

MEASURING THE IMPACTS OF INFORMATION AND COMMUNICATION TECHNOLOGY ON LEARNING IN NIGERIAN TERTIARY INSTITUTIONS

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ABSTRACT

This study focuses on the evaluation of the impacts of Information and Communication Technology on students learning in tertiary institutions, Oduduwa University, Ipetumodu, Osun State was used as a study institution. The data used in the study was collected using questionnaire. In all 120 questionnaires were administered out of which 110 were retrieved. The factors considered are the availability, accessibility and user-ability of Information and Communication Technology resources of the Institution. Statistical Packages for Social scientist was used to analyse the data collected. All results obtained were tested at $\alpha = 5\%$ level of significance. The results show that the ICT support on ground resources in the University is adequate because of the available number of computers, the tutors and computer laboratories are highly accessible at all time. Furthermore, the study reveals that the students were well orientated on the usefulness of ICT. In conclusion, it is important to provide more computers and accessories for the institution. ICT access should be improved upon more than the level of Microsoft Office Packages.

KEY WORDS: *ICT, University, questionnaire, computer, laboratory, packages*

1.0 INTRODUCTION

Information and communication technology (ICT) in modern day life avail a lot of opportunities to educational institutions global wise and serve as a link or complement and support the learning process for up to date knowledge sharing. This study therefore, centered on evaluating the impacts of various ICT devices for learning in our various tertiary institutions. The availability of ICT in our schools as well as the level of accessibility of those devices by the students and the ways it aids acquisition of knowledge were dwell into. Oduma (2013) opines that ICT is as important as water and electricity to man and that it plays an invaluable role in educational institutions and has impacted positively on both the quality and quantity of teaching and learning. It also dwells on the methodology of research and launch a new innovation in education. Dotimi and Hamilton-Ekeke, 2013 were of the view that internet is used to accomplish the digital goals of strengthen educational process as it provides powerful support and render services for students, this provides opportunities to acquire their day to day academic

needs, it also made interaction among students and their teachers and lecturers possible as the case may be easier as learning is no longer confined to the lecture rooms, so connection and interaction can be established among students. Nkanu (2007) sees ICT as computers, photocopiers, CD-ROM databases, printers, videotapes and audio tapes. He clearly made it clear that computer has two components vi-a vis hardware and software components. The software parts are made up of Microsoft Word, Excel, Corel draw, internet explorer etc while the hardware components are the parts of the computers that could be touch physically and these include computer case, keyboard and monitor. For the sake of the present study, ICT will be restricted to the internet which is a worldwide interconnectivity of computers that allows for distribution and sharing of information and supports which is available but not limited by the time and space. Constitution of Nigeria (1999) affirms the place of ICT in education sector, as revealed by articles 101(a), 1802(a) and 102(b). Education remains an instrument for national development as revealed in (2004) national Policy on Education. The (2007) National Policy for Information Technology classified ICT as computers (software and hardware) and analogous practices, and related supports. This further encompasses any hardware or interrelated system or subsystem of hardware that is used in automatic procurement, storage, manipulation, administration, movement, control, display, switching, interchange, transmission or reception of data or information.

2.0 LITERATURE REVIEW

The modern-day educational needs have applied Information and Communication Technology (ICT) as part of Education global wise invaluable and in this respect, Nigeria is not left behind as ICT gradually crept into the educational systems despite the limitations financial constraints as a result of not too good economic disadvantages brought about as a result of corruption and heavy reliance on petroleum products. Education is a discipline concerns with preparing the young generation in the society for the future challenges. Lawrence (2015) said Information and communication technology (ICT) has introduced new innovation into the world of education and has improved tremendously efficiency of many areas of human endeavours across the globe. For example, in the educational field, the application of ICT has become a important aspect of learning process for tertiary education students within and outside the lecture rooms. Most tertiary institutions that have totally embraced ICT have recorded tremendous success in the

