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Information and communication technology: A Veritable Tool for Educational Management Students' academic performance in Rivers State Universities

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Article Info

Abstract
The study investigated Information and communication technology as a veritable tool for Educational Management students' academic performance in Rivers State Universities. Two research question and two null hypotheses were put forward. The population of the study consisted of 3200 Educational Management students from Rivers State University and Ignatius Ajuru University of Education from which a sample of 365 participants were determined using Taro Yamen's method. A self-structured questionnaire titled "Information and Communication Technology a Veritable tool for students academic Performances questionnaire (ICoTAVToFAPQ), validated by two experts from Measurement/Evaluation Department and was used for data collection. The reliability of the instrument was established using test-retest method. The reliability coefficient of 0.85 was obtained through Pearson product moment correlation (PPMC). Mean and standard deviation, were applied to answer research questions while hypotheses were tested at 0,05 level of significance, using z-test statistics. Findings revealed that Information and Communication Technology significantly enhance students' ability to engage in individual study, greatly influence the use of search engine, help students to communicate and share information and knowledge and influence students' ability to store and retrieve information. consequently, it was recommended among others that institution and stakeholders should provide Information and Communication Technology (ICT) facilities for effective learning of Educational Management, and that students should be encouraged to utilize Information and Communication Technology (ICT) facilities in learning of Educational Management.

Introduction
Educational Management is a field of study concerned with the inculcation of basic ideas that can help in planning, organizing and directing of activities in schools and for the effective utilization of human capital resources as well as economic development in a society. It is an academic programme offered in tertiary institutions, designed to provide learning situations for skill acquisition among students who could apply and employ such skills in their occupational choice, managing personal or group business, for personal living in the society and for the growth and development of the educational economy of the nation. Williams (2020) opined that the growing need for the knowledge in Educational Management has continued to expand and increase. Educational Management is increasingly needed to fill the gap created by poor management of nations educational institutions. It is necessary to increase the skills of undergraduates in Nigeria today in order to reduce the alarming poor standards of education in the country. Hence, the need to utilize Information and Communication Technology (ICT) tools on students' academic performance in Educational Management is apt.
Academic performance is the extent to which a student, teachers or institutions has achieved their short or long term educational goals (Wikipedia).

According to Hoyle (2012) [6], academic performance refers to what the students has learned or what skill the students has learned and is usually measured through assessment like standardized tests performance. Academic performance, which is measured by the examination results, is one of the major goals of school. Hoyle (2012) [6] argued that schools are established with the aim of imparting knowledge and skills.

Academics performances can be poor or high. Some factors responsible for poor academic performance are internal such as a learning disability that can be an obstacle to attain a certain academic achievement or external such as school environment, social interaction, teachers and teaching techniques.

Information and Communication Technology facilities are said to help expand access to education, strengthen the relevance of education to the increasingly digital work place, and raise educational quality by, among others, helping to make teaching and learning an engaging, active process connected to real life (Ike, Iwu & Chimezie, 2016) [7]. Across a range of educational application, Information and Communication Technology is being harnessed to improve the efficiency, accessibility and quality of learning process in developing countries (Ajuzie, 2011) [1]. Egbule in Akude (2012) [2] defined Information and Communication Technology as a systematic process of gathering, processing, storage, retrieval, and spreading information through the print, broadcast, computing and telecommunication media. Information and Communication Technologies are major factors in shaping the new global economy and producing rapid changes in society. The emergence of the knowledge-based" society is changing the global economy and the status of education. There is growing awareness among policy-makers, business leaders and educators that the educational system designed to prepare learners for an agrarian or industrially-based economy will not provide students with the knowledge and skills they will need to thrive in the 21st century's knowledge-based economy and society.

Information and Communication Technology has a major role to play in forming the new worldwide economy to deliver fast changes in the society. Within the previous decade, ICT has advanced and changed at such a speed, that developing countries have not been able to catch up with the revolution and have been left behind and thus lag in their communication with the developed countries. ICT acts as the foundation stone of the contemporary world; thus, understanding this technology and its fundamental concepts is considered as part of the core of education (UNESCO, 2012) [11]. Technology has the potential to renovate the ways of instruction, where and how learning occurs and the roles of students and educators in the instructional process (UNESCO, 2012) [11]. Information and Communication Technology is transforming procedures of instructional process by contributing components of strength to learning situations involving virtual environment. It is an effective and influential instrument for providing educational opportunities; thus, it is difficult to envision future learning situations that are not bolstered by information and communication technology.

