Article

APPRAISAL OF ACADEMIC PERFORMANCE OF UNIVERSITY OF ILORIN FIRST YEAR STUDENTS USING MOBILE TECHNOLOGIES FOR LEARNING

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Abstract

This study examined the performance of University of Ilorin Communication and Information Science (CIS) students using mobile technologies to deliver course contents. Survey research design using both qualitative and quantitative methods was deployed with the use of documentary evidence to analyse the academic performance of the students in the five departments of CIS faculty. The results of the findings show that, before the deployment of mobile technology for teaching and learning, academic performance of students was not as high as in 2010/2011 when mobile technology was introduced through courseware development. In computer Science Department for example, 9% of the total registered students scored A and 4% scored F before the introduction of mobile technology, while 27% scored A and just 1% score F after the deployment of mobile technology for teaching and learning. The following recommendations were made: 1. Mobile technology should be involved in all the courses taught at the University of Ilorin should provide enabling environment for both teachers and students in making mobile technology applicable to teaching and learning, among others.

Keywords: Academic Performance; Mobile Learning; Mobile Technologies; Courseware Development; Online Distance Learning; Communication and Information Sciences' Students; University of Ilorin; Nigeria.

1. Introduction

In 2008, when the Vice-Chancellor, University of Ilorin (Unilorin), Professor Ish'aq Olanrewaju Oloyede Initiated the idea of courseware development which was embraced with a lot of challenges ranging from acceptability to conformity by the University community and of course compliance by both lecturers and students, little does one know that it was a right step in the right direction in mobile technology application towards improved academic performance of the students. This is because there could not be any formidable courseware development without mobile technologies. A committee was set up to anchor this project chaired by Professor L.O. Aina and a template for the University of Ilorin courseware development was developed as basis for the courseware. The University wide seminar organized by the committee equipped all lecturers in the University with the skills to developing courseware on various courses taught by them. At the end of Harmattan semester 2011/2012 session, fifty eight (58) departments out of the sixty six (66) in the University of Ilorin had already developed and uploaded their courseware. The implication of this is that, if all these departments are fully applying the course in their learning and teaching activities, m-learning would be above 90% operational at the University.

Mobile technology is gradually gaining acceptability in many developing countries of the world, including Nigeria. It is observed that, the recently introduced courseware development initiatives at the University of Ilorin, Nigeria has enhanced the qualities of teaching and learning. It is against this background that, this study sets out to examine the academic performance of University of Ilorin students in using mobile technologies to deliver course contents. Empirical research was carried out using documentary evidence to analyze the degree of academic performance of the students in the five departments that make up the entire faculty of CIS. 100 level students' results that were admitted in 2011/2012 academic session and 100 level students' result that were admitted in 2009/2010 academic session before the application of mobile technologies to deliver course contents were used for the study. Recommendations were drawn based on the analyses of the research findings.

Table 1: Unilorin uploaded courseware

Faculty	Departments	Status
Agriculture	Agriculture, Economics and Farm Management, Agric Extension and Rural Development, Agronomy, Animal Production, Crop Production, Home Economics and Food Science, Forest Resources Management.	Uploaded
Arts	Arabic, English, French, History and International Studies, Linguistics and Nigerian Languages, Performing Arts, Religion.	Uploaded
Business and Social Sciences	Accounting and Finance, Business Administration, Economics, Geography, Political Science, Sociology.	Uploaded
Communication and Information Sciences	Computer Science, Information and Communication Science, Library and Information Science, Mass Communication, Telecommunication Science	Uploaded
Education	Arts and Social Science Education, Counselor Education, Education Management, Human Kinetics and Health Education, Science Education, Post Doctoral Diploma in Education (PDDE)	Uploaded
Engineering and Technology	Agric and Bio system Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering	Uploaded
Law	Business Law, Islamic Law, Jurisprudence and International Law, Private and Property Law, Public Law.	Uploaded
Science	Biochemistry, Physics, Chemistry, Plant Biology, Statistics, Zoology, Mathematics, Microbiology, Geology and Mineral Science	Uploaded
Basic Medical Sciences (College of Health Sciences)	Anatomy, Chemical Pathology and Immunology, Hematology, Medical Microbiology and Parasitology, Pathology (Morbid Anatomy), Pharmacology and Therapeutics, Physiology	Uploaded
Clinical Sciences (College of Health Sciences)	An aesthesis, Behavioural Science, Child Health and Pediatrics, Epidemiology and Community Health, Medicine, Obstetrics and Gynecology, Ophthalmology, Radiology	Uploaded