usage of ICT for the improvement of teaching and learning. Castillo-Merino and Serradell-López, 2014 were of the view that several efforts which involves theory and empirical, were applied so as to determine the impact of ICT acceptability in the educational system and that such acceptance in higher education should be tailored towards its performance in education. Such performance measures were used benchmarks to establish how variables such as infrastructure and obtainability of other resources that impacted to the growth of ICT. Attuquayefio and Addo 2014 opined that the state of the art being used at both national and international levels, have led to a remarkable progress as shown in the form of establishment of policies and regulations that assisted in the integration of ICT in the educational system development. Cruz-Jesus, et.al 2016 reviewed several studies that is related to the impact of ICT on educational institutions in Europe. The findings revealed that there is a limited and inimitable proof of impact of ICT acceptance on students' performance and that there is a real reason for the use of ICT; this suggests that acceptance of ICT has positive correlation on students' performance. Etim, Akpan, and Ibok (2013) refers to internet as the networking of system and subsystems of equipment used in the automatic procurement, storage, manipulation, management, movement, control, display, switching, interchange, transmission or reception of data or information. Dickson (2012) was of the opinion that the internet can be regarded as a device that provides resources and services that enable the user in pervading, transforming, gathering, manipulating and presenting or communicating information. He concluded that the application of internet in educational set up is now a global wise affair and no country should be left behind as it becomes a must have educational requirements. Abascal and Nicolle (2005) opined that most developed countries have made good use of internet facilities to transform their educational system whereas most developing countries are still far from this new world order. Oladokun, 2012 said several studies have exhaustively dealt with factors responsible for influencing, adopting and integrating of ICTs for educational purposes among others. Ololube, et.al, 2009 were of the opinion that Despite the enormous benefits derived from ICT use, Nigeria is still grossly lack behind compared with their counterparts elsewhere. Rodriguez and Wilson (2000); opined that information and communication technology is a set of activities which brought about by the use of electronics transmission and display of information. Ozoji and Jimoh (2007) sees information and communication technology as the process of handling and processing of information such as texts, images, graphics, instructions and soon for use, by the

use of electronic and communication devices such as computers, cameras, and telephone. The combination of information and communication technology with internet facilities exposes the students to lots of information and experience. Balinder, Kaur, 2008 observed that majority of academic and research institutions provide Internet service to their students and lecturers. Gupta & Sanocki, 2002 opined that almost all tertiary institutions globally are investing in information technology (internet) and promoting the use of internet facilities in various higher institution to promote educational activities global wise. Ani, 2012, opines that the use of the Internet for learning as improved accessibility, efficiency and quality of learning by making access to resources possible and makes exchanges and collaboration possible.

3.0 DATA ANALYSIS AND DISCUSSION OF RESULTS

The data for the study was obtained through the use of questionnaire. In all 120 questionnaires were administered and 110 were returned. The returned forms were significantly large enough to give good results as this represent more than 90 percent of the population studied. A statistical package for the social scientist was used for the data analysis. This study focuses on the analysis and interpretation of the respondents view on “the impacts of information and communication technology on learning in tertiary institution”. The respondents are students of Oduduwa University, Ipetumodu. The socio-demographics variables analyzed include age, level of education, religion, occupation and marital status among others.

TABLE 1 **AGE OF RESPONDENT**

		Frequency	Percent	Cumulative Percent
Valid	16-20	41	37.3	37.3
	21-25	60	54.5	91.8
	26-30	5	4.5	96.4
Missing	System	4	3.6	100.0
Total		110	100.0	

Source: Field Survey Output 2019

Table 1, reveals that the age group (21-25) and accounted for 54.5% of the respondents, this is closely followed by age group (16-20) and formed 37.3% of the respondents, this is followed by age group (26-30) with 4.5%., while 3.6% of the respondents did not respond to the question

TABLE 2 **SEX OF RESPONDENT**

		Frequency	Percent	Cumulative Percent
Valid	Male	45	40.9	40.9
	Female	64	58.2	99.1
Missing	System	1	0.09	100.00
Total		110	100.0	

Source: Field Survey Output 2019

Table 2 above displays the sex distribution of the respondents, 58.2% of the respondents are female students (64 respondents), 40.9% are males (45 respondents) and 0.09% (1 respondent), did not indicate his or her sex.

