Adoption And Utilisation Of Learning /Course Management Systems: The Study Of University Of Professional Studies, Accra

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ABSTRACT: ***Technological changes are having a great impact on teaching and learning all over the world. Students in Ghana at the various levels, especially, the tertiary level are also becoming more technologically-inclined with most of them owning computers and having access to the world wide web. Access to smart phones is even making this easier. Oblinger and Oblinger, (2005) describe net generation students as highly literate, preferring to learn by doing experiential and also at ease with image-rich environments than text. For these and many other reasons, many universities (and even some senior secondary schools) around the world have course materials, lectures and discussions online in addition to classroom-based learning. Once online, students can access the latest information at any time and make copies of materials or download course materials and even partake in discussion forums, quizzes and turn in assignments online. Students can also communicate with instructors and other students whenever their schedules permit. This study sought to find out of the level of acceptance of the system and whether it is helping students get more from their courses. It also tested the some of the assumptions of the technology acceptance model (TAM) on which the study was based.***

KEYWORDS: ***Adoption, Utilisation, Moodle, Course Management Systems (CMS)***

I. INTRODUCTION

Technological changes are having a great impact on teaching and learning all over the world. Students in Ghana at the various levels, especially, the tertiary level are also becoming more technically skilled with most of them owning computers and having access to the world wide web. [1] describe net generation students as highly literate, preferring to learn by doing experiential and also at ease with image-rich environments than text. For these and many other reasons, many universities (and even some senior secondary schools) around the world have course materials, lectures and discussions online in addition to classroom-based learning. Once online, students can access the latest information at any time and make copies of materials or download course materials and even partake in discussion forums, quizzes and turn in assignments online. Students can also communicate with instructors and other students whenever their schedules permit.

Course management systems such as Moodle, Sakai, Angel and blackboard make this possible. Course management systems are web applications. This means that they run on a server and are accessed by using a web browser. It can be accessed from any place with internet connection. Moodle is an acronym for Modular-Oriented Dynamic Learning Environment. Moodle is also a verb that describes the process of lazily meandering through something or people doing things as it occurs to them in an enjoyable tinkering way often leads to insight and creativity, [2]. It is an open source learning or course management system (CMS) that universities, colleges, businesses, and even individual instructors use to add web technology to their courses. Open source software is in line with academic community's values of freedom, peer review, and knowledge sharing. Just as anyone can download and use Moodle for free, users can write new features, share it with others, use parts of it as one's own product and even improve its performance, [2]. From statistics,

there are about 85,390 registered Moodle sites in 240 countries with 1,167,903 teachers and 77,719,683 users around the world using Moodle to deliver online courses and to supplement traditional face-to-face learning [3].

The University of Professional Studies, Accra (UPSA) is no exception. For four semesters the university has adopted the use of Moodle as its learning or course management system in its quest to improve student-lecturer contact/communication and also make use of opportunities information communications technology bring to learning. The Moodle has become very central in the deployment of teaching and learning to the extent that interactive use of the CMS by faculty was one of the requirements for the confirmation and promotion of faculty members.

II. STATEMENT OF PROBLEM

A 2007 study showed that over 90% of all responding American universities and colleges have established one or more CMS products for student and faculty use, [4]. This, however is not a common case in Ghana. The fact is that from records, no African country is among the top-ten user countries of Moodle by registration [3]. On the other hand, the University of Professional Studies, Accra is making great strides in that regard. This is no surprise as one of its core visions is to be a world-class university, globally recognized and regionally entrenched. This makes it very important to get empirical evidence of the level of acceptance and patterns of usage and challenges with the system to help inform management of the university whether the purpose for which it was procured is being realized.

III. OBJECTIVES OF THE STUDY

The study sought to find out:

- Whether students knew about the Moodle
- Whether they used the system at all
- What they usually used the Moodle for (feature commonly used)
- Their perception about the system
- If they faced any challenges with Moodle

A. RESEARCH QUESTIONS

The following were the research questions for the study:

- Do students know about Moodle?
- Do students use it at all?
- What do students use Moodle for the most?
- What is their perception about Moodle?
- Are students facing any challenges with Moodle?

B. HYPOTHESES

H1: Perceived ease of use (EOU) of Moodle will have a significant positive influence on perceived usefulness (U).

H2: Perceived usefulness of the Moodle will have a significant positive influence on attitude (A) toward using Moodle.

H3:Perceived usefulness will have a significant positive influence on behavioral intentions (BI) to use Moodle.

H4: Attitude (A) using Moodle will have a positive significant influence on Behavioural Intention (BI).

C. SIGNIFICANCE

Findings in this paper have implications for quality teaching and learning with technology in UPSA and beyond. Findings on usage patterns and challenges with the system will go a long way to help the university to fine tune the system so that the full benefit that Moodle provides will be achieved.

IV. THEORETICAL PERSPECTIVES

A. THE SOCIAL CONSTRUCTIONISM

The social constructionism theory (social constructivist pedagogy) is at the core of the Moodle course management system where students are active and collaborative learners and not just receivers of

knowledge, [5]. This is said to be revolutionary, as most commercial course management systems are considered to be tool-centered, whereas Moodle is built around tool sets and not pedagogy (educational/instructional) making many classify it as learning-centered, [2].

The social constructionism or social construction of reality, is a sociology and communication theory that posits that understanding and meaning are developed not independently within the individual, but in harmonisation with other human beings. The main focus of social constructionism is to find out ways in which individuals and groups participate in the construction of their perceived social reality. Social reality is defined as a level of phenomena that emerges through social interactions and that cannot be reduced to the intention of individuals. The theory is based on the idea that people learn best when they are engaged in a social process of constructing knowledge, for example, through the act of constructing an artifact for others [6]. The elements most important to the theory are the assumptions that human beings rationalise their experience by creating a model of the social world and how it functions and that language is the most essential system through which humans construct reality, [7].

