Employing the Technology Acceptance Model to Explore Moodle's Online Learning System and Its Effect on Perceived Usefulness and Ease of Use

Manal Y. Alduaij[1], Mariam A. Alterkait[1] & Aljawhara Almutarie[2]

[1] Management Department, College of Business Studies, The Public Authority for Applied Education and Training, Kuwait

[2] King Saud University, Riyadh, Saudi Arabia

Correspondence: Manal Y. Alduaij, Management Department, College of Business Studies, The Public Authority for Applied Education and Training, Kuwait. E-mail: m.alduaij@paaet.edu.kw

Abstract

Moodle is expanding at a very rapid rate when compared to informal in-class transfer. It has a large user base and makes academic content readily available to students on a professional level, particularly in times of crisis like the one the entire world experienced in COVID-19. Professors could still teach during that time, and students could still access academic materials through Moodle's online learning platform using computers or the Moodle application. Moodle has been officially adopted as one of the leading online education systems for lecturers to transfer academic information to students and as a significant medium for students to access academic information due to its success in transferring information quickly and the level of user acceptance.

Keywords: technology acceptance model, professional learning management system (plms), moodle, perceived usefulness, perceived ease of use

1. Introduction

Online learning platforms were not previously a popular way for academic institutions to transfer knowledge because most preferred the traditional way. Moodle has established itself as a useful tool for information transfer due to its accessibility and reliance during COVID-19. In comparison to earlier, it has received more consideration and is now acknowledged as being of paramount importance in the Gulf States. Since academic institutions are now interested in exploring and developing Moodle to meet their educational requirements, this has been particularly evident in Kuwait. To investigate Moodle acceptance in terms of its usefulness and usability, this report gathered some data and applied the technology acceptance model.

2. Review of Literature

The technology acceptance model (Davis, 1989) is used in this study to examine how users' perceptions of the advantages and disadvantages of using mobile commerce relate to their perceptions of the app's usefulness and usability (PEOU).   The TAM is a widely used model in the study of technology adoption that has frequently been used to look at how various emerging technologies are adopted and used. The decision of a user to adopt or reject a technology is significantly influenced by perceptions of the usefulness and simplicity of the technology (Davis, 1986; 1989).

The degree to which "a person believes that using the system will require no effort," while the degree to which "a person believes that using a system will be useful," is known as perceived ease of use.Use is measured by the actual degree of usage by the user to access the course content and through performing course tasks online. It also reflects the degree of reliability the learning system is to the user, and the user's intentions to use the e-learning system. Studies found a positive relationship between user satisfaction and use, where the more satisfies the users are with the e-learning system the greater the usage of the system (Al-Fraihat, Joy & Sinclair, 2020; Aparicio et al., 2017; Wang & Chiu, 2011).

3. Methodology

The goal of this study is to assess the success of Moodle's online learning system during covid. The study

employs a quantitative technique based on an electronically generated and randomly distributed questionnaire to business students from various majors in Kuwait utilizing non-probability sampling. The survey gauges how satisfied users are with the PLMS. The survey had 426 users in total.

There are two sections to the questionnaire. The first section looks at the general demographic information of the participants, while the second section includes questions about the PLMS quality metrics. The five-point Likert scale was used to assess dependent variables (1 = strongly disagree, 2= disagree, 3= to some extent, 4= agree, and 5 = strongly agree) (Gliem & Gliem, 2003). Six PLMS quality measures were investigated: system quality, information quality, service quality, education, and so on.

4. Results and Discussion

This paper has resulted in vital finding that show the importance of using Moodle. Evidence shows the degree of satisfaction when using Moodle as an important method of online information transfer medium in educational settings.

4.1 Tam whole: Perceived Usefulness, Perceived Ease of Use

Table 1. Tam whole: Perceived Usefulness, Perceived Ease of Use

Axis	Cronbach's Alpha
Satisfaction: **How happy are you with Moodle so far?**	0.966
Usefulness: **How beneficial is Moodle for education?**	0.971
Ease of Use: **How user-friendly is Moodle for educational purposes?** use Moodle for learning?	0.930
The whole	0.975

Descriptive statistics show that perceived usefulness has the greatest percentage of approval (971), while, satisfaction has the second rate (0.966), and Ease of use has the last percentage of approval showing 0.930.