Educational institutions may utilize Information and Communication Technology to enrich the students with skills and knowledge for the 21st century (Andoh, 2012) [4], such that it can add to worldwide accessibility to education, educational equality, broadcasting of quality teaching

learning programmes, educators' professional growth and to help in obtaining a more effective educational management. Hence, accessibility, inclusion and standard being the key issues of education, can be comfortably addressed through Information and Communication Technology. Information and Communication Technology improves the standard of education by encouraging learning through ongoing discussion, delayed time discussion, directed instruction, self-learning, critical thinking, data seeking and analysis (Yuen, Law & Wong, 2013) [12]. Utilization of Information and Communication Technology can enhance outcomes, instruction, administration and create important abilities in the underprivileged groups (Sharma, 2013) [9]. And at the same time influence educational instruction and research process (Yusuf, 2011) [13].

To enhance the academic performance of students, there is a need to turn from conventional teaching methods to modern teaching methods. Computer Assisted Instruction (CAI) is space and time independent making it convenient for students to go through the program either at home or on a school computer. This encourages interactivity, which individualizes content for each learner based on their needs and it provides formative feedback to multiple choice questions. CAI enhances learning rate where the learners are able to learn more materials given the same amount of time as compared to conventionally taught learners. Moreover, students receiving instructions through ICT retain teach better (Cotton, 2011) [5]. The issue of low achievement among the learners has been tormenting the instructive framework right from the elementary classes to university level. This issue wastes human potential and facilities for education. This study therefore will confirm the perceived influence of information and communication technology on Educational Management student's academic performance in universities in Rivers State which may boost the interest and retention of Educational Management students.

Statement of the Problem

Educational Management curriculum is designed to provide learning situations and experiences for educational skills acquisition among students, it is observed that the teaching and learning process in Educational Management in Nigerian tertiary institutions is still at the level of "chalk and talk method" which is the traditional method of teaching. It also involves the face to face approach to teaching where the teacher sees himself as the centre point of teaching (Akude 2014) [3]. Recently information and communication technology has been introduced into the education system and has been applied to teaching and learning. Many studies have been carried out on the need for Information and Communication Technology application in Educational Management; however not much or little has been said about the influence or impact of Information and Communication Technology on the classroom situation. In particular, there is no substantial information or record of investigation regarding the ability of students to engage in individualized learning. Neither is any available information concerning students' ability to search for, acquire and update their knowledge using Information and Communication Technology; nor is students' ability to communicate and share information as well as students' ability to store and retrieve information using ICT presented anywhere. It is against this background that the researcher decided to carry out a research on Information and communication

technology: A veritable tool for Educational Management students' academic performance in universities in Rivers State.

Purpose of the Study
The main purpose of this study was to investigate Information and communication technology as a veritable tool for Educational Management students' academic performance in universities in Rivers State. Specifically, the study sought to achieve the following:
1. Determine the extent to which Educational Management students' ability to communicate and share information and knowledge, using ICT influences their academic performance in Rivers State Universities.
2. Determine the extent to which Educational Management students' ability to store and retrieve information, using ICT influences their academic performance in Rivers State Universities.

Research Questions
The following research questions were posed to guide the study;
1. What is the extent to which Educational Management students' ability to communicate and share information and knowledge, using ICT influences their academic performance in Rivers State Universities.?
2. To what extent does Educational Management students' ability to store and retrieve information, using ICT influences their academic performance?

Hypotheses
The following null hypotheses were formulated and was tested at 0.05 level of significance:
1. There is no significant difference in the mean rating of Educational Management students of Rivers State University and Ignatius Ajuru University of Education on the influence of students' ability to communicate and share information and knowledge on their academic performance.

2. There is no significant difference in the mean ratings of Educational Management students of Rivers State University and Ignatius Ajuru University of Education with regards to the influence of students' ability to store and retrieve information on their academic performance.

