

AN ASSESSMENT OF USE OF COMPUTERS FOR INSTRUCTIONAL PURPOSES IN KWARA STATE TERTIARY INSTITUTIONS, NIGERIA

OLUMORIN, Charles Olubode Ph.D

Department of Science Education,
Faculty of Education,
University of Ilorin
bodeolumorin@yahoo.com
bodeolumorin@gmail.com

YUSUF, Mudashiru Olalere Ph.D.

Department of Science Education,
Faculty of Education,
University of Ilorin
Lareyusuf@yahoo.com

SOETAN, Aderonke Kofo Ph.D

Department of Science Education,
Faculty of Education,
University of Ilorin
soetan.ak@unilorin.edu.ng

Abstract

This study assessed the use of computers for instructional purposes among tertiary institution lecturers in Kwara State. It also examined the influence of gender of the lecturers on the use of computers for instructional purposes. The study used the descriptive survey method. The sample comprised 677 lecturers randomly selected from all the institutions in Kwara state, Nigeria. The researchers developed the Lecturers Assessment of Computer Usage Questionnaire (LACUQ) and Rating of Lecturers Use of Computer for Instruction (RLUCI) were used to elicit information on how their computers are managed in terms of competency and frequency of use. The instrument was validated and tested for reliability by the researchers using test-retest method within three weeks interval. This yielded a Pearson Product Moment Correlation Coefficient of 0.89. Data analysis on the only hypothesis was done using t-test. Results indicated that Lecturers do not use their computers

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frequently for instructional purpose. and there is no significant difference in the usage of computers by both male and female Lecturers. Based on these findings, it is recommended that awareness forum and seminars be organized by institution management for Lecturers use of computers for instructional purposes.

Key Words: ICT Use, Instructional Purposes and Assessment

Introduction

Tertiary institutions, which constitute the apex educational level in Nigeria, are grouped into three: Universities, Polytechnics, and Colleges of Education, which used to be called advanced teachers' Colleges in the 1980s. In view of the enunciation of the National Policy on Education (FRN, 2004) that tertiary institutions shall contribute to national development through high level human capital development, it is therefore, mandatory that tertiary institutions must train students to be relevant and be active participants in the modern society where Information and Communication Technology (ICT) is crucial for living. The last decade of the 20th century was generally referred to as the information technology age. The dawn of the 21st century with emerging rapid developments in Information and Communication Technology (ICT) has transformed this age to the knowledge age (Olumorin, 2008).

Computer, being a major component of information technology is very relevant to human capital development in all fields of knowledge for the growth of the nation. Hackbarth (1996) observed that advances in software design have made computer more user friendly so that many functions can now be done by people with no technical background. Modern computer systems remain the most complex and interesting achievements of man. They are fast, highly reliable and has near limitless versatility. A large commercial computer can execute five to ten million instructions per second. This raw processing potential can be programmed so that a single machine performs diverse tasks such as complex engineering computations, the design of high speed aircraft, preparation of payroll for thousands of employees, complex calculations in physics, statistics and mathematics, analysis of the characteristics and nature of chemicals. and keeping track inventory for wholesale and retail stores, to mention a few.

There are ways by which the use of computers in tertiary institutions could be classified. There are institutions that have computer laboratories while others have computers installed in lecturer's offices and others have a central computing unit with operators attached. Another variety outlined in the research of Baker and Tolhurst (1996) are the institutions that use educational software package and those that require computers for the purpose of clerical work and production of examination results. There are also institutions that use applications such as word processing,

power point and the likes for delivery of lectures and research tool with internet facilities, while others enjoy the combination of two or more of the classes. It is apparent that whatever class the use of computer in an institution falls, lecturers are involved in one way or the other in the use.

The relevance of computers in education is strongly supported by educators, researchers, and authors. Harold (1991) noted that increasing technological sophistication of our society will require teachers to master an increased variety of complicated subject materials, sophisticated skills and perform skills at higher standards.

Chambers (2002) identified computer education as an extremely effective form of education, which assists lecturers to have a well-defined form of instruction. This is so because lecturers are able to respond to individual student's needs, adjust their instruction to the students zone of proximal development and provide instant feedback on progress.

Eras in human history have witnessed a lot of investigations on how things can be made easy. These called for more sophisticated technology and closely related socio-cultural changes that can be found in the drift from one technology to another. Computers are classified into mainframes, mini, micro and super computers. The super computers are probably yet to find that way into Nigeria in large numbers (Papohunda, 1999). These various types of computers are fast becoming the areas on which people's mind and the view of modern world hinge, because we are already moving into the 10th generation of computer (Chambers, 2002).