The term "social" points to the fact that learning is done in groups with the aim of exchanging meaning from information gathered. According to an essay by [8], this perspective stresses learning as a process of negotiating meaning in a culture of shared artifacts and symbols. It is assumed that human beings have some sort of "fore-knowledge, sometimes based on experience. For that reason we only negotiate meaning based on the knowledge we have and at the end of the process, add up to what we know already. Supporters of this theory, such as Martin Dougiamas, a computer scientist and educator, who also developed the Moodle, believe that we need to test new learning against our old beliefs and incorporate it into our existing knowledge structures.

Part of the process of testing and negotiating, he believes, involves creating artifacts and symbols for others to interact with. People create artifacts which in turn negotiate with others to define the meaning of those artifacts in relation to a shared culture of understanding. This is where the Moodle comes in. The first indication of negotiation is in the interface. While other CMSs support a content model that encourages instructors to upload a lot of static content, Moodle focuses on tools for discussion and sharing artifacts. The focus is not on delivering information; it is on sharing ideas and engaging in the construction of knowledge. Moodle's design philosophy makes this a uniquely teacher-friendly package [2].

With regard to this, the study sought test to "negotiation" with regard to interactivity and accessibility of the system by users.

B. TECHNOLOGY ACCEPTANCE MODEL (TAM)

Technology Acceptance Model (TAM) was developed by [9]. The model has its roots in a number of diverse theoretical perspectives, most notably, the theory of reasoned action (TRA) developed by [10].

TRA has been used to explain, in more detail, how user beliefs and attitudes are related to individual intentions to perform an action. TAM predicts user acceptance of technology based on the influence of two factors: perceived usefulness (PU) and perceived ease of use (PEOU). TAM suggests that user perceptions of usefulness and ease of use defines attitudes toward using the system (A).

TAM, in line with TRA, predicts that behavioral intentions to use a system (BI) determines the attitude toward (A) using the system. According to the TAM model, behavioral intentions (BI) to use a system in turn determines actual system use (U). TAM defines perceived usefulness (U) as the degree to which a user believes that using the system will enhance his/her performance.

Behavioral intentions to use (BI) are modeled as a function of A and U, Morris and Dillon [11]. BI then determines actual use. Research has consistently shown that BI is the strongest predictor of actual use, [12, 13a &13b].

According to [14], there exists a direct relationship between perceived ease of use and perceived usefulness. In other words, between two systems offering identical functionality, a user should find the one that is easier to use more useful, [14]. The goal of TAM is to predict information system acceptance and diagnose design problems before users have any significant experience with a system [9].

This study sought to find out if some of these relationships that have been predicted in the TAM exist in the use of the Moodle learning management system on the UPSA campus. In essence, since TAM is concerned with information system acceptance at the early stages of usage, this study sought to test some of the cause-effect relationships predicted by the TAM in line with the Moodle learning management system. Other variables such as awareness and interactivity were also examined.

V. LITERATURE REVIEW

Various studies have been conducted on the use of CMSs. Some have been done by simply employing tracking tools such as Course Vis which helps measure students' use of CMSs. In a study by [15] using student tracking, the researchers' focus was on the effectiveness of the course management system throughout the semester. Ninety percent of students said that was their first experience using any such system. It was found that students who used the CMS frequently throughout the semester received average or above-average final course grades while students who did not visit the CMS as frequently received below-average course grades. While students enjoyed using the system and found it convenient and helpful, [15] concluded that it is the responsibility of the instructor to ensure that the CMS technology is used to benefit learning so students will be encouraged to use it.

In another study, researchers investigated six weeks of Moodle access logs of sixty undergraduates enrolled in either a statistics or computer science course, [16]. The researchers supplemented the log data with a brief survey in order to obtain demographic and attitudinal data. It was found that, students who accessed the Moodle frequently achieved better course performance than students who had "low" access rates.

[17]carried out a study on the use of Moodle adopted for the Center of Integrated Human Studies (IHS) of the University of Australia in line with the goals of the use of ICT in the Australian curriculum such as developing the capacity of students to learn and play active role in their own learning and recognizing the creative and productive use of technology in all learning areas. The IHS also had the objective of promoting collaboration and communication in learning. The researchers sought to find out the views of post graduate students enrolled on courses at the centre on the effectiveness of the Moodle in achieving the aims of the IHS courses.

Out of 29 students, 20 students enrolled took part in the survey. Some of the findings were that, at least 75% agreed (or strongly agreed) that Moodle enabled the IHS course to achieve the objective of communication and collaboration with other students to be developed, development of independent learning skills and communication with the course coordinator. Also 90% of respondents found Moodle to be effective. About 25% also thought it was not effective in enabling leadership skills to be demonstrated.

On what was most effective in supporting learning at the IHS, some of the findings were: weekly posts (95%), contacting course coordinator (80%), submission of assignments (80%) and use of grade book for feedback on marks (80%). On the other hand, students identified messaging capacity to provide notifications and communication with other students as the least effective.

[18] examined undergraduate students' perception about their experience with features of course

management systems. The researchers used 18,039 freshmen and senior respondents. More than 72% reported the use of course management systems. The syllabus or course outline feature was noted to have been used more than any other feature - (95%), followed by online reading (reading of course material or resources)- (94%).

This finding is similar to that of [19]. In that study of CMS use by students of University of Michigan, out of 13 functions, syllabus, online reading, quizzes/exams and turning in assignments, respectively, were considered the most helpful. In terms of findings for the least helpful chatting was found to be one of them which is slightly related to [17] study in which students identified messaging capacity to provide notifications and communication with other students (which is related to chatting) as the least effective.

