



Enhancing Teaching And Learning Through The Use Of Moodle LMS

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ABSTRACT

Moodle as a Learning Management System has proved itself to be an effective tool to enhance the educational systems and infrastructures in educational institution worldwide. This research

evaluated the implementation and use of Moodle at Mazoon College to know its effectiveness in the enhancement of the teaching and learning processes. The researchers used Descriptive Method as the methodology of the research and structured questionnaire as the tool for data gathering. The research survey conducted online and the total population of the lecturers of Mazoon College served as the respondents of the study. This study would like to answer the following questions such as: a. Frequency of using Moodle, b. Tools and activities used in the Moodle by the lecturers, c. Usefulness of Moodle in all courses in the college, d. Effectiveness of Moodle in teaching and learning process, e. Overall usefulness of Moodle, f. Use of Moodle to enhance the performance of the learners, g. Use of Moodle to enhance the engagement of the learners, h. Effectiveness of Turnitin integration to Moodle, i. Use of Moodle to ensure academic integrity and j. Use of Moodle to enhance the communication of the lecturers to the learners.

Percentage, weighted mean, and Likert scale used as the Statistical tool in this study. Here are the results of the survey: There are 89.9% lecturers in the college who always using Moodle in teaching. The major use of Moodle for the college is giving assignments to the students followed by giving resources, external links and activities and teaching materials and files. In terms of usefulness of Moodle in all courses, 18.5% Strongly Agree followed by 74.1% who Strongly Agree. The effectiveness of Moodle in teaching in learning is 70.4% Very Effective and 55.6% rated it as Very Easy to use while 40.7% rated it as Easy in terms of using Moodle. In terms of using Moodle to enhance the performance of the learners, 63% believe that it is a Very Good tool while 25.9% rated it as Good. It is almost the same in enhancing the learner's engagement with 59.3% Very Good rate and 25.9% Good. The integration of Turnitin in the Moodle is 55.6% Very Effective while 33.3% Effective according to the respondents. The 69.2% of the respondents Always believe on the use of Moodle to maintain the Academic integrity in education which is the same as the 59.3% Always improved the communication of the lecturers to the learners using Moodle.

The recommendations of the study are the following: Continue the use Moodle as the Learning Management System in the college. Improve the use of Moodle by using it in assessments like online exams or quizzes and not only by giving assignments. Revisit and revise the syllabus to ensure the academic integrity in teaching since there are many available AI tools that the students can use to their assignments and reports.

Keywords: E-Learning, Moodle, Teaching and Learning, Academic integrity, Assessments, Learning Management System.

Introduction

The integration of technology into educational systems has been a feature of modernisation and development of education worldwide (Georgina et al, 2008). The emergence of special circumstances, during the Covid-19 pandemic, accelerated the process in an unprecedented rate (Akram H. et al, 2021). Institutions, students, and individuals struggled to adapt quickly to the new realities imposed by enforced online learning and social distancing. Urgent need for software systems that may ease the transition was desperately required.

Moodle presented an adaptive Learning Management System (LMS) that is primarily used to manage, deliver, and measure training and learning online (Ziraba et al, 2020). It was launched in 2002 as an open-source software and continued to be improved by the developers throughout the years, following the dynamic needs and requirements of the end users. It steadily rose to become a leading LMS, bolstering its status during the pandemic years.

Moodle LMS proved to be an ideal option to be a platform for building an adaptive and intuitive E-learning environment as it benefits from being an open-source software, its flexibility and ability to be customizable by users. It is wide support for multimedia, its ability to be a collaborative learning tool, its integration of assessment and feedback tools, its features for progress tracking and reporting, its mobile-friendly design, as well as its community support (Nash, Smith, 2018).

Mazoon College has been a leading higher education institution in the Sultanate of Oman since the 1990's. It has always strived to provide quality educational solutions to its students, including technology-based learning management. In 2019 the college turned to Moodle as its LMS to augment its existing learning systems and to provide a platform that will allow remote learning as well as a communication tool between the learners, teachers, and the institution. Subsequently, creating a dedicated E-learning platform to become the main avenue to the ongoing digitization of the learning process.

Research Objectives

This research aimed the following:

- To measure the effectiveness of the use of Moodle at Mazoon College in teaching.
- To offer recommendations on how the lecturers and the college utilise Moodle's benefits to improve the teaching and learning activities at Mazoon College.