Methodology
The study adopted the descriptive survey research design. The population of the study was 3200 students from which a sample of 365 participants were determined using Taro Yamen's method and were randomly selected. A self-structured instrument titled "Information and Communication Technology: a Veritable tool for students academic Performance questionnaire (ICTVTFAPQ), which was validated by experts from Educational Management and Measurement and Evaluation was used for data collection. The questionnaire was designed in a four point rating scale with four response options such as: Very High Extent (VHE), High Extent (HE), Moderate Extent (ME) and Low Extent (LE). The reliability of the instrument was established using test-retest method. The reliability coefficient was 0.85. A total of three hundred and sixty five (365) copies of the questionnaire were administered to respondents. The data collected was based on the research questions that guided the study which was analyzed, using the mean statistics and standard deviation while the hypotheses were tested at 0.05 level of significance. A mean of 2.50 and above was considered high and any mean less than 2.50 was considered low Extent. Also, If the z-crit value of 1.96 is higher than the z-cal, the null hypothesis will be accepted but if the z-crit value of 1.98 is lower than the z-cal, the null hypothesis will be rejected.

Results
Research Question 1
What is the extent to which Educational Management students' ability to communicate and share information and knowledge, influences their academic performance?

Table 1: Mean Ratings of Educational Management Students on the Influence of Students' Ability to Communicate and Share Information and Knowledge on their Academic Performance N= 356

S/N	ITEMS	IAUOE (N = 221)			RSU (N = 135)		
		$\overline{X}$	SD	Remarks	$\overline{X}$	SD	Remarks
1	Ability to communicate and share information and knowledge has aided in distance learning.	2.64	0.53	HE	2.58	0.52	HE
2	Students now easily carryout projects due to their ability to communicate and share information and knowledge	2.64	0.53	HE	2.58	0.52	HE
3	Collaborative and interactive learning is enhanced by their ability to communicate and share information and knowledge	2.68	0.54	HE	2.56	0.51	HE
4	Students are now independent learners and can make best decisions possible about their studies, learning time, place and resources.	2.63	0.53	HE	2.53	0.50	HE
5	Students ability to communicate and share information and knowledge provides sound and unmatched feasibility for discoveries for their academics	2.61	0.52	HE	2.67	0.53	HE
	Grand Mean / SD	**2.64**	**0.53**		**2.58**	**0.52**	

Source: Field Survey, 2020

From table 1, it is observed that ICT has influence on the students' ability to communicate and share information and knowledge. The items by item analyses revealed means that are above the decision mean of 2.50. Respondents from the two institutions accepted that Information and Communication Technology influence students' ability to communicate and share information and knowledge.

communicate and share information and knowledge.

Research Question 2
To what extent does Educational Management students' ability to store and retrieve information, influences their academic performance?

Table 2: Mean Ratings of Educational Management Students on the Influence of Students' Ability to Store and Retrieve Information on their Academic Performance N= 356

S/N	Items	IAUOE (N = 221)			RSU (N = 135)		
		$\overline{X}$	SD	Remarks	$\overline{X}$	SD	Remarks
1.	Stored information can be retrieved and used during classwork and assignments.	2.64	0.53	HE	3.07	0.61	HE
2.	Students' ability to store and retrieve information lends itself to more of students-centered learning which enhances academic performance.	2.61	0.52	HE	2.93	0.59	HE
3.	Students' ability to store and retrieve information assist slow learners to learn at their own pace and time.	2.65	0.53	HE	2.87	0.57	HE
4.	Teachers are able to create interactive classes by exploiting the students' ability to store and retrieve information	2.65	0.53	HE	2.67	0.53	HE
5.	Students' ability to store and retrieve information prepares the students for employment.	2.60	0.52	HE	2.68	0.54	HE
	Grand Mean / SD	**2.63**	**0.53**		**2.84**	**0.57**	

Source: Field Survey, 2020

Table 2 shows the influence of ICT on students' ability to store and retrieve information in RSU and IAUE. The item by item analysis showed that students of the two institutions are in agreement that ICT in item 16 enables students to have access to education regardless of time and geographical barriers.

Hypothesis 1
There is no significant difference in the mean rating of Educational Management students of Rivers State University and Ignatius Ajuru University of Education on the influence of students' ability to communicate and share information and update knowledge on their academic performance.

Table 3: Z-test Analysis of Response of Rivers State University and Ignatius Ajuru University of Education Students on Influence of Information and Communication Technology on Students' Ability to Communicate and Share Information and Update Knowledge

Institution	N	$\overline{X}$	SD	Df	z-calc	z-crit	Level of sig.	Remarks
IAUOE	221	2.64	0.53		1.2	1.960	0.05	
				354				Accepted
RSU	135	2.58	0.52					

Source: Field Survey, 2020

It could be observed from the above table that the computed value of z is less than the critical value therefore the null hypothesis was accepted. The implication is that respondents from the two institutions are in agreement in their opinion as regards Information and Communication Technology influence on students' ability to communicate and share information and update knowledge.