Table II: Courses yet to be uploaded

Faculty	Departments	Status
Engineering and Technology	Agric and Bio System Engineering, Electrical Engineering, Mechanical Engineering	Not Uploaded
Clinical Sciences (College of Health Sciences)	Behavioral Science, Child Health and Pediatrics, Medicine, Ophthalmology, Orthinonarylology, Radiology	Not Uploaded

Source: Unilorin Open Courseware (2011)

2. Conceptual Framework

The essence of mobile learning could not be over emphasized in view of the fact that, learners may not actually share the same physical environment. Mobile learning mechanism could facilitate sharing of academic, personal and cultural lives. For example, the internet has ushered in an era in which information has become easy to access and easy to published Koole, 2009 (Koole, 2009). In a similar position Oketunji 2009 (Oketunji, (2009) looks at e-learning as facilitated and supported through the use of information and communication technologies. He cited Antonio, 2002 (Anthonio, (2000) postulating the flexibility and tremendous features accrued to e-learning such as accessibility, adaptability and extensibility. Students should have a unique source for searching and retrieving educational materials. Teachers, on the other hand, should equally have a centralized management which will exempt them from worrying about technical problems and let them concentrate their efforts on improving educational practices and delivery of instructional contents. Stressing the importance of mobile technologies in enhancing mobile learning, Erwat, 2007 (Erwat, (2007) underscores the relationship between ICT and education where it was highly demonstrated in developed countries. He emphasized that, children now play with computer toys and appreciable adult number have access to ICT gadgets by which they gather much information that affects their lives or influences the decision they make. Eyitayo (2008) posits that the internet forum is a good facility on the World Wide Web for holding discussions and posting user generated content. The Unilorin courseware development was made effective, because of the yahoo discussion group created to facilitate online interactions. He posited that, yahoo discussion list: http://groups.yahoo.com, Google discussion list: http://groups.google.com, and Microsoft discussion list: http://www.microsoft.com/communities/newsgroups/en-us/default.aspx, are some

of the internet forum that could aid teaching and learning. In a research conducted by (Peters, 2009) on the learning outcomes using mobile learning mechanism. It was discovered that, m-learning helps to break down the financial and mobility constraints of learning; improves literacy through collection and provision of evidence for assessment portfolios; and provide faster, more exciting ways of teaching, more flexibility, and more mobility among others.

2.1   Contributions of courseware development/mobile technologies to academic performance

Courseware is an educational material intended as kits for teachers or trainers or as tutorials for students, usually packaged electronically. Courseware can encompass any knowledge area. Aina, 2008 (L.O. Aina, 2008) defines courseware as a term that combines the word "Software." It is a term that is used to describe the entire course and any other additional material when used in an online environment. It is designed essentially to guide students on the overall plan of a course, so as to follow the trend of the course delivery and hence ensure maximum participation from students. Courseware employs other delivery strategies apart from the face-to-face or the conventional methods, such as the online interactions, stimulation exercise, and quiz, among others. The online interactions require mobile technologies in order to make it effective and thereby contributing to mobile learning, (Albert, 2008) stresses the benefits of courseware development as providing new possibilities for students and lecturers with respect to the design and delivery of learning, it improves learning experience for students and those teaching them, it is cost effective, it promotes better interactions between students and lecturers, support for self-pace learning, among others. Salman (2011) obviously, expresses the need for e-learning by both students and lecturers through proper application of courseware development. This could be achieved if students are encouraged to participate in the online forum created for a course, thereby contributing to e-learning process.

3. Purpose of the study

Yearly enrolments in Universities and other tertiary institutions in Nigeria are on the increase at alarming rate and facilities are not put in place in order to measure up with this teaming population of students. Aside this, some students are brilliant, but shy and may not be courageous to contribute publicly during the face to face class interactions. Hence, there is every justification to discourage close circuited learning in the Universities' system, but encourage the use of other course delivery of teaching and

learning in the University system. It is no news that all stakeholders in Nigeria are
worried about the decline in the quality, quantity and relevance of our curriculum and
teaching pedagogy. In achieving the 2020 millennium development goals of Nigeria in
becoming one of the twenty development goals of Nigeria in becoming one of the
twenty developed economies in the world of which education is paramount; there is
every justification of ensuring that, the standard of education in Nigeria is improved
upon. Sound and quality education is the basis for which monumental economic
development could be recorded. E-learning process through mobile technologies'
application will go a long way in re-shaping the education sector positively in Nigeria
and improve the academic performance of students in the Universities.