4.2 Moodle's Usefulness

Descriptive statistics for: How beneficial is Moodle for education?

The following table shows the descriptive statistics of the respondents' responses to the question: (How beneficial is Moodle for education?), where the respondents' responses fall into the following groups: (With Moodle I can perform my tasks quickly – Moodle is useful for study– Using Moodle improves my learning performance- In general using Moodle to learn I   convenient for me), where the table shows the numbers, percentages and degrees of approval for each of these groups, (strongly disagree - somewhat disagree - agree - strongly agree), as it shows The table is the means of the responses to these groups and their standard deviations. As well as the general mean of the axis as a whole and the level of satisfaction with the questions of the axis as a whole.

Table 2. Moodle's Usefulness

variable		Strongly Disagree	Disagree	To some extent	Agree	Strongly Agree	Mean	Std. deviation	Rank
PU- How useful is Moodle for learning?	With Moodle I can perform my tasks quickly	119	61	99	75	72	2.81	1.443	1
	Moodle is useful for study	118	83	65	84	76	2.81	1.477	2
	Using Moodle improves my learning performance	132	79	73	74	68	2.69	1.464	3
	Using Moodle helps me learn effectively	132	79	80	70	65	2.66	1.446	4
	In general, using Moodle to learn is convenient for me	140	78	71	75	62	2.63	1.457	5
Total mean		**2.71**	**Satisfaction Level**			**medium satisfaction**			

It is clear from the table that the highest mean was for the group (With Moodle I can perform my tasks quickly) with a mean of 2.81 and standard deviation 1.443, as well as the group (Moodle is useful for study) with a mean of 2.81 and standard deviation 1.477, while the lowest mean for the group (In general using Moodle to learn I convenient for me) fits me) with a mean of 2.63 and a standard deviation of 1.457.

It is also clear from the table that the level of satisfaction with this axis is medium. It is also clear that the means of the statements are close to each other, and that the numbers of those who rejected the contents of the statements outright by choosing (disagree or strongly disagree) are greater than the numbers of their counterparts who answered the same statements by choosing (agree or strongly agree).

4.3 Moodle's Perceived Ease of Use

How easy is it to use Moodle for learning?

The following table shows the descriptive statistics of respondents' responses to the question: (How easy is it to use Moodle for learning?), where the respondents' responses came within the following groups: (Moodle is easy to use - Finding course material and information is easy- Solving exams and homework doesn't require a lot of effort), where the table shows the numbers, percentages and degrees of approval for each of these groups, (strongly disagree - disagree - to some extent - agree - strongly agree), and the table also shows the means of the responses to these groups and their standard deviations. As well as the general mean of the axis as a whole and the level of satisfaction with the questions of the axis as a whole.

Table 3. Descriptive statistics for Perceived Ease of Use

variable		Strongly Disagree	Disagree	To some extent	Agree	Strongly Agree	Mean	Std. deviation	Rank
17- PEOU - How easy is it to use Moodle for learning?	Moodle is easy to use	127	50	91	87	71	2.82	1.468	1
	Finding course material and information is easy	110	85	97	78	56	2.73	1.369	3
	Solving exams and homework doesn't require a lot of effort	134	55	68	90	79	2.82	1.521	2
Total mean		2.79		Satisfaction Level		medium satisfaction			

It is clear from the table that the highest mean was for the group (Moodle is easy to use), where the mean of this group was 2.82 with a standard deviation of 1.468, as well as the group (Solving exams and homework doesn't require a lot of effort) with an mean of 2.82 and a standard deviation of 1.521, finally came the group (Finding course material and information is easy) with a mean of 2.73 and a standard deviation of 1.369.

As usual, this axis did not go beyond the level of medium satisfaction. The means of the statements are very close so that two of them are identical and only the standard deviation differs between them. in terms of proportions and numbers; Those who categorically rejected the contents of the statements by choosing (disagree or strongly disagree) are greater than those who accepted them by choosing (agree or strongly agree).