Norton, (1985) reported that because of the rate at which new uses are being found for computers daily, it is likely that in future, all forms of manual work would have been manipulated to require the use of computerized tools, machines, and equipment. This is evident in how computer education is currently allowing a large number of educators and students to participate in the world of computing for ease of output.

The use of computers has also generated the quest for more ideas on how to diversify and improve productivity in the administrative set up of institutions. It has been used in scheduling classes, budgeting, managing applications and instructional outputs (Sofoluwe, 2007). In the area of communication which is also a component of teaching and learning representation like learning and imagery are types of instructional materials messages that can enhance students learning through the use of computer assisted instruction (Dede, 1996). The most applicable way to broaden the instructional messages is to apply the use of Computer Assisted Instruction (CAI), Computer Managed Instruction (CMI), Computer Based Instruction (CBI) and Computer Assisted Design (CAD) among others.

Graham (1986) is of the opinion that even though financial and technical barriers debar execution of works on computers with adequate knowledge of its

use, education could be adjusted in favour of altering curricular, pedagogical assessment practices with technical, economic, psychological, political and cultural output. If this is effectively done, there is no doubt that the nation will develop the necessary manpower for her growth.

Skinner (1968) asserted that there are more people in the world than ever before, and greater part of them wants an education. To be able to cope with the desired need of educating the populace more efficiently, high-tech tools and equipment that can stand the test of time, such as the computer, which can help to learn at a faster rate, diagnose, and propound theories for complicated needs are desirable.

Despite various issues relating to use of computer by lecturers, it is imperative to examine the issue of gender is an important aspect when considering matters relating to science and technology. It is important because with a social system or community, there is the tendency to interact in order to influence the adoption of some practices among male and female members of a group.

Several researchers have investigated the influence of gender on competence, use, and attitude towards computers, information and communication technology generally. For instance, Kirkpatrick and Cuban (1998) reported that males use computers more often, in more places and for more purposes than females do. It was further emphasized that those disparities increase with age. However, the same study revealed that when females and males are at the same level in terms of types of experiences on computer, female's achievement scores are similar to those of their male counterparts in computer class. On the contrary, in the United State, the Higher Education Research Institute (HERI, 2000) noted that the type of gender-divide found in the number of students who use new technologies are close with almost an equal percentage of females and males being frequent users of computer.

Kirkpatrick and Bojin (2000) identified four variables that could be used for gendered self-assessment on use of computers. The four variables are social context, patterns of dominance/pattern of collaboration, competence, and socio-economic status of the family. The social context revealed that gender differences were largely related to computer anxiety and audience effect. Males tend to have more experience than females and therefore showed more positive attitude towards computer than their female counterparts. Boys were found to dominate in both computer literacy and level of interest in use of computer. It was also identified that socio-economic status pave way for stereotyped attitude in using computers.

The purpose of this study is to assess the use of computers for instructional purposes Tertiary Institution in Kwara State, Nigeria. Specifically, it will assess the difference in the frequency use of computers by male and female lecturers. The study obtained data to answer the following research questions:

1. How proficient are lecturers of tertiary institutions in Kwara State in the use of computers for instruction.
2. How frequently do lecturers in Kwara State in the use computers for instruction of tertiary institutions.

Methodology

The survey design was adopted for the study. The population for the study was all lecturers of University of Ilorin, Ilorin; Federal Polytechnic, Offa, Kwara State Polytechnic, Ilorin; Kwara State Colleges of Education at Ilorin, Oro and Lafajji; College of Arabic and Islamic Legal Studies, Ilorin and Nigeria Army School of Education, Sobi, Ilorin.

All the lecturers in the eight tertiary institutions were stratified along their of gender and from each stratum, the random sampling technique was used to select lecturers from one University, five Colleges of Education and two Polytechnics. In all, 611 lecturers were sampled using ratio 1:3. However, purposive sampling was used to select all lecturers in institutions where the total number of lecturers were low and where number of female lecturers were also relatively low. The number of sampled lecturers was 677 as shown on Table 1.

The researchers made questionnaire titled "Lecturers Assessment of Computer Usage Questionnaire (LACUQ) and rating scale titled "Rating of Lecturers' Use of Computer for Instructions. For face and content validity, two (2) Educational Technologist and two (2) Computer Scientist were asked to rate the lecturer for use of instructions. The descriptive survey method was employed for the investigation. Questionnaire was used to gather necessary information from lecturers of the sampled University, Colleges of Education and Polytechnics. The response modes for the statements were: Highly proficient (HP), Proficient (P), Somewhat (SW) and Not proficient (NP)

Table 1: Number of Respondents per Institution:

Institution	Male	%	Female	%	Total (100%)
University	190	90.47	20	9.52	210
Polytechnics	140	76.92	42	23.07	182
Colleges of Education	216	75.78	69	24.21	285
Total	564	80.64	131	19.35	677

The statistical tools used for the analysis of data are the percentage ranking whereby frequencies were assigned to items, t-test was used to test the only hypothesis. The alpha value used for accepting or rejecting the hypotheses was 0.05.