[18], most students, in an answer to an open-ended question appreciated the flexibility with which the system comes with, that is, the fact that they could study course materials whenever and wherever they wanted. This is also related to a study by [20]. A comparative survey of 134 undergraduates reported satisfaction in online and on-campus contexts. Higher satisfaction was reported for online than for on-campus, although results showed that the effectiveness of the instruction was hampered by technical problems and inadequate technical support and technical skills among students. All of these findings are significant and would be useful comparing with results from this study.

VI. METHODOLOGY

Undergraduate first year and second year regular students of the University of Professional Studies were used for the study. First year students were a group of people who were likely to have been having their first ever experience with such a system and second year students were those who had used the system for not less than three semesters- they were the first group to have used the system in the university.

The sample selection was based on what has been prescribed by [21] as the ideal number of sample with regard to the population of study. The determination of sample size is based on a formula by the research division of the National Education Association of America found in the article "Small Sample Techniques,":

$$s = X2NP(1-P) \div d2\,(N-1) + X2P(1-P).$$

The formula is explained below:
s = required sample size.
$X2$ = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).
N = the population size.
P = the population proportion (assumed to be .50 since this would provide the maximum sample size).
d = the degree of accuracy expressed as a proportion (.05).
Based on this formula, a table has been developed for easy reference to the sample to be used depending on the total number of population. The researcher drew two samples from the total populations of first year and second year regular students. The total number of first year students were two thousand , eight hundred (2,800) and that of second year students were thousand, six hundred and eighty four (1,684) which was rounded up to thousand seven hundred (1,700). Based the recommended sample size proffered by [21], 338 first year students and 317 second year students making six hundred and sixty five (655) students made up the total sample.

The frame consisted of the list of students from the various groupings in the two years/levels obtained from the class representatives. The sample was selected through the simple random sampling by first of all dividing the sample size by the various groupings. Afterwards the numbers obtained were randomly selected from each group.

VII. FINDINGS/DISCUSSION

Table 1: Awareness

Level	Do you know about the UPSA online learning management system called Moodle?		Total
	YES	NO	
100	334 (99.4%)	2 (0.6%)	336 (100.0%)
200	311 (98.7%)	4 (1.3%)	315 (100.0%)
Total	645 (99.1%)	6 (0.9%)	651 (100.0%)

The findings show that almost all (99.4%) the respondents from level 100 had knowledge about Moodle and only less that 1 percent (0.6%) of level 100 students said they did not know about Moodle.

With level 200s more than nine out of 10 (98.7%) have knowledge about the learning management systems and less one out 10 (1.3%) have no knowledge about the system. Generally, more than one out of 10 of both 100s and 200s had knowledge about the UPSA learning management system called Moodle.

Overall, almost all students knew about the Moodle course management system- about 9 out of 10 students (99.1%). Only 9% of students said they did not know about Moodle. But, this was quite surprising considering the fact that every student is supposed to use it and all lecturers are required to use it as a secondary means of disseminating and making available course materials to students. Of those who said they did not know about it, there were more level 100s as compared to 200s.

A. USAGE

Table 2: Level by usage cross Tabulation

Level	HAVE YOU USED IT BEFORE?		Total
	YES	NO	
100	333 (99.1%)	3 (0.9%)	336 (100.0%)
200	310 (97.8%)	7 (2.2%)	317 (100.0%)
Total	643 (98.5%)	10 (1.5%)	653 (100.0%)

The findings show that almost all the level 100s (first years) had used Moodle before. Also, more than nine out of 10 (97.8%) of level 200s (second years) had used it before. However, less than 3 percent (2.2%) said they had not used it before.

The number of respondents in level 100 who had not used it were lesser (0.9%) as compared to the level 200s who had not used it (2.2%). However, of those who said they knew about it, a significant number, that is, more than nine out of 10, (98.5%) of both 100s and 200s had used the system before.

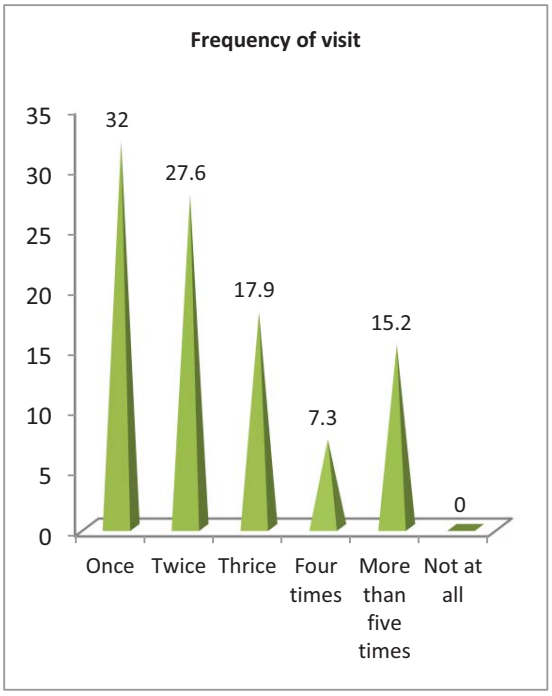
Table 3: Gender by usage Cross tabulation

	HAVE YOU USED IT BEFORE?		Total
	YES	NO	
MALE	291 (99.3%)	2 (0.7%)	293 (100.0%)
FEMALE	349 (97.8%)	8 (2.2%)	357 (100.0%)
Total	640 (98.5%)	10 (1.5%)	650 (100.0%)

It can be observed from Table 2 that almost all (more than nine out or 10) of the male respondents (99.3%) had used Moodle before and less 1 percent (less than one out of 10) had not used Moodle before. Of the female respondents, almost all (more than nine out of 10) have used Moodle before and less than 3 percent (less than one out of 10) have not used Moodle before. A significant number of both male and female

students have used Moodle although more females (2.2%) have never used it before as compared to the number of males (0.7%) who have not used Moodle before.