4. Objectives of the study

- To determine the academic performance of students as enhanced by mobile
  technologies using courseware development;
- To identify mobile technology's acceptability by students and lecturers in the
  faculty of communication and information sciences; and
- To describe the contributions of courseware development to effective learning
  and teaching.

5. Scope and limitation of the study

The scope of this study mainly covers appraisal of academic performance of registered
100 level students in 2011/2012 and 2009/2010 academic sessions in the faculty of
communication and information sciences, University of Ilorin, using mobile
technologies as propelled by the introduction of courseware development. The
following five departments were examined: Computer Science; Information and
Communication Science; Mass Communication and Telecommunication Science.

6. Methodology

According to Olayinka (2006), research methodology addresses the issue of research
design, sources of data, procedure for collecting the data and data analysis. Research
methodology is also about identification and description of the target population and
sampling techniques used in the presentation of instruments and techniques for
measurement, design, procedures and explanation of data analysis. Kerlinger (2000)
notes that, survey research is useful in the study of relative incidence and interrelations
of both sociological and psychological variables. This is a survey study which intends to
determine the academic performance of CIS students on the delivery of course content

using mobile technologies and it adopts quantitative and qualitative research methods
for data collection and analysis. Documentary source was equally employed in order to
capture academic performance of students. A student is adjusted to score "A" if he/she
scored "A" in at least 50% of the registered courses in the semesters under study and
also the same method is applied to a student with "F" score.

Comparative analysis of students' performance was made between the period when
mobile technologies were not used to delivery course contents and when it was used.
The target population for this research is all the registered 100 level students in the
University of Ilorin while accessible population is the number of registered students in
the faculty of Communication and Information Sciences during the 2009/2010 and
2011/2012 academic sessions where sample was drawn. (L.O. Aina, 2004) posits that,
there are different sampling techniques for selecting a sample from a population, it
includes, simple random sampling, systematic sampling, stratified sampling, quota
sampling, cluster sampling and purposive sampling. A purposive sampling method
was adopted to select a faculty, while systematic sampling was deployed to draw
sample from the population of 100 level registered students in 2009/2010 and
2011/2012 academic sessions. According to (Israel, 1992) there are several approaches to
determining the sample size of a research population, these include, using a census for
small populations, imitating a sample size of similar studies, using published tables and
applying formulas to calculate the sample size. This study employed the published
table approach in order to draw its sample sizes for a given set of criteria by providing
combinations of precision and confidence levels and variability, expressed in
percentage points. For example, +_5 percent for level of precision, 95% for confidence
level and 50% to indicate the greater level of variability. Quantitative data analysis was
deployed in order to determine the frequencies, percentages, and means and standard
deviation relations among various variables.

7. Results

Table III: Computer Science Department

S/N	No of Reg. Stud	Session	No of Reg. courses	Courses Taught Using M.T	No of Stud. With A Grade	No of Stud. With B Grade	No of Stud. With C Grade	No of Stud. With D Grade	No of Stud. With E Grade	No of Stud. With F Grade	Total
1.	129	09/10	09	0	12	24	27	53	8	5	129
2.	137	11/12	09	09	37	51	41	3	4	1	137

Table IV: Information and Communication Science Department

S/N	No of Reg. Stud	Session	No of Reg. courses	Courses Taught Using M.T	No of Stud. With A Grade	No of Stud. With B Grade	No of Stud. With C Grade	No of Stud. With D Grade	No of Stud. With E Grade	No of Stud. With F Grade	Total
1.	32	09/10	9	0	5	11	3	4	3	6	32
2.	32	11/12	8	8	10	13	3	4	2	0	32

Table V: Library and Information Science Department

S/N	No of Reg. Stud	Session	No of Reg. courses	Courses Taught Using M.T	No of Stud. With A Grade	No of Stud. With B Grade	No of Stud. With C Grade	No of Stud. With D Grade	No of Stud. With E Grade	No of Stud. With F Grade	Total
1.	57	09/10	10	0	12	21	10	5	3	6	57
2.	57	11/12	10	10	16	30	5	2	2	2	57