Hypothesis 2
There is no significant difference in the mean rating of Educational Management students of Rivers State University and Ignatius Ajuru University of Education with regards to the influence of students' ability to store and retrieve information on their academic performance.

Table 4: Z-test Analysis of difference between Rivers State University and Ignatius Ajuru University of Education Students on Influence Ability to Store and Retrieve Information

Institution	N	$\overline{X}$	SD	Df	z-calc	z-crit	Level of sig.	Remarks
IAUOE	221	2.64	0.53		1.2	1.960	0.05	
				354				Accepted
RSU	135	2.58	0.52					

Source: Field Survey, 2020

Table 4 revealed that the calculated z-value is not significant at 0.05 alpha level since it is less than the critical value. The null hypothesis was therefore accepted. The implication is that there is no significant difference between the mean response of Rivers State University and Ignatius Ajuru University of Education students on the influence of ICT on ability to store and retrieve information for improved academic performance. It therefore suggests that while respondents from both schools agreed on influence of ICT on students' ability to store and retrieve information for improved academic performances, the extent of agreement is where the difference lies.

Discussion of Findings
The study revealed a common opinion of respondents as regards Information and Communication Technology influence on students' ability to communicate and share information and update knowledge for improved academic performance. In other words the ability of students to communicate and share information that updates knowledge and enhance academic performance is to a high extent, dependent on Information and communication Technology. This is in tandem with the theory of Cognitive Flexibility propounded by Spiro, Fitoritch & Coulson, and which focuses on the nature of learning in complex and ill-structured domains. Spiro *et al* (1990) stated that cognitive flexibility, implies the ability to spontaneously restructure ones' knowledge, in many ways, in adaptive response to radically changing situational demands. A related view to this was expressed by the study of Omojowolo, & Olatokun, (2017) that revealed a positive and significant correlation

between ability to share and knowledge sharing. This indicates that for knowledge sharing behaviour to be enhanced, improvements in ability to share would be necessary. This is supported by the findings of Wangpipatwong (2011), who found that ability to share significantly influenced the knowledge sharing behaviour of the surveyed university students in Bangkok. In the current study most of the respondents interviewed admitted that Information and Communication Technology has highly influenced their ability to share information and consequently their knowledge is updated as many newer things are acquired through experience and this in turn has enhanced their performances academically. The referenced studies and the current study are related as all examined ability to share information, knowledge update and enhancement of students' academic performance.

The study also found that to a large extent, Information and Communication Technology has the capability of influencing students' ability to store and retrieve information that supports learning and improves students' academic performance. A significant difference was found between the mean response of Rivers State University and Ignatius Ajuru University of Education students on the influence of students' ability to store and retrieve information on their academic performance. This finding is in alliance with the observation of Fordjour, Badu, and Adjei, (2010) in a study titled the Prospects and Challenges of Information Retrieval by University Students: A Case Study of Post Graduate Students of the University of Ghana, Legon, where they decried that the respondents' operational retrieval skills were found to be slightly above average. They asserted that this result is not impressive because a high level of this skill is required to effectively retrieve information in electronic resources. Fordjour *et al* (2010) stated that poor performance of students in the universities had been attributed to their inability to effectively retrieve information for academic work. With the speedy introduction of new electronic resources, undergraduates require adequate knowledge of informational retrieval, operational retrieval and strategic retrieval skills to meet up with the ever changing contents of electronic resources. The two studies emphasized on the importance of information storage and retrieval skills as it relates to applicability to learning environment and student achievement.

Conclusion
Based on the findings it was concluded that if information and communication technology facilities were made adequately available and students made to utilize in practice, it will enhance student's learning achievement. Students' academic performance has not reached the optimum because a lot needs to be done in the area of information retrieval, update and knowledge sharing. The effective utilization of information and communication technology facilities will stimulate students to learn more and enhance their learning outcomes.

Recommendations
1. Non-governmental agency should assist in the provision of ICT facilities in schools as to enhance the teaching and learning process
2. Student assessment should encompass activities that will enable them practice retrieval process with what they had previously stored.

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