Chat 1: How many times in a week do you visit the Moodle?



From findings, all students who used the platform had visited it at least one time during the week. The majority of responses was for once a week (32%). Quite a number (15%) opted for more than five times in a week. This shows there was huge patronage of the system by students.

Table 4: Features Commonly used

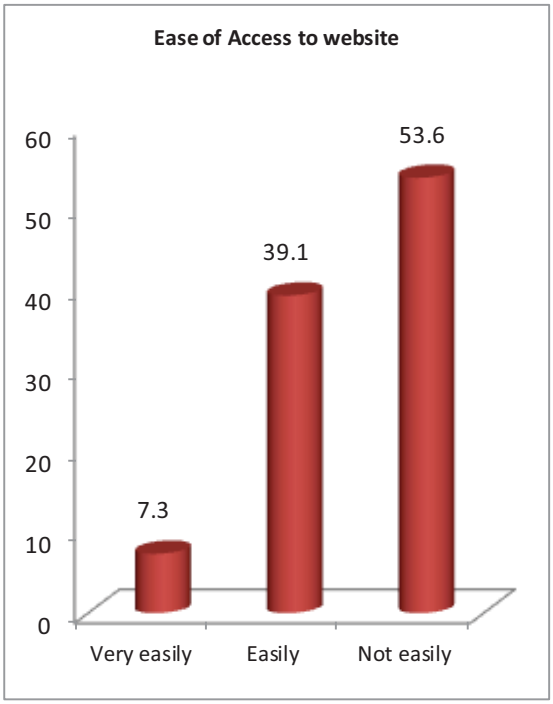
	Responses		Percent of Cases
	N	Percent	
Access course outline	197	14.50%	31.30%
Read notice	176	13.00%	28.00%
Read/Accesing course materials/resources	345	25.40%	54.80%
Communicate with lecturers/Forum	58	4.30%	9.20%
Uploading of assignments	360	26.50%	57.20%
Taking part in quizzes	222	16.30%	35.30%
Total	1358	100.00%	215.90%

More responses were for "uploading of assignments" followed by "Accessing course materials" The least checked was using the Moodle to communicate with lectures and partaking in forums. This is in contrast to the findings of [18] who found that the syllabus or course outline feature was the most patronised more than any other feature - (95%).

In this study the course outline feature took the third position. However, reading or having access to course materials followed up in the second position as was found in [18] and [19]. In this study, "Communicating with Lecturers" was the least patronized feature which is slightly related to [17] and [18] study in which students identified messaging capacity to provide notifications and communication with other students (which is related to chatting) as the least effective.

B. EASE OF USE

Chat 2: How easy is it to access the website?

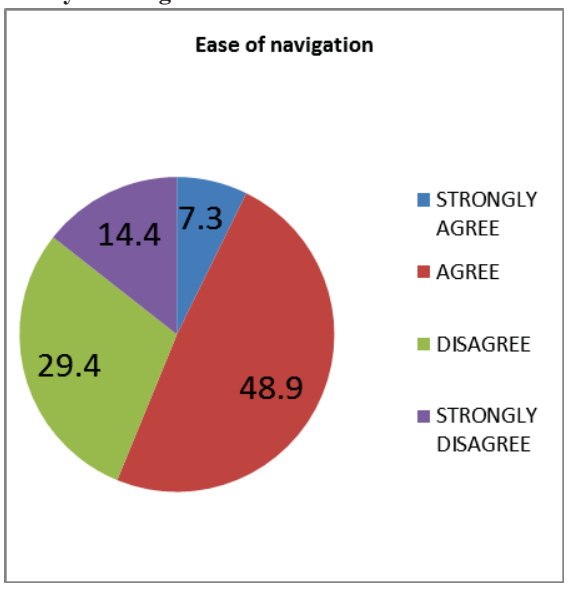


About one (1) out of five (5) students admitted that is was not easy to get access to the main website of the CMS. This may be not surprising considering the flactuative nature of internet accessibility in this part of the world but the point is that if that situation is as a result of the omission or commission of the hosts of the website then something has to be done about it.

Chat 3: How easily students are able to download content from the Moodle.

It was important to establish whether students were able to download content even after assessing the site. A little more than half of the students (52.2%) said it was not easy to download content from the platform. On the other hand, quite a number said they could download content easily (37%) , very easily (9.2%) and always easily (1.7%).

Chat 4: The Moodle learning management system is easy to navigate



A question was posed to find out how much students were convinced about the fact that Moodle was easy to navigate, that is find their way around on the site. Almost half of respondents (48.9%) agreed and 7.3% strongly agreed. On the other hand quit a number (29.4%) disagreed to the statement that Moodle was easy to use.

C. USEFULNESS

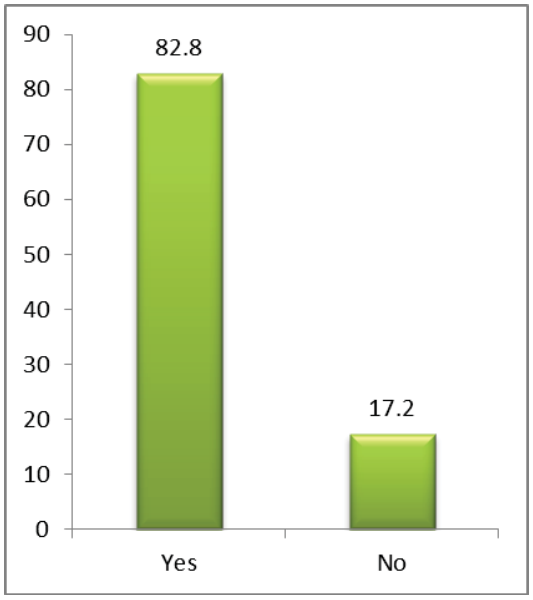
Table 5: Moodle is useful in my studies.

