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Pre-Service Teachers' Perception towards Integration of Learning Management System to Instruction

By Omotunde Christopher Tayo
Adeyemi Federal University of Education, Nigeria

Abstract- Learning Management Systems (LMS) are web-based systems which allow instructors and students to share materials and interact online. This study examines pre-service teachers' perception towards the integration of LMS into their instruction. The study adopted a descriptive research design using simple survey method. The samples were drawn from five faculties, totaling nine hundred and fifty-four (954) pre-service teachers of Adeyemi University of Education, Ondo. Data collected were analyzed using t-test and Pearson Correlation to determine relationship between variables and the level of significance set at 0.05.

Findings from the study based on the variables (gender, age level of study and department) has shown that pre-service teachers have a positive perception to the integration of LMS into their instruction and if it's used effectively, it will increase the efficiency of the educational process, decrease the amount face-to-face instruction and strengthen self-study and thus develop student's learning competences.

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I. Introduction

Technology has inevitably become the most powerful tool in almost all aspect of human's daily life. It is regarded as a major revolution and it has a significant impact on education (Jegede, 2006). The present use of information communication technology (ICT) is the new paradigm shift in learning in the 21st century. This technological advancement allows people to easily access, gather, analyze and transfer data and knowledge. According to (Horton and Horton 2003), trends in technology influence education and knowledge management. In Nigeria and other Africa countries, the number of students enrolling for undergraduate level courses has been on a sharp rise. Lectures are being held in large lecture theatres as learning spaces is becoming less available and student-teacher interaction is on the decline. The need for the development of ICT, concomitant with the internet is a global resolution and has been a subject of great significance to all mankind (Olaofe, 2005). These technologies have however become an integral part of our daily activities, learning inclusive.

Author: e-mail: talkingchris@hotmail.com

The rapid development of ICT has led to its increased use in instruction and learning (Cappel and Hayen, 2004; Kim and Ong, 2005) and many Nigerian institutions are already implementing this as part of their academic program. Even if ICT has not revolutionized the classroom, it is changing the learning experience of students (Gambar and Okoli, 2007). Several studies have underscored the benefits of ICT in education. The computer-assisted-instruction was found more efficient in all educational level and with lower achieving students (kulik, 1983;Kulik and Cohen, 1980). Information and communication technology significantly improves learners' problem-solving skills, provide opportunity for learner-constructed learning, increase learners' cooperation on projects, enhance mastery of vocational and workforce skills, increase the preparation of learners for most careers and vocation and develop confidence and attitude of learners (Cradler and Bridgeforth, 2006).

In Nigeria, very few of our conventional higher institution are now carrying out their activities through one form of ICT. While the urge to embark on online instruction is still a dream to some because of weak ICT infrastructure, the rapid expansion of ICTs and Internet technologies offers an opportunity for some few institutions to embark on the use of Learning Management System (LMS) for instruction.

Laster (2005) defines learning management system as a self-contained web page embedded with instructional tools that permit academic staffs to organize academic content and engage students in their learning. Elis (2009) sees it as a software application for administration, documentation, tracking and reporting of training programmes, classroom and online events, e-learning programmes and training content. Learning management system ranges from systems for managing training and educational records, to software for distributing courses over the internet with features for online cooperation. The introduction of online instruction to teaching and learning process has afforded teachers and learners to carry out their responsibilities effectively. Teachers can now serve their ultimate functions of moderators and facilitators in the instructional process and learners also learn at their own convenience.

Baily (1993) presents the following general characteristic for an LMS in education:

- Instructional objectives are tied to individual lesson;
- Lessons are incorporated into the standardized curriculum;
- Courseware extends several grade levels in a consistent manner;
- A management system collects the results of student's performance; and
- Lessons are provided based on the individual students learning progress.

Furthermore, (Ellis, 2009) asserts that LMS should be able to do the following;

- Centralize and automate administration
- Use self-service and self-guided services
- Assemble and deliver learning content rapidly
- Consolidate training initiative on a scalable web-based platform
- Support portability and standard and
- Personalized content and enable knowledge reuse.

Lanny (2009) asserts "although the LMS needs to examine serving as an enterprise CMS (Course/Content Management System), it also needs to be a learner-centered application that gives learners greater control over content and learning. Hence, there is a continual demand for the LMS to utilize and integrate with many of the Web 2.0 tools that learners already use freely on the internet and that they expect to find in this kind of system". A learning Management system (LMS) is "an information system that administers instructor-led and e-learning courses and keeps track of student's progress.