TABLE 3 **AVAILABILITY OF INTERNET**

		Frequency	Percent	Cumulative Percent
Valid	not available	18	16.4	16.4
	fairly available	23	20.9	37.3
	Available	65	59.1	96.4
Missing	System	4	3.6	
Total		110	100.0	

Source: Field Survey Output 2019

Table3 above reveals the distribution of availability of internet facilities. This availability is measured using options, 'not available (18) 16.4%, fairly available (23) 20.9% and available (65) 59.1%, the implication of this is that the internet connectivity is good and should be improved upon for optimal results

TABLE 4 AVAILABILITY OF COMPUTER LABORATORY.

		Frequency	Percent	Cumulative Percent
Valid	not available	22	20.0	20.0
	fairly available	39	35.5	55.5
	Available	44	40.0	95.5
Missing	System	5	4.5	100.0
Total		110	100.0	

Source: Field Survey Output 2019

Table 4, shows that (22 students) 20% of the respondents claimed that computer laboratory is not available in the school, while (39 students) 35.5% said the facilities is fairly available, (44 students) 40.0% said the computer laboratory is available. This lends credence to the fact that ICT wise the university is well positioned.

TABLE 5 AVAILABILITY OF VIDEO CONFERENCING EQUIPMENT

		Frequency	Percent	Cumulative Percent
Valid	not available	14	12.7	12.7
	fairly available	25	22.7	35.4
	Available	66	60.0	95.4
Missing	System	5	4.5	99.9
Total		110	100.0	

Source: Field Survey Output 2019

Table 5, revealed that 60.0% (66 students) of the respondents said that ICT resources like video conferencing equipment is available in the school, 22.7% (25 students) said it is fairly available, while 12.7% (14 students) said it is not available.

TABLE 6: EFFICIENCY OF INTERNET AND EMAIL

		Frequency	Percent	Cumulative Percent
Valid	efficient	48	43.6	43.6
	fairly efficient	40	36.4	80.0
	inefficient	13	11.8	91.8
Missing	System	9	8.2	100.0
Total		110	100.0	

Source: Field Survey Output 2019

Table 6, revealed that 43.6% of the respondents said that the use of ICT resources like internet & email is efficient in the school, 36.4% said it is fairly efficient, while 11.8% said it is not efficient. These results show that ICT facilities are efficient and good for the day to day running.

TABLE 7 EFFICIENCY OF SOFTWARE

		Frequency	Percent	Cumulative Percent
Valid	Inefficient	16	14.5	14.5
	fairly efficient	31	28.2	42.7
	Efficient	53	48.2	90.9
Missing	System	10	9.1	100.0
Total		110	100.0	

Source: Field Survey Output 2019

Table 7, shows that (53) 48.2% of the respondents said that the use of ICT resources like software is inefficient in their school, (31) 30% said it is fairly efficient, while (16) 16% said it is efficient.

TABLE 8: EFFICIENCY OF COMPUTER LABORATORY

		Frequency	Percent	Cumulative Percent
Valid	inefficient	29	26.4	26.4
	fairly efficient	32	29.0	55.4
	efficient	40	36.4	91.8
Missing	System	9	8.2	100.0
Total		110	100.0	

Source: Field Survey Output 2019

From table 8, (29) 26.4% of the respondents said that the use of ICT resources like computer laboratory is inefficient in the school, (32) 31.6% said it is fairly efficient, while (40) 39.7% said it is efficient. The implication of this is that computer laboratory in use is superb.

TABLE 9 EFFICIENCY OF VIDEO CONFERENCING EQUIPMENT

		Frequency	Percent	Cumulative Percent
Valid	inefficient	15	13.6	13.6
	fairly efficient	19	17.3	30.9
	efficient	67	60.9	91.8
Missing	System	9	8.2	100.0
Total		110	100.0	

Source: Field Survey Output 2019

From table 9, (67) 60.9% of the respondents confirmed that the use of ICT resources such as video conferencing equipment is efficient, (19) 18.8% said it is fairly efficient, while (15) 14.8% said it is inefficient. Conclusively video conference equipment is efficient.