	Frequency	Valid percent
Strongly agree	152	24.1
Agree	351	55.5
Disagree	98	15.5
Strongly disagree	31	4.9
Total	632	100.0

According to the TAM the usefulness of a system is crucial to the adoption and usage of the same. So it was important to explore into perceived usefulness of the system. The question that was posed was to measure the extent to which students agreed to the fact that Moodle was useful to their studies. Majority of them were in favour of the fact that Moodle was useful to their studies as the opted for "strongly agree"- 24.1%, "Agree"- more than half (55.5%). When these two choices are put together, it can be confidently said that almost 8 out of 10 (79.6%) believed that Moodle was useful in their studies

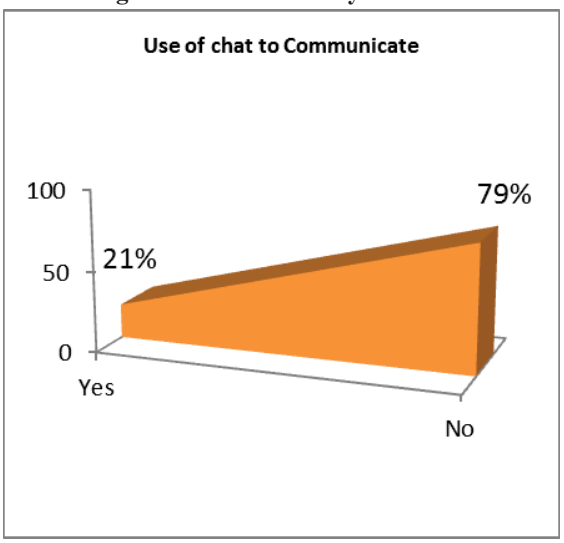
D. PERCEPTION

Chat 5: Using Moodle is a good idea



To measure perception, respondents were asked to react negatively or positively to the statement that using Moodle was a good idea. More than 8 out of 10 (82.8%) respondents were in approval of the statement.

Chat 6:Negotiation-Interactivity



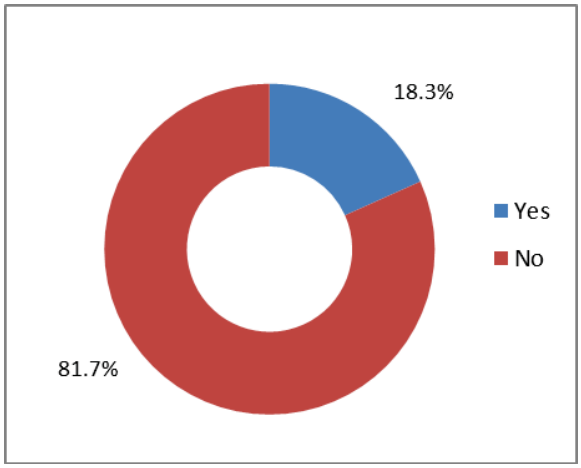
The development of the Moodle course or learning management system was grounded in the idea that users will negotiate or construct meaning and one of the ways of doing that is that users can interact with other users including course instructors and course mates on matters pertaining to the course. Respondents were asked whether they had used the chat platform and from answers, most of them (79%) answered in the negative. This calls for more investigations as to why that platform is hardly used by most students.

Table 6: If yes, whom did you chat with?

	Frequency	Valid percent
Course mate	83	48.8
Lecturer	67	39.4
Other	20	11.8
Total	170	100.0

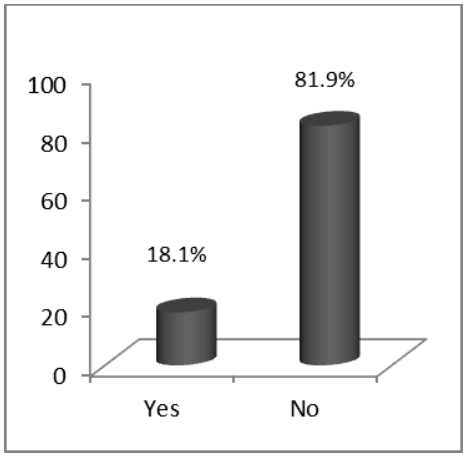
Of those who used the chat, almost half of them (48%) said they used it to communicate with other colleagues and quite a number (39.4%) used it to communicate with their lectures. The rest said they used it to communicate with other people but none was specific as to who those people were.

Chat 7: Have you left a message on the message platform before?



Still on interactivity, there is a messaging platform which provides avenue for sending messages in the form of questions, comments, feedback, etc. to course mates and lecturers. About 8 out of 10 (81.7) students said they had not used it. The question now is why the students are not using that platform.

Chat 8: Do you usually get feedback on your messages from your lecturers?

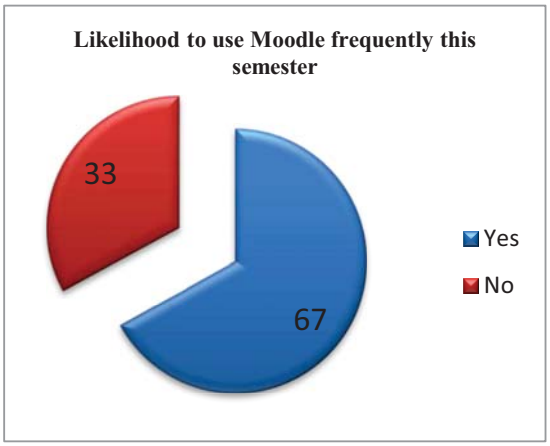


Of those who had ever left a message for anyone, less than 1 out of 20 (18.1%) ever received feedback on

their messages. The question was posed in another way for respondents to select from a scale of preference- quite often, very often , not often and rarely. Most respondents said they rarely got feedback on their messages. Most selected "rarely" (45.3%) and "not often" (40.4%). This may explain why most students did not use the messaging feature of the Moodle.