Statement of the Problem

The research aims to address the following inquiry:

1. What are the tools and activities most used by the lecturers in the Moodle system?
2. How do the respondents perceive the following variables in terms of:
 - a. Frequency of using Moodle,
 - b. Usefulness of Moodle in all courses in the college,
 - c. Effectiveness of Moodle in teaching and learning process,
 - d. Overall usefulness of Moodle,
 - e. Use of Moodle to enhance the performance of the learners,
 - f. Use of Moodle to enhance the engagement of the learners,
 - g. Effectiveness of Turnitin integration into Moodle,
 - h. Use of Moodle to ensure academic integrity and,
 - j. Use of Moodle to enhance the communication between the lecturers and the learners.

Literature Review and Studies

The E-Learning platforms have been greatly supporting teaching and learning in almost all educational institutions. Post Covid 19, it has been observed that institutions have started to invest in E-Learning tools to support the students and teachers in the continuity of education without any hindrance. Several challenges were also encountered during this period and continuous efforts have been made to resolve the issues. Many researchers have published various papers where they have tried to prove the effectiveness of E-Learning on improving the academic performance of the students and well as enhancing the teaching strategies.

In similar research, the researcher (Lumadi, 2013) has conducted a Quasi-experimental study to compare the blended learning with the traditional learning approach and its impact on Student-Teacher performance. There were two groups in this experiment-Experimental group which had access to the E-Learning platform and Control group which followed the traditional system of learning. The test scores of two tests were analyzed and evaluated using inferential and descriptive statistics method using SPSS. It was observed that the Students and Teachers in the experimental group performed much better in both the tests as compared to the control group which proved that E-Learning approaches tend to improve the performance of the students as well as teachers.

Another research which was conducted in the University of Novi, Sad, Serbia (Rakic et al., 2019) evaluates the success rates of 18 students using the E-Learning resources of the Moodle platform for the course Project Cost

Management. The study spanned for a period of one year and was based on students and educational resources. The researchers used multi-method for data analysis which helped them acquire maximum information about the students as well as educational resources. The results of this research indicated that the grades of the students who did not use the E-Learning resources were below 50 points which led to their failure in the exams. This shows the strong positive correlation of the success of the students with the use of E-Resources.

In the research, "Use of eLearning and its Effects on Students", the researchers (Saleem. et al., 2014) have assessed the factors affecting the use of E-Learning platform and its effects on students. The researchers measured the effects on students based on three variables- time, technology, and workload. A survey with 100 students of Islamia University of Bahawalpur, Pakistan was conducted, and data was analyzed using SPSS software with the Multi method approach. With consideration to E-Learning as the dependent variable; and technology, time, and workload as the independent variables, data was collected using questionnaires using the Likert scale to rate the parameters. The results showed that the various factors which affected E-Learning were the decrease in workload, saving time and latest technology.

A descriptive study with a sample student population from Ajman University, U.A.E was conducted by a group of researchers (Al Rawashdeh et al., 2021). In this study the researchers collected data using a closed-ended questionnaire and analyzed the data using frequencies and percentages relating to various variables like gender, age groups, specialization, degree, nationality, place of residence, etc. these statistics helped the researchers to identify the advantages and disadvantages of E-Learning. It was observed that most of the respondents agreed to the benefits that E-Learning provides. The most disadvantageous factor was the increase in social isolation which around 73% of the respondents agreed on. The research concluded on the advantages of E-Learning especially in the area of enhanced communication between students and teachers as well as skill development in students. The advantages contributed to the fact that students preferred E-Learning as it increased their skills and aided in their all-round academic development.

Another group of researchers, (Basar, et al., 2021) analysed how effective online learning can be for the students and what challenges it can pose. This research was conducted using a case study with a structured questionnaire which was used on 99 secondary school students in Jasin, Maleka. This research was descriptively analyzed which showed that the use of computers, smart phones and internet was quite prevalent among students and the preference and level of comfort in terms of learning was found to be high with the use of computers and technology. The cost and availability of internet connections as well as the students' computer literacy levels and their motivation towards using online services posed to be a challenge in this area.