TABLE 10 USERABILITYOF VIDEO CONFERENCE

		Frequency	Percent	Cumulative Percent
Valid	poor	20	18.2	18.2
	fair	30	27.3	45.5
	good	53	48.2	93.6
Missing	System	7	6.4	100.0
Total		110	100.0	

Source: Field Survey Output 2019

From table 10, (53) 48.2% of the respondents said that their knowledge and skills in the use of video conference is good, (30) 27.3% said it is fair, while (20) 18.2% said it is poor. The implication of this result is that userbilty of video conference is very good

TABLE 11 USERABILITY OF PUBLICATION SOFTWARE

		Frequency	Percent	Cumulative Percent
Valid	poor	18	16.4	16.4
	fair	26	23.6	40.0
	good	58	52.7	92.7
Missing	System	8	7.3	100.0
Total		110	100.0	

Source: Field Survey Output 2019

From table 11, (56) 52.7% of the respondents said that their knowledge and skills in the use of publication software is good, (26) 23.6% said it is fair, while (18) 16.4% said it is poor. This implies that publication software usability is high

TABLE 12 USERABILITY OF PROJECTORS

		Frequency	Percent	Cumulative Percent
Valid	poor	30	27.3	27.3
	fair	26	23.6	50.9
	good	48	43.6	94.7
Missing	System	6	5.5	100
Total		110	100.0	

Source: Field Survey Output 2019

From table 12, (30) 27.3% of the respondents said that their knowledge and skills in the use of projectors is poor, (26) 23.6% said it is fair, while (48) 46.2% said it is good. The implication of this result is that projectors usability is good.

TABLE 13 USERABILITY OF INTERNET AND EMAIL

		Frequency	Percent	Cumulative Percent
Valid	poor	25	22.7	22.7
	fair	22	20.0	42.7
	good	56	50.9	93.6
Missing	System	7	6.4	100.0
Total		110	100.0	

Source: Field Survey Output 2019

From the table, (25) 24.3% of the respondents said that their knowledge and skills in the use of internet and email is poor, (22) 21.4% said it is fair, while (56) 54.4% said it is good. This result shows that the students' knowledge and skills in the use of internet and email is good.

4.0 CONCLUSIONS AND RECOMMENDATIONS

From the above (analysis) the following conclusions are drawn

The ICT infrastructure of the Oduduwa University is good, well established, evenly shared among the faculties and good as ICT resources like computer lab, projectors and television sets were well setup. In the same way, locating ICT in the different parts of the University for both lecturers and students was well located and structured. However, the very serious challenges being faced by the students and lecturers in the university has to do with the inadequate and limited number of ICT resources which does not measure up to the teeming number of students population. Finally, at Oduduwa University, the training is largely limited to Ms Office stuff but not skill acquisition that led to ICT skill transfer to use ICT both for learning and in other settings. Based on this study, and in order to improve on ICT and learning, the following recommendations are advanced for the use of management of the university.

University needs to invest more in computers and related technology as means of not only solving accessibility problems but also to improve on the existing facilities especially computers in the lecture rooms and computer laboratories. More resources or computer accessories such as printers, laptops, projectors and so on should be deployed for practical utilizations. The idea of limiting ICT skills to MS Office stuff should be avoided. So also, University should accommodate some other programs and packages as approved by UNESCO (2000) curriculum for schools. Basic level of ICT skill needed to be established with the view to integrate ICT approach to education. The essence of this is build ICT firmly into the teaching and learning process so that ICT is not taught in isolation. This kind of change be recommended will obviously offer opportunity to improve basic teaching and learning using present-day technology know how. The management as a matter of urgency must maintain uninterrupted internet connectivity in the University and endeavour to connect more computers to the servers. University should relax rules on access to the internet and e-mail of the institution by establishing her own ICT resource centers where all softwares are kept and easily accessed.

5.0 Reference

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