Behavioural intention (BI) is one of the constructs of the theory backing this study (TAM). It is assumed that the intention to use a system is likely to affect the attitude (A) and usefulness (U) of a system.

Chat 9: Behavioural Intention



Challenges	Frequency	Valid Percent
Access to internet in general	250	41.5
Ease of logging into the learning system	262	43.4
Ease of downloading content	82	13.6
Moodle is sometimes inaccessible	5	.8
Ease of uploading content	3	.5
Other	1	.2
Total	603	100.0

To test "intention" respondents were asked whether they thought they were likely to use Moodle frequently this semester (presently) and more than half, about 6 out of 10 respondents admitted that they ere likely to use it frequently this semester. The rest were not positive with their responses- about 4 in 10 respondents (33%).

	Frequency	Valid percent
Strongly agree	150	23.6
Agree	362	56.9
Disagree	124	19.5
Total	636	100.0

Table 7: Likihood to use Moodle for the remainder of studies

For their intention to use the system in the "long term" that is, for the rest of their studies on campus, respondents were asked to select from a range of responses- 23.6% of them strongly believed they would use it for the rest of the years on campus, more than half (56.9%) agreed, together making 80.5%. The rest did not think they would use it for the remainder of their years on campus. This means that out of a 100 students, 80 of them believed they will use Moodle for the rest of their studies on UPSA campus. This could be a s a result of the usefulness and attitude of the system which is tested as hypothesis

Table 8: Challenges With the System

Findings show that more than 4 out of 10 (43.4%) of respondents said it was not easy logging into the learning management system. Also, more than 4 out of 10 (41.5%) said they did not have internet access. Challenge with ease of downloading content was selected by more than 1 out of 10 (13.5%) respondents. Less than 1 out of 10 (0.8%) said Moodle was sometimes inaccessible and less than 1 out of 10 (0.5%) said it is not easy uploading content

on Moodle. Generally, the most challenging problems confronting respondents were ease of logging into the learning system and access to internet in general.

E. HYPOTHESES TEST

To establish relationships among variables in the hypotheses put up for the study, Chi-square tests were performed. Further correlation tests were also performed to establish the type of relationships that existed among variables, be it positive or negative.

H_0: Perceived Ease of Use (EOU) of Moodle will not have a significant positive influence on Perceived Usefulness (PU)

H_1: Perceived Ease of Use (PEOU) of Moodle will have a significant positive influence on Perceived Usefulness (PU).

The findings show that of students who strongly agreed that Moodle learning management system is easy to use, six out of 10 (60.0%) maintained (strongly agreed) that Moodle is useful in their studies, close to 30 percent (28.9%) of students who strongly agreed that Moodle learning management system is easy to use also agreed that Moodle is useful in their studies.

However, less than 7 percent of students who strongly agreed that Moodle is easy to use strongly disagreed (6.7%) and disagreed (4.4%) that Moodle is useful in their studies. Of those who agreed that Moodle learning management system is easy to use, more than 60 percent (65.9%) maintained (agreed) that Moodle was useful in their studies and 24.0 percent strongly agreed that Moodle was useful in their studies.
Even of students who disagreed that Moodle learning management system is easy to use more than half (54.5%) agreed that it is useful in their studies and 16.0 percent strongly agreed that it is very useful.

Table 9: Ease of use by usefulness of Moodle in studies Chi-Square Test

	MOODLE IS USEFUL IN MY STUDIES.				Total
	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	
STRONGLY AGREE	27 (60.0%)	13 (28.9%)	2 (4.4%)	3 (6.7%)	45 (100.0%)
AGREE	74 (24.0%)	203 (65.9%)	27 (8.8%)	4 (1.3%)	308 (100.0%)
DISAGREE	30 (16.0%)	102 (54.5%)	46 (24.6%)	9 (4.8%)	187 (100.0%)
STRONGLY DISAGREE	21 (23.6%)	31 (34.8%)	22 (24.7%)	15 (16.9%)	89 (100.0%)
Total	152 (24.2%)	349 (55.5%)	97 (15.4%)	31 (4.9%)	629 (100.0%)

$\chi^2 = 109.435$ $\rho = 0.00$ $df = 9$

And of those who strongly disagreed that Moodle learning management system is easy to use, more than 34.8 percent agreed and more than 23.6 percent strongly agreed that it is useful in their studies. The findings suggest that whether student disagreed or strongly disagreed and agreed or strongly agreed, they still hold the view that Moodle is useful in their studies.

A chi-square test was performed to examine the relation between perceived ease of use of Moodle and its influence on perceived usefulness of Moodle. The relation between these variables was significant, X2 (9, N = 629) = 109.435, $p < 0.05$. This means the null hypothesis was rejected. The study therefore statistically support the research hypothesis that: perceived ease of use of Moodle will have a

significant positive influence on perceived usefulness.

Statistically, testing the null hypothesis from the Table 9, the probability (0.00) accompanying the chi square value of (109.435) and the degree of freedom of 9 is less than the significance level of 0.05.

This means the null hypothesis (H_0) was rejected and that the data generated by this study therefore statistically supports the research hypothesis that: perceived ease of use of Moodle will have a significant positive influence on usefulness of Moodle.