Table VI: Mass Communication Department

S/N	No of Reg. Stud	Session	No of Reg. courses	Courses Taught Using M.T	No of Stud. With A Grade	No of Stud. With B Grade	No of Stud. With C Grade	No of Stud. With D Grade	No of Stud. With E Grade	No of Stud. With F Grade	Total
1.	30	09/10	8	0	2	4	13	6	3	2	30
2.	52	11/12	7	7	11	17	18	4	2	0	52

Table VII: Telecommunication Science Department

S/N	No of Reg. Stud	Session	No of Reg. courses	Courses Taught Using M.T	No of Stud. With A Grade	No of Stud. With B Grade	No of Stud. With C Grade	No of Stud. With D Grade	No of Stud. With E Grade	No of Stud. With F Grade	Total
1.	30	09/10	8	0	2	13	4	6	3	2	30
2.	30	11/12	7	7	6	11	8	2	3	0	30

Table VIII: The clearer tabulation of the students' academic performance in percentages is as follow:

S/N	Department	% with A	% with F	Remark
1.	Computer Science	9% 27%	4% 1%	Before M.T. After M.T.
2.	Information Communication Science	16% 31%	19% 0%	Before M.T. After M.T.
3.	Library and Information Science	23% 18%	12% 4%	Before M.T. After M.T.
4.	Mass Communication	7% 21%	7% 0%	Before M.T. After M.T.
5.	Telecommunication Science	7% 20%	7% 0%	Before M.T. After M.T.

Discussion of Findings

The results reveal that, in Computer Science Department, when mobile technology was not deployed for teaching and learning in 2009/2010, 129 students registered for 9 courses, 12 had A grade (9%), 24 had B (19%), and 5 scored F (4%). However, in 2011/2012 when mobile technology was introduced, 137 students registered for 9 courses, 37 passed, with A grade (27%), 51 scored B (37%) and only 1 scored F(1%). Department of Information and Communication Science registered 32 students in 2009/2010 session, when mobile technology was not deployed for teaching and learning. 5 students scored A (16%), 11 scored B (34%), 3 students scored E(9%) and 6 scored F(19%). When mobile technology was deployed in 2011/2012, 10 students scored A (31%), 13 scored B (41%), 2 scored E (6%) and no student score F (0%). Library and Information Science Department registered 52 students in 2009/2010 session, 57 students registered, 10 scored F (4%). In mass Communication Department, 30 students registered and 2 scored A (7%), 4 scored B (13%), 3 scored E (10%) while 2 scored F (7%) before the introduction of mobile technology. In 2011/2012 session when mobile technology was introduced, 52 students registered. 11 scored A (21%), 17 scored B (33%), 2 students scored E (4%) and no students scored F, (0%). Telecommunication Science Department registered 30 students before the introduction of mobile technology to teaching and learning in 2009/2010 session, 2 scored A (7%), 13 scored B (43%), 3 scored E (10%) and 2 scored F (7%). When mobile technology was deployed in 2011/2012 session, 6 students scored A (20%), 11 scored B (37%), 3 scored E (10%), and no student scored F (10%).

9.   Conclusion and recommendations

It is evident that in 2009/2010 session, before the deployment of mobile technology for teaching and learning, academic performance of students was not as high as in 2010/2011 when mobile technology was introduce through courseware development. In Computer Science Department for example, 9% of the total registered students scored A and 4% scored F before the introduction of mobile technology, while 27% scored A and just 1% scored F after the deployment of mobile technology for teaching and learning. In Telecommunication Science Department, 7% of the students' population scored A and 7% also scored F before mobile technology was used for teaching and learning, while 20% scored A and 0% scored F after the use of mobile technology. This is a remarkable improvement in the academic performance of the students with the introduction of mobile technology through courseware development for teaching and learning.

In view of the above conclusion, the following recommendations are made:

1. Mobile technology should be involved in all the courses taught at the University of Ilorin by ensuring courseware application to teaching and learning;

2. All students should be encouraged to use mobile technology to carry out academic responsibilities in all their courses;

3. The management of the University of Ilorin should provide enabling environment for both teachers and students in making mobile technology applicable to teaching and learning.

4. It is recommended that, the curriculum should be reviewed in order to be accommodated by mobile technology for teaching especially in applied sciences.

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