Forum: This tool facilitates the exchange of information, knowledge, and discussion of topics relevant to the course theme.
- Evaluation: This tool allows tutors to post grades, and students can verify and access their grades.
- Portfolio: This feature is dedicated to showcasing the individual work of students.

- Subjects: This tool facilitates the regular updating of the course organization, providing students with weekly course materials, including videos and texts related to each discipline.

In addition, the register menu has been designed with a simpler display so that students can access it from their mobile phones without much difficulty. From this it can be concluded that Moodle can be designed and adopted according to the needs of educational institutions and students so that the use of Moodle can be optimised to achieve the learning objectives.

B. The Benefits of Moodle

Oproiu (2015) found that 80% of students agree that Moodle is a useful media platform. In addition, some of the benefits that students have gained from using Moodle include:

- Access to the course content and topics is provided, along with a virtual library that students can avail at their convenience based on their study schedules.
- Collaborative homework completion is facilitated, allowing students to work together with their peers.
- The familiarity with the electronic environment makes this learning method easily accessible for them.
- Students have the capability to generate information and share it on the forum or blog.
- Direct communication with the professor is possible for students.
- Online assessment is noted for its objectivity compared to traditional methods.
- The completion of self-assessment is a straightforward process.

It is also consistent with the research of Rymanova et al., (2015) who claimed that Moodle can have a positive impact on academic achievement. It also effectively engages students during the learning process. Moodle can also be used to run an online quiz. According to Gamage et al., (2019), Moodle quizzes can increase student engagement, performance and satisfaction. A literature review conducted by Gamage et al., (2022) on the trends in the use of Moodle for teaching and learning showed that the bibliographic analysis identified Moodle as a well-established and advanced learning platform. The thematic analysis also found that Moodle can be used to support learning in a variety of ways. Moodle also allows for the creativity of individual teachers to develop course-specific materials for students. The benefit of Moodle is that it can facilitate communication and verbal learning styles, which is an important perceived benefit of classroom management systems for students. Moodle facilitates communication between student and teacher as well as facilitating discussion outside of the classroom, regardless of the strict workplace (Chung & Ackerman, 2015). It can be concluded that Moodle provides benefits to students in the learning process.

C. The Challenges of Utilising Moodle

The benefits offered by Moodle have so many positive effects on the learning process. It can optimise the process of achieving learning objectives. However, there are also the shortcomings of Moodle. Horvat et al., (2015) in their research on the students' perception about the satisfaction and significance analysis on the learning management system Moodle, shows that a proper and high quality Moodle system somehow needs an expensive cost in which not everyone can afford the cost. Another shortcoming found is that students who are less interested in accessing the material tend to be less satisfied. The researchers found that the students who tended to care less about accessing Moodle seemed to have subjective problems, leading to a vicious circle in which problems reduce satisfaction and whereupon less satisfaction leads to less use of the system. Sabah (2020) also found that students do not feel useful or satisfied because of course requirements and institutional rewards. This leads to less than optimal performance on the Moodle learning system. It is also consistent with the research by Damjanovic et al., (2015) who found that Moodle had a positive effect on perceived usefulness and communicativeness, but no significant effect on satisfaction. It is communicative that existed in the Moodle that has a significant contribution to satisfaction. This can mean that if communication on Moodle is not good, students will feel less satisfied using Moodle. The shortcomings of Moodle also need to be taken into account so that educational practitioners can think, design and adopt the system to meet the needs of the learning process.

5. CONCLUSION

Designing web-based interactive distance learning with Moodle can enhance the learning process to achieve learning objectives. It has been proven that Moodle can engage students in the learning process and facilitate discussion regardless of location and time. It enables the creativity of the students and also offers the ease to the teachers. However, it also has some shortcomings in terms of cost and student satisfaction. It is indeed necessary to consider for the educational institutions to adapt and suit the Moodle so that it can be optimally used to achieve the learning objectives.

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