4.4 What are the Benefits of Using Moodle?

The following table shows the descriptive statistics of the respondents' responses to the question: (What are the benefits of using Moodle?), where the respondents' responses came within the following groups: (Moodle makes it easy to communicate with instructor and classmates- Moodle saves me time in searching for course information – Moodle helps me reach my goals in the course), where the table shows the numbers, percentages, and degrees of approval for each of these groups (strongly disagree - disagree - to some extent - agree - strongly agree), and the table also shows the average responses to these groups and their standard deviations. As well as the general mean of the axis as a whole and the level of satisfaction with the questions of the axis as a whole.

Table 4. Descriptive statistics for: what are the benefits of using moodle?

variable		Strongly Disagree	Disagree	To some extent	Agree	Strongly Agree	Mean	Std. deviation	Rank
What are the benefits of using Moodle?	Moodle makes it easy to communicate with instructor and classmates	123	85	98	71	49	2.62	1.357	3
	Moodle saves me time in searching for course information	120	77	102	68	58	2.69	1.387	2
	Moodle helps me reach my goals in the course	118	80	99	75	54	2.69	1.373	1
Total mean		2.66	Satisfaction Level			medium satisfaction			

It is clear from the table that the highest average was for the group (Moodle saves me time in searching for course information), where the mean of this group was 2.69 with a standard deviation of 1.378, as well as the group (Moodle helps me reach my goals in the course) with a mean of 2.69 and a standard deviation of 1.373, while finally came a group (Moodle makes it easy to communicate with instructor and classmates) with a mean of 2.62 and a standard deviation of 1.357.

As we note; The general level of satisfaction with the axis as a whole is also medium. We note here that the means of the three statements are completely identical, only the standard deviation distinguishes between them. in terms of proportions and numbers; Those who categorically rejected the contents of the paragraphs by choosing (disagree or strongly disagree) are greater than those who accepted them by choosing (agree or strongly agree).

4.5 Intention to Use: What is Your Intention to Use Moodle in the Future?

Table 5. Descriptive statistics for: Intention to use

Intention to use: What is your intention to use Moodle in the future?	I don't mind using to continue using Moodle when learning is back to normal		I prefer using Moodle less when learning is back to normal		I don't want to use Moodle after learning is back to normal		Mean	Std. Deviation
	yes	no	yes	no	yes	no		
	205 48.1%	221 51.9%	28 6.6%	398 93.4	150 35.2%	276 64.8	1.87	0.905

The following table shows the descriptive statistics of the respondents' responses to the question (Intention to use:

What is your intention to use Moodle in the future?), where the respondents' responses came within the following groups I don't mind using to continue using Moodle when learning is back to normal- I prefer using Moodle less when learning is back to normal- I don't want to use Moodle after learning is back to normal), as the table shows the numbers of responses of positive or negative respondents in each category, as well as the percentages, means and standard deviations of these numbers. As well as the general mean of the axis as a whole and the level of satisfaction with the questions of the axis as a whole.

It is clear from the table that the largest number of respondents chose the first option (I don't mind using to continue using Moodle when learning is back to normal) with a total of 205, and a percentage of 48.1%, while the least group of respondents came within the second group (I prefer using Moodle less when learning is back to

normal) With a total of 28 respondents and a rate of 6.6%, the mean response of the respondents to this question was 1.87, with a standard deviation of 0.905.

5. Conclusion

Although the questionnaire's axes did not go beyond the medium level of satisfaction in general, we find, through this table, that 48% of the respondents do not mind continuing to use Moodle after things return to normal, in addition to 6.6% who will continue to use Moodle But to a lesser extent. So, the total is 54.6 of the total number of sample members who continue to use Moodle, if we compare this percentage with the percentage of those who had no experience in e-learning before the pandemic, which is approximately 42% of the total number of sample members, we can say that Moodle succeeded in attracting This percentage and more is for e-learning in general and for Moodle in particular.

6. Recommendations

This paper recommends academics to continue using Moodle and implementing it in academia, as it has been evident to be a successful tool for transferring information to students. It has also been evident that at the beginning some students hesitated to use the program because they were not familiar with it. However, when they learned how to use Moodle and accessed instructor information in an efficient way, they found it a very useful that was also easy to use.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Canadian Center of Science and Education.

The journal and publisher adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

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Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

Open access

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