In the University of Zambia, an investigation on the effects of E-Learning on the academic performance of distance students was conducted. The researchers (Kafumukache, et al., 2023) conducted a study which was descriptive with simple random sampling used to analyze the responses of 57 participants who rated the E-Learning platform on various parameters related to performance and challenges faced. The results showed that most students (44% and 28%) disagreed to the effectiveness of E-Learning in improving performance of distance learners. However, the researchers claimed that E-Learning has the potential to help improve student learning experience. Here too, the challenges identified were again related with internet issues and connection delays.

Methodology

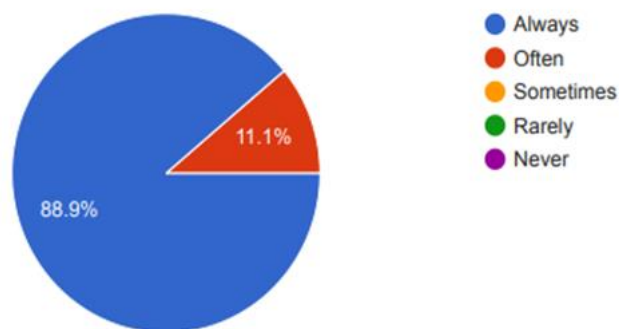
The methodology adopted for this research employed a Descriptive Methodology to examine the effectiveness of Moodle in enhancing the teaching and learning process at Mazoon College (Siedlecki, 2020). The goal of descriptive research is to characterize the features of the population being examined (Nassaji, 2015).

Convenience sampling was used in this study, there were 35 lecturers and professors from the college who actively use Moodle for teaching served as the participants in this study. Convenience Sampling method was selected for the study because it is a practical and accessible method that gives the focus on gathering insights from lecturers regarding their experiences with Moodle in enhancing teaching and learning. Despite the possibility of bias in the sample, convenience sampling was considered suitable for this study due to time and resource constraints as well as the limited sample size, and the ease of collecting the data from the respondents (Emerson, 2021).

Non-Probability Data Sampling collection utilised a structured questionnaire distributed through an online survey tool, ensuring anonymity and data confidentiality (Farrokhi et al, 2012). The questionnaire was created to gather quantitative information about Moodle usage and educator satisfaction. Quantitative data from surveys was analysed using statistical techniques like descriptive statistics (like percentage, mean and weighted mean).

Analysis of the Study

Chart 1. Frequency of Using Moodle



According to Chart 1, 88.9% of the respondents Always use Moodle followed by 11.1% who Often used Moodle in their teaching. As you can see from the chart, there is a high usage of Moodle in teaching at Mazoon College and all the respondents use Moodle in teaching. This is a positive sign of utilization of ICT in teaching. The integration and use of digital learning tools in learning improve and elevate the engagement of the students. It also empowers the educators or the teachers in creating personalized learning experiences to the learners. Using digital tools nurture and enhance critical thinking skills among the learners (Cyberpanel,2024). According to the result, lecturers of Mazoon College utilise Moodle in teaching in creating personalised learning experience to their students which also help them to enhance the critical skills of the students.

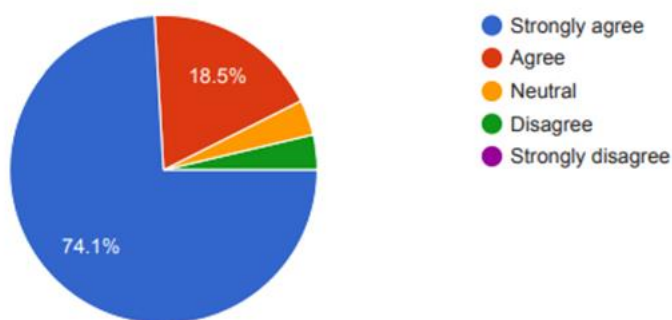
Table 1. Tools/ Activities Utilise or Use in Moodle

Tools/ Activities	Percentage
Forums	48.1%
Assignments	88.9%
Assessments	59.3%
Sharing Resources	70.4%
Teaching Materials/ Files	70.4%
External Link/ Activities	70.4%

Note : Multiple Response

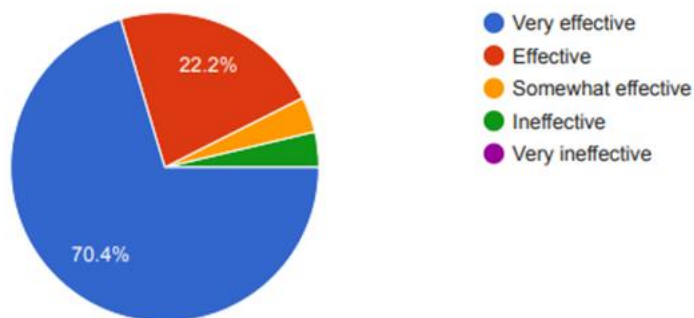
As shown in Table 1, 88.9% usage of Moodle for the respondents is for giving assignments, followed by sharing resources, uploading teaching materials and file, external links, and activities with 70.4%, while the use of Moodle in assessments got 59.3% and last is for making forums with 48.1%. Most of the times Moodle was utilised by the lecturer respondents by giving the students 'assignments.