II. Rationale

The state of quality education in Nigeria is quite worrisome. There is an estimated 26 million Nigerian youth who have little access to tertiary education (Yaradua Foundation Report 2013) and the difficulty in sustaining education through traditional means in higher education institutions prevails (Adu, Eze, Salako and Eyangechi, 2013). This situation can be attributed to a high population growth, increase in demand for education, inadequate funding and the difficulty in delivering education through traditional modes. Clark and Ausukuya (2013) state that the needed human resources (teacher student ratio as high as 1:356 in some cases) are inadequate, indicating the inability of existing structures (classrooms, learning and human resources) to cope with the growing population through traditional learning practices. These problems cut across all tertiary institutions in Nigeria including Colleges of Education who have the mandate to provide highly motivated, meticulous and efficient classroom teachers; and to further inspire the spirit of enquiry and creativity in teachers in order to help them fit into the public life of the community and society at large. (Kwache, 2007). For Nigeria to move forward in education there is the need for timely intervention by which the learning system in these institutions be appraised. Solution however lies in exploring the possibility of utilizing global knowledge to handle local problems through investing in human capital and appropriate integration of technology with a view to meet up with the globalized standard of learning.

This study therefore seeks to find out the perception of pre-service teachers to the integration of LMS to their learning experience.

III. Research Question

1. Is there a significant difference in the level of perception of the use of LMS between male and female students?
2. Is there a significant difference in the perception and readiness to the use of LMS based on age?
3. Is there a significant difference in the perception and readiness to the use of LMS based on level of study?
4. Is there a significant difference in the perception and readiness to the use of LMS based on department (Course of Study)?

IV. Hypothesis

1. There is no significant relationship between gender and perception to the use of LMS
2. There is no significant relationship between age and perception to the use of LMS.
3. There is no significant relationship between level of study and perception to the use of LMS.

V. Methodology

This study adopted a descriptive research design. Simple survey method was used to carry out the study. This is because the study seeks to determine the perception of students to the integration of learning management system (LMS) into teaching and learning. A total of 1200 copies of questionnaires were administered to 300 and 400 level students who had been randomly sampled from the Faculty of Languages, Arts and Socials, Vocation and Technology, Sciences and Education of Adeyemi University of Education. Only 954 copies were correctly filled out and considered fit for the analysis giving a 79.5% response rate.

VI. Research Instrument and Data Analysis

In order to identify pre-service teachers' perception to the integration of LMS for instruction, a questionnaire was used to collect data. The first section is on personal data of respondents, section B is on computer and internet usage, section C dwells on computer knowledge and skills while section D centres on pre-service teachers' perception to the integration of

LMS. The questionnaire was rated on four point Likert scale. Data collected was analyzed using t-test and Pearson Correlation to determine relationship between variables. The level of significance for the study is set at 0.05.

VII. Results

Research Question 1: Is there a significant difference in the level of perception to the use of LMS between male and female students?

Table 1A

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Perception of the use of LMS	Female	460	.54	.309	.014
	Male	494	.75	.259	.012

Table 1B

Perception of the Use of LMS	Levene's Test for Equality of Variances		t-Test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Equal variances assumed	94.506	0.000	-11.005	952	0.000	-0.203
Equal variances not assumed			-10.937	898.579	0.000	-0.203

Using the t-test for independent samples, a statistically significant difference was found in the level of perception of the use of LMS among male and female students ($t = -10.937$, $df = 898.579$, $p = 0.000$). The mean value of perception for male students was higher than that of female students ($0.75 > 0.54$). This implies that the male students have a better perception of the use of LMS than female students.

Research Question 2: Is there a significant difference in the level of perception to the use of LMS based on age?

Table 2A

Perception of the use of LMS	Age	N	Mean	Std. Deviation	Std. Error Mean
	15 - 24	457	.83	.175	.008
	Above 24	497	.48	.292	.013

Table 2B

Perception of the Use of LMS	Levene's Test for Equality of Variances		t-Test for Equality of Means			
	F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference
Equal variances assumed	332.005	0.000	22.675	952	0.000	0.357
Equal variances not assumed			23.128	822.669	0.000	0.357

A significant difference was found in the level of perception of the use of LMS based on age ($t = 23.128$, $df = 822.669$, $p = 0.000$). Students in the age range of 15 – 24 had a better perception than students above 24 years of age. Thus younger students have a better predisposition to LMS.

Research Question 3: Is there a significant difference in the level of perception to the use of LMS based on level of study?

Table 3A

Perception to the use of LMS	Level of Study	N	Mean	Std. Deviation	Std. Error Mean
	300L	506	0.68	.291	.013
	400L	448	0.61	.309	.015

Table 3B

Perception of the Use of LMS	Levene's Test for Equality of Variances		t-Test for Equality of Means			
	F	Sig.	T	df	Sig. (2-tailed)	Mean Difference
Equal variances assumed	9.563	0.002	3.775	952	0.000	0.73
Equal variances not assumed			3.762	921.411	0.000	0.73

Using the t-test for independent samples, a significant difference was found in the levels of perception to use LMS based on level of study ($t = 3.762$, $df = 921.411$, $p = 0.000$). 300L students had a better perception of LMS (0.68) than 400L students (0.61).

Research Question 4: Is there a significant difference in the level of perception to the use of LMS based on department (Course of Study)?