Table 10: Correlation Test Of Ease of Use and Usefulness

		The Moodle Learning Management System Is Easy To Use	Moodle is useful in my studies.
The Moodle Learning Management System Is Easy To Use	Pearson Correlation	1	.280**
	Sig. (2-tailed)		.000
	N	646	629
Moodle Is Useful In My Studies.	Pearson Correlation	.280**	1
	Sig. (2-tailed)	.000	
	N	629	632

**. Correlation is significant at the 0.01 level (2-tailed).

A correlation for the data revealed that perceived ease of use of Moodle and perceived usefulness were significantly related, r = .28, N = 629, p < .05 which was the significance level set for the study. The research hypothesis (H_1) that: Perceived Ease of Use (PEOU) of Moodle will have a significant positive influence on Perceived Usefulness (PU). That is, if Moodle becomes more easy to use, more students will consider Moodle to be very useful and are going to use it.

H_0: Perceived Usefulness of Moodle will not have a significant positive influence on attitude

H_2: Perceived usefulness of Moodle will have a significant positive influence on attitude

Table 11: Usefulness Studies by Using Moodle Is A Good Idea (perception) Chi-Square Test

	USING MOODLE IS A GOOD IDEA		Total
	YES	NO	
STRONGLY AGREE	142 (94.7%)	8 (5.3%)	150 (100.0%)
AGREE	319 (92.7%)	25 (7.3%)	344 (100.0%)
DISAGREE	48 (50.0%)	48 (50.0%)	96 (100.0%)
STRONGLY DISAGREE	6 (20.7%)	23 (79.3%)	29 (100.0%)
Total	515 (83.2%)	104 (16.8%)	619 (100.0%)

$\chi^2 = 193.23$ $\rho = 0.00$ df= 3

Almost all (94.7%) the respondents who strongly agreed that Moodle is useful in their studies said using Moodle is a good idea and less than 6 percent (5.3%) however said Moodle is not a good idea. Similarly, almost all students who agreed that Moodle is useful in their studies said using Moodle is a good idea and less 8 percent (7.3%) said using Moodle is not a good idea. Of those who disagreed that Moodle is useful in their studies, half said using Moodle is a good idea and half maintained using Moodle is not a good idea. Of those who strongly disagreed that Moodle is useful, close 80 percent (79.3%) maintained that using Moodle is not a good idea and 20.7 percent said that using Moodle is a good idea. Generally, most of the respondents believed that using Moodle is useful and that using it a good idea.

Statistically, testing the null hypothesis (H_0) from Table 11, the probability (0.00) accompanying the chi square value of (193.237) and the degree of freedom of 3 is less than the significance level of 0.05 which was set for the study. This means the null hypothesis was rejected and that the data generated by this study therefore statistically supports the research hypothesis that: Perceived usefulness of Moodle will have a significant positive influence on attitude.

Table 12: Correlation Test of EOU and Perception

		Moodle Is Useful In My Studies	Using Moodle Is A Good Idea
Moodle is useful in my studies.	Pearson Correlation	1	.482**
	Sig. (2-tailed)		.000
	N	632	619
Using Moodle Is A Good Idea	Pearson Correlation	.482**	1
	Sig. (2-tailed)	.000	
	N	619	632

Correlation is significant at the 0.01 level (2-tailed).

A correlation for the data revealed that perceived usefulness (PU) of Moodle and Attitude(A) were significantly related, r = .48, N = 619, p < .05 the significance level set for the study. And the research hypothesis (H_1) that: Perceived Usefulness (PU) of Moodle will have a significant positive influence on Attitude (A) is supported. That is, if more students consider Moodle to be useful, more students will change their attitude towards Moodle and consider it a good platform to construct knowledge.

H_0: Perceived Usefulness (PU) will have a significant influence on Behavioral Intention (BI).

H_3: Perceived Usefulness (PU) will have a significant influence on Behavioral Intention (BI).

Table 13: Perceived Usefulness and Behavioural Intention to use Moodle Chi-Square Test

Usefulness	Likelihood to use Moodle		Total
	YES	NO	
STRONGLY AGREE	124 (81.6%)	28 (18.4%)	152 (100.0%)
AGREE	251 (72.5%)	95 (27.5%)	346 (100.0%)
DISAGREE	40 (42.1%)	55 (57.9%)	95 (100.0%)
STRONGLY DISAGREE	6 (19.4%)	25 (80.6%)	31 (100.0%)
Total	421 (67.5%)	203 (32.5%)	624 (100.0%)

$\chi^2 = 78.37$ $\rho = 0.000$ $df = 3$

The findings show that of those who strongly agreed that Moodle is useful in their studies, more than 80 percent (81.6%) said they are likely to use Moodle frequently for the remainder of their studies and less than 20 percent (18.4%) said they were likely to use Moodle to for the remainder of their studies Also, of those who agreed that Moodle is useful in their studies more than 72.5 percent said they were likely to use Moodle for the remainder of their studies and less 30 percent (27.5%) said they were not likely to use Moodle for the remainder of their studies.

Of those who disagreed that Moodle is useful in their studies, more than half (57.9%) said they were not likely to use Moodle for the remainder of their studies and of those who strongly disagreed that Moodle is useful in their studies, 80.6 percent said they were not going to use it for the remainder of their studies and less the 20 percent (19.4%) said they would use it for the remainder of their studies.

When the data was subjected to a chi square test, the Pearson chi-square value was 78.387 with degree of freedom of 3 and probability of 0.00. The probability of 0.00 is less than the level of significance 0.05 which was set for the study, which means a rejection of the null hypothesis (H_0). Therefore, the research hypothesis (H_3) that perceived usefulness will have a significant influence on behavioral intention is supported by the data gathered.

Table 14: Correlation Test of Perceived Usefulness and Behavioural Intention

		Moodle is useful in my studies.	Likelihood to use Moodle
Moodle Is Useful In My Studies.	Pearson Correlation	1	.334**
	Sig. (2-tailed)		.000
	N	632	624
Likelihood to Use Moodle	Pearson Correlation	.334**	1
	Sig. (2-tailed)	.000	
	N	624	637

**. Correlation is significant at the 0.01 level (2-tailed).

A correlation for the data revealed that perceived usefulness of Moodle and attitude were significantly related, r = .33, N = 624, p < .05 which was the significance level set for the study. The research hypothesis (H_1) that: Perceive usefulness of Moodle will have a significant influence behavioral intention is supported. That is, if more students consider Moodle to be useful, more students are likely to use Moodle frequently this semester or for the remainder of their studies.