Chart 2. Applicability of the Use of Moodle in All Courses



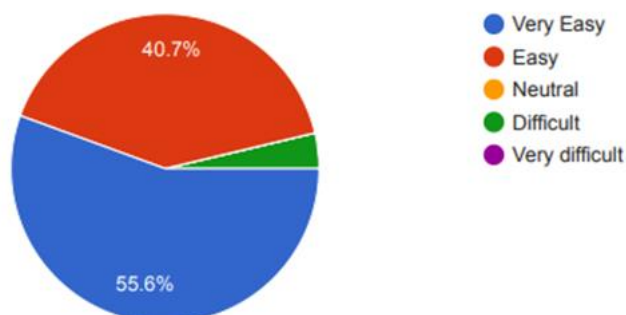
According to the data from Chart 2, 74.1% of the respondents Strongly Agree that all courses can use Moodle, followed by 18.5% who Agree that Moodle is useful in all courses while 3.6% of the respondents Disagree and 3.8% answered Neutral on the perceptions that Moodle is applicable or useful in all courses. It shows from the results that all the courses at Mazoon College are using Moodle in their classes. It also shows that the use of technology in the classroom is usual at Mazoon College.

Chart 3. Effectiveness of Moodle in Teaching



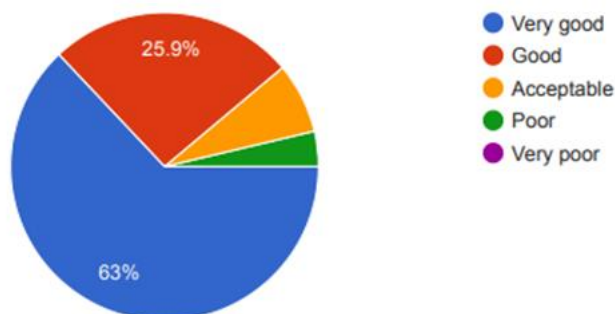
As shown in Chart 3, 70.4% of the respondents believe that Moodle is Very Effective in teaching the students followed by 22.2% who believe that Moodle is Effective in teaching. Those who believe that Moodle is Somewhat Effective and Ineffective fall under 4% per each category.

Chart 4. Overall Ease of Use of Moodle



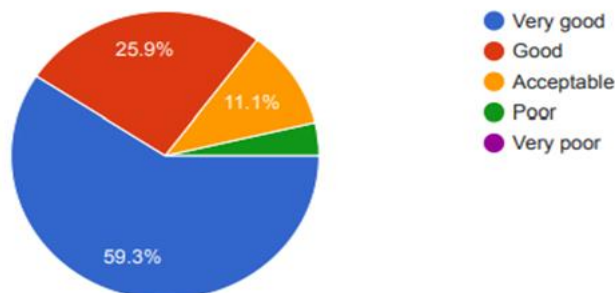
As shown in Chart 4, 55.6% of the respondents stated that Moodle is Very Easy to use, 40.7% believe that Moodle is Easy to use while 3.7% rated that Moodle is Difficult to use.

Chart 5. Extend of the Use of Moodle to Enhance the Students Performance



According to the Chart 5, 63% of the respondents Strongly Agree that Moodle enhance the students' performance, followed by 25.9% who Agree, 7% of the respondents are Neutral and 4.1% Disagree.