Table 4 : Perception to the use of LMS based on Department

Department	N	Mean	Standard Deviation
English	112	0.66	0.210
Yoruba	85	0.62	0.192
Economics	111	0.75	0.360
Guidance & Counselling	73	0.58	0.414
Agriculture	82	0.74	0.341
Home-Economics	108	0.75	0.306
Chemistry	83	0.74	0.098
Biology	110	0.53	0.194
History	93	0.52	0.316
Geography	97	0.59	0.341

Students in Chemistry Department had the best mean value (0.74) for the level of perception to the use of LMS, (the smaller the standard deviation, the better) while students in History department had the lowest mean value. Chemistry students have a very good perception of the use of LMS while, History students have a relatively low/poor perception to the use of LMS.

Hypothesis 1: There is no significant relationship between gender and perception of the use of LMS.

Table 5

		Gender
Perception of the use of LMS	Pearson Correlation	.336**
	Sig. (2-tailed)	.000
	N	954

The table above shows that gender has a positive significant correlation with perception of the use of LMS ($r = 0.336$, $p = 0.000$). The r value implies that gender explains 33.6% of variations in the perception to the use of LMS. On this basis, the null hypothesis stated above is rejected.

Hypothesis 2: There is no significant relationship between age and perception of the use of LMS.

Table 6

		Age
Perception of the use of LMS	Pearson Correlation	-.687**
	Sig. (2-tailed)	.000
	N	954

The result displayed in the table above shows that age has a negative significant correlation with perception of the use of LMS (r = -0.687, p = 0.000). This negative relationship implies that as age increases, perception LMS reduces. Age explains 68.7% of the variations in perception of the use of LMS. Based on the foregoing, the null hypothesis is rejected.

Hypothesis 3: There is no significant relationship between level of study and perception of the use of LMS

Table 7

		Gender
Perception of the use of LMS	Pearson Correlation	.695**
	Sig. (2-tailed)	.000
	N	954

The table above shows that level of study has a positive significant correlation with perception of the use of LMS (r = 0.695, p = 0.000). The r value implies that level of study explains 69.5% of variations in the perception to the use of LMS. It implies that as the level of study increases by a year, the perception to use LMS also increases. On this basis, the null hypothesis stated above is rejected.

VIII. Discussion and Conclusion

The integration of a Leaning Management System into teaching practices is increasing in higher education. Obadara (2014) noted that an average of 1.4 million Nigeria university students offers at least one online course during the outgone academic session; this is a 21 percent increase over the number reported in previous year. Researchers (Bates, 2008; Betts, 1998; and Wilson, 2003) concurs that perception and readiness is the key to a student's decision to learn and use technology, they emphasized that multimedia integration into the learning management material helps students to realize that learning requires different tools that can facilitate learning process. They concluded that students' acceptance of any new initiative such as LMS is critical to its success. Results revealed that there is a statistically significant difference in the level of perception of the use of LMS among male and female pre-service teachers. In agreement with previous research by lee (2003), who reported significant difference between sexes, relating to perceived roles in online learning in a campus environment still exists. Some researchers reiterate that perception of learners to technology adoption depends on shared negotiation of values, particularly on how the technology fits into existing social purposes and practices of the community (Wilson, Shery, Dobrovolny, Batty and Ryder, 2002; Fishman, 2000). Research spanning back over about 20 years shows females have traditionally lagged behind males in their willingness to learn about and use technology in schools (Schubert, 2001). However, recent studies indicates that the gender disparity have narrowed substantially (Omotunde, Fagun, Aderele and Abidoye 2014). It also indicates that there is a significant difference among the ages of respondents in their perception to the use of LMS to teaching. This is in deviance to Adedoja, Omotunde and Adelore (2010) who perceives ICT is an indispensable tool to perform task at every point of human life as such, both young and old requires some background in ICT to remain relevant in this 21st century. In an attempt to find a variation in the level of perception and course of study together with level of study, the results indicates that there is no significant difference. This can be explained by Chinwe (2010) who reported that students of the University of Ibadan compulsorily make use of the Internet to register for their courses, retrieve information for their assignments. When eventually the departments decide to go online with instructional delivery, students are compelled to use the platform irrespective of the department or level they belong. Although, one may be tempted to believe that science-based students would have higher level of readiness than the other, the fact remains that ICT knowledge is relevant to all field of endeavors. Students across subject combination need ICT background to embrace modern teaching-learning modes.

As a conclusion, LMS has become a common expression in higher institution of learning these day, Nigeria universities should not be exempted. The study has shown that pre-service teachers have a positive perception to the use of LMS for instruction and if it's used effectively, it will increase the efficiency of the educational process, decrease the amount face-to-face instruction and strengthen self-study and thus develop student's learning competences. Therefore, stakeholders which include the government, institutions, instructors, lectures should embrace and exploit the full benefit of learning management system for teaching and learning as these would bring in meaningful instruction and satisfaction.

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