H_0: Attitude (A) using Moodle will not have a significant positive influence on Behavioural Intention (BI)

H_4: Attitude (A) using Moodle will have a positive significant influence on Behavioural Intention (BI).

Table 15: Attitude by Likelihood to Use Moodle Chi-square Test

	Likelihood to use Moodle			Total
	STRONGLY AGREE	AGREE	DISAGREE	
YES	140	328	52	520
	26.9%	63.1%	10.0%	100.0 %
NOT	9	29	68	106
	8.5%	27.4%	64.2%	100.0 %
Total	149	357	120	626
	23.8%	57.0%	19.2%	100.0 %

$\chi^2 = 166.958$ $\rho = 0.000$ df= 2

The findings show that more than six out of 10 (63.1%) of respondents who said using Moodle is a good idea agreed that they are likely to use Moodle for the remainder of their studies and more than two out of 10 (26.9%) of respondents who said using Moodle is a good idea strongly agreed that they are likely to use Moodle for the remainder of their

studies on campus. Of those who said using Moodle is not a good idea more than six out of 10 (64.2%) disagreed that they are likely to use Moodle for the remainder of their semester on campus. Generally, the findings show of those who said using is a good most of them strongly agreed and agreed that they are likely to use Moodle for the remainder of the semester and for those who said that using Moodle is not a good idea, most of them strongly disagreed that they are likely to use Moodle the rest of the semester.

Statistically, testing the null hypothesis (H_0) from the Table, the probability (0.00) accompanying the chi square value of (166.958) and the degree of freedom of 2 is less than the significance level of 0.05 which was set for the study. This means the null hypothesis is rejected and that the data generated by this study therefore statistically supports the research hypothesis that: Attitude using Moodle will have a significant positive relationship with behavioural intention.

Table 16: Correlation Test of Attitude and Bahavioural Intention

		Using Moodle is a good idea (Attitude)	Likelihood to use Moodle
Using Moodle is a good idea (attitude)	Pearson Correlation	1	.416**
	Sig. (2-tailed)		.000
	N	632	626
Likelihood to use Moodle	Pearson Correlation	.416**	1
	Sig. (2-tailed)	.000	
	N	626	636

**. Correlation is significant at the 0.01 level (2-tailed).

Correlation for the data revealed that attitude towards the use of Moodle and behavioural intentions were significantly related, r = .416, N = 632, p < .05 was the significant level set for the study. The research hypothesis (H4) that: Attitude using Moodle will have a positive significant influence on behavioural intention is supported. That is, the more students have a positive attitude towards using Moodle, the more they are like to use Moodle for the remainder of their studies.

VIII. CONCLUSION

Findings from the study show that Moodle has generally been accepted by students of UPSA. Most respondents found it to be useful and even have the intention to use it for the rest of their studies on campus. Awareness and usage are high (99.1%) but there is still a minority who acknowledged they did not know about Moodle and have not used it (1.5%). This is quite surprising considering that fact that every student on a course in the University is supposed to know about Moodle be actively using it. Lecturers are supposed to use it to support their work including, conducting quizzes, administering assignments, making course outlines, lecture notes and other learning resources available to students.

The question now is why some students admitted they had no knowledge of Moodle. Could the negative answers have been bourn out of mischief? Or was it the reality on the ground?

On usage patterns, more responses were for "uploading of assignments" (26.5%), followed by "Accessing course materials" (25.4%). The least checked was using Moodle to communicate with lecturers and partaking in forums (4.3%). It can be conveniently be concluded that Moodle is not considered a perfect medium for interaction among respondents used for the study. Considering the fact that, by observation, students are glued to social media which provides avenue for chats, it becomes surprising that most respondents were not using the chat and messaging feature of Moodle. The reason could be one of these; that users do not get to find other users online to chat with in real time, or there are usually no forums posted by lecturers or because there is usually no feedback on messages even when messages are left for lectures. Almost all features are not being used actively considering the percentages of use of various features including the most popular feature which allows for the upload of assignments.

The use Moodle does not come without challenges. Findings show that the prevailing challenges were difficulties associated with logging into the learning management system (43.4%) and general internet access (41.5%). Other challenges were ease of downloading content (13.5%) even after successfully logging into the system.

Perception (PU, PEOU and A, BI) about the Moodle course management system is largely positive and this has direct influence on the intention of users to use the system for the rest of their studies on campus as seen from the results of the correlation test. This positive signal provides an opportunity for the university to use Moodle more aggressively than it has ever done. It demands that lecturers compel students to use it by putting more information there. The chat and messaging platform are features that help with collaboration and construction of knowledge. It is important to make full use of these platforms to be able to achieve the full "negotiation" and "construction" of knowledge which Moodle grounded in.

IX. RECOMMENDATION

Based on findings from this study, the following have are being recommended:

The hosts of the system must put in all measures necessary for the smooth running of the site to ensure ease of access to the website and downloading of content from it;

There should be a specially designated IT support for students to handle complaints and provide assistance to students when they have challenges with the system;

Interactivity is very important in the use of Moodle so it is recommended that lecturers set times for interactions with their students, at least, once in a week. Also, forums must be frequently posted on the system for students to contribute to;

Lecturers should constantly use it (for assignments, interim assessments, etc) to compel students to also use the system and; Future studies could focus on lectures' use of the system. There could also be research in areas of interactivity and collaboration between students and lecturers.

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