Results

Percentages resulting from frequency counts were used to calculate results for the study. Data collected were used in testing the only hypothesis using t-test. The alpha value used for accepting or rejecting the hypotheses was 0.05.

Research Question 1

How proficient are lecturers of tertiary institutions in Kwara State in the rise of computers for instruction?

The instrument developed for data collection was used to observe lecturers and their use of computers for instructional purposes was rated. Summary of this is presented on Table 2.

Table 2: Rating of Lecturers' use of Computers for Instruction

	HP	%	P	%	SW	%	NP	%
University	2	0.95	2	0.95	25	11.9	181	86.19
Polytechnic	0	0.00	0	0.00	76	41.75	106	58.24
KWCOE	0	0.00	5	1.75	81	28.42	199	69.82

All the lecturers were rated by very low because of the high percentages of all the lecturers across the institutions were not proficient. Between 58.34% and 86.19% fall in this category. It should be noted however that 0.95% of University lecturers were highly proficient and proficient HP and P. This was considered to be higher than those of their colleagues in other institutions. The highest proportion of lecturers that were somewhat proficient were found in the polytechnic.

Research Question 2

How frequently do lecturers of tertiary institutions in Kwara State use computers for instructions?

Frequency of use of computers for instruction was also rated and summarised on Table 3:

Table 3: Frequency in use of computers

	Frequent in use				Not frequent in use			
	M	F	T	%	M	F	T	%
University	161	17	178	84.76	29	3	32	15.24
Polytechnics	95	19	114	62.63	45	23	68	37.37
Coll. Of Edu.	190	45	235	82.45	26	24	50	17.55
Total	446	81	527		100	50	150	

Results in Table 3 indicated that most lecturers across all types of institutions use computers frequently. University lectures that frequently use computer constituted 84.76% 62.63 of lecturers of Polytechnics and 82.45% of Colleges of Education lecturers frequently use computers. On the other hand, 15% of Lecturers in the University, 37.37% of those in the Polytechnic 17.55% of those in the Colleges of Education do not frequently use computers for instruction.

Hypothesis

There is no significant difference between the frequency in use of computer by male and female lecturers.

Summated ratings of respondents' use of computer were used as scores and the means for male and female participants were used to carry out a t-test summary as presented in Table 4:

Table 4: Frequency in use of Computer by Male and Female

	No	$\bar{X}$	S.D	AF	T-test value	Sig. (2 tailed)
Male	546	15.51	8.49	675	3.45	.01
Female	131	12.79	6.15	262.94		

Table 4 indicated that there is no significant difference in the frequency of use of computers by male and female lecturers. This is because of the t-test value of 3.45 which is not significant the 0.05 alpha level. As a result of this, the null hypothesis is therefore accepted.

Discussion of Findings

The major findings from the study are that of the lecturers were generally low their proficiency in the use of computers. It was also found that majority of the lecturers use computers frequently. The University lecturers' usage of computers is higher because lectures are delivered with the use of power point and internet services are necessary to carry out researches. Also, no significant difference was found in

the usage of computers by male and female lecturers. This is against the findings of Kirkpatrick (1998) that male use computer more often than females.

In addition to this, HERI (2000) explained that male and female were the same in all areas. In respect of these findings it could be concluded that issues concerning frequency use, type of institution male and female use of computer in this knowledge age are the same.

Conclusion

There is evidence from this study to conclude that many lecturers of tertiary institutions in Kwara State have low proficiency in use of computers whereas majority of them tend to use computers for instructional purposes. This implies that their limitations will reflect in the level of usage and their efficiency on the job. It was discovered that lecturers who had little or no competency in use of Generic Software, basic computer operation and integration of computer use computer to teach.

It can be concluded that ICT knowledge facilitates high-level training and other educational processes and products, in line with the positive attitude of lecturers who are charged with facilitating the high level of training and other educational processes and products.

Recommendations

Based on the findings, it is recommended that lecturers should be more familiar with computers in order to perform many tasks with the use of computer so as to increase their level of competency. They should constantly attend seminars, workshops and train the trainers' conferences in the area of information and communication technology to update their knowledge of computer usage for various tasks.

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