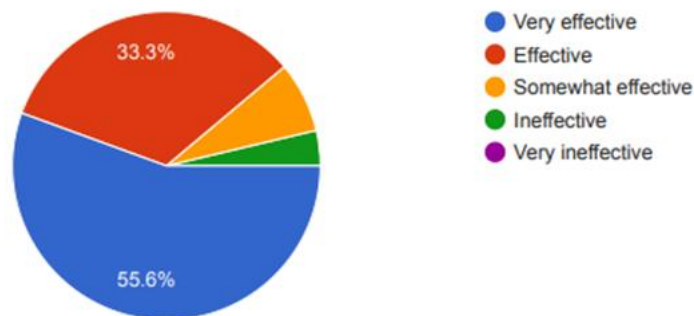
Chart 6. Extent on the Use of Moodle to Enhance the Students Engagement



As shown in Chart 6, through Moodle the extend of students' engagement in the class is Very Good is 59.3%, followed by Good with 25.9% and 11.1% as Acceptable, where 3.7% rated as poor. It shows that Moodle really enhance the students' engagement as perceived by the respondents.

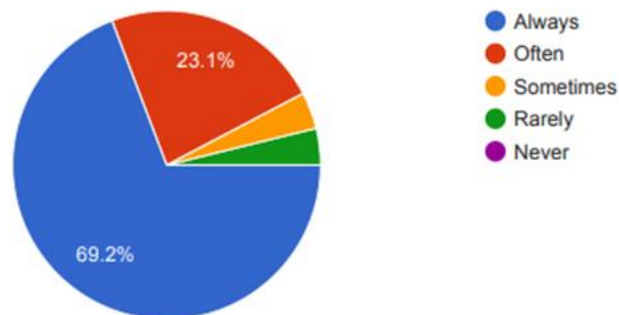
According to Sharma (2023), if technology tool is use for collaborating with others in the classroom or beyond, then, it will engage students. The educators must position and use technology to conduct and facilitate facilities that enables social interaction.

Chart 7. Extent of the Effectivity of Turnitin Integration in Moodle



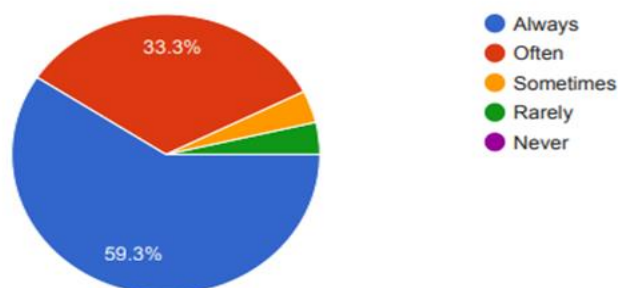
It shows in Chart 7, that 55.6% believe that the integration between Turnitin and Moodle is Very Effective, 33.3% answered that the integration is Effective, 7.6% answered Somewhat Effective and 3.5% answered Ineffective.

Chart 8. Extent on the Preservation of the Academic Integrity with the Use of Moodle



According to Chart 8, 69.2% of the respondents Always believe that Moodle Always serve its academic integrity, 23.1% answered Often, 4.7% stated Sometimes and 3% answered Rarely.

Chart 9. Frequency of the Improvement of Communication in the Class Through the Use of Moodle



As shown in Chart 9, the improvement of the communication in the classes by using Moodle is 59.3% as Always followed by 33.3% with Often. According to the result of the survey, the respondents perceived that Moodle always improve the communication in the class because the use can post announcement in Moodle, it also features chatbox that the students can communicate with their teachers, etc.

Summary of the Analysis

According to the result of the study, the lecturers of Mazoon College utilise Moodle in teaching in creating personalised learning experience to their students which also help them to enhance the critical skills of the students. Moodle enhance the engagement of the students, performance, and the communication inside the classroom. The use of technology in education at Mazoon College is very high since all the courses and all the lecturers are using Moodle. The integration of Turnitin in Moodle also helps the college to preserve academic integrity in education.

Conclusion

Using technology in education like Moodle has boundaries and challenges. However, it gives new perspective on how to engage the learners with the course resources and materials. It enables to extend the learning and education boundaries beyond the walls of the classrooms. It allows interactive and diverse learning experiences for the learners. It helps the academic institution to preserve academic integrity and help the teachers to deliver their courses in more efficient, engaging, and effective way that may give them best learning experiences.

Recommendations

The recommendations of the study are the following:

- Continue the use Moodle as the Learning Management System in the college.
- Improve the use of Moodle by using it in assessments like online exams or quizzes and not only by giving assignments.
- Revisit and revise the syllabus to ensure the academic integrity in teaching since there are many available AI tools that the students can use to their assignments and reports.
- It is recommended to conduct the same study to the students of Mazoon College.

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