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Utilization of Information and Communication Technology Among Male and Female Business Education Lecturers in Nigerian Universities

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Abstract

This study was conducted to study the level of utilization of information and communication technology (ICT) equipment in teaching of Business Education courses in Department of Business Education in Universities in Nigeria. A population of 117 business education lecturers in seven federal and state universities in Nigeria was used. The instrument for data collection was a four-point scale questionnaire. Two research questions were answered using mean and standard deviation. Hypotheses 1-2 were tested using t-test statistics. All the hypotheses were tested at 0.05 level of significance. The null hypothesis was rejected because the calculated t-value was greater than critical t-value. Male and female respondents differed significantly in mean ratings of utilization of ICT equipment for teaching marketing education courses. Male teachers had a higher proportion of utilization of ICT compared to female teachers. Male and female respondents also differed significantly in the mean ratings of utilization of ICT equipment for teaching office technology and management education courses. Males had a higher proportion of utilization of ICT equipment compared to females. Based on the findings it was recommended, among other things, that the federal government as well as university authorities regularly sponsor female lecturers on various in service training.

Keywords: communication, utilization, technology, business, education, equipment

Business education encompasses office technology and management education, accounting education, marketing education, and computer education. It is a unit of vocational and technical education, which is usually housed under the faculty of education in the Nigerian context. The courses focus attention on the pedagogy of teaching and learning of business education courses.

According to Esene and Ohiwerei (2005), as cited in Omo-Ojugo and Ohiwerei (2008), business education subjects have not been popular in Nigerian secondary schools because of the bias against vocational education. This is further reinforced by the attitude of Nigerian parents

who prefer the conventional grammar schools to business schools whose curricula are directed towards the training of secretarial and clerical personnel (Esene & Ohiwerei, 2005). This impression was prior to the release of the National Policy on Education Revised (2004). The policy which recommended the 6-3-3-4 educational system was instrumental to the inclusion of business subjects in the secondary school curriculum.

Today, the term information has encompassed many aspects of computing and technology, and the term has become very recognizable. According to Ohiwerei (2005), information and communication technology encompasses all those technologies that enable the handling of information and facilitate different forms of communication among human actors, between human beings and electronics systems. Okoro, Ikpotokin, and Ekong (2002) affirmed that information and communication technology is a variety of means, which enables the capture or creation, storage or distribution of data, information, and knowledge. Through information and communication technology business educators are able to collect data, which represent raw fact, numbers, and figures. The knowledge gained is the ability to make best use of the information and also to practicalize it to the growth of business education.

The world today is a global village, whereby all activities relating to the performance of works in the offices and teaching and learning are all tagged to information and communication technology. A business educator upon graduation is expected to work in the office, as well as to teach students business subjects. The lack of the knowledge of information and communication technology on the part of business educators poses a serious problem to the teaching of business education courses in Nigerian Universities where business education courses are being offered.

Information and communication technology equipment are the necessary facilities needed for the effective teaching and learning of business education courses in Nigerian universities. Unfortunately there is insufficient information and communication technology equipment for this purpose. Hence, Okwudishu (2005) indicated that unavailability of some information and communication technology components in schools hampers teachers' use of it. Azih and Nwosu (2012) noted that tertiary institutions offering business education courses in Ebonyi State of Nigeria do not have enough facilities for the adoption of e-learning in their tertiary institutions.

The Nigerian university system is characterized by numerous problems including difficulties in the utilization of information and communication technology in the teaching of business education courses. This has resulted in poor worldwide ranking based on research output on teacher/student ratio; proportion of international staff; employers' rating of graduates; and peer review (Abubakar, 2005; Sokumbi, 2006). This lack of quality was also evidenced in the results of the accreditation exercise conducted by the National Universities Commission (NUC), between November 13 and 26, 2005; with the major result being the non-accreditation of some programmes of the first generation universities at Ibadan, Ife and Nsukka, as well as findings by the accreditation panel that there was a dearth of qualified academic staff and learning facilities (Nwaopara, Ifebhor, and Ohiwerei, 2008).

Ololube (2006) reveals that many universities are not information and communication technology oriented even at this stage of development. The problem therefore would be as a result of inadequate funding by the government, weak infrastructure in place, lack of skilled personnel to instruct, lack of relevant teaching software, and also limited access to the internet. These problems have made teaching and learning (pedagogy), especially in the 21st century, inadequate.The magnitude of these problems and their implications on students has inspired this research on the utilization of information and communication technology in business education in Nigeria. Specifically, the study will;

- Ascertain the level of males' and females' utilization of information and communication technology equipment for teaching marketing education courses in business education departments.
- Determine males' and females' utilization of ICT equipment for teaching office technology and management education courses in business education departments.

Research Questions

1. What is the level of utilization of information and communication technology equipment for teaching marketing education courses in federal and state Universities among male and female business education lecturers in Nigerian universities?
2. What is the level of utilization of information and communication technology equipment for teaching office technology and management education courses among male and female business education lecturers in Nigerian universities?

Research Hypotheses

The following hypotheses have been formulated and would be tested at 0.05 alpha levels of significance.

HO_1: The responses of business educators on the level of utilization of information and communication technology equipment for teaching marketing education courses in departments of business education will not differ significantly between males and females.

HO_2: The responses of business educators in the level of utilization of information and communication technology facilities used for teaching office technology and management education courses in departments of business education will not differ significantly based on their sex.

The research aims at the level of utilization of information and communication technology among male and female business education lecturers in all universities where business education courses are offered in South-South geo-political zone of Nigeria. Specifically all the options in Business education namely; Marketing Education and Office Technology and Management Education would be covered.

Review of related literature

Following the views of Rathgeber (1995), although no gender-disaggregated statistics of information and communication technology users in Africa are available, it seems likely that more men than women are users, simply because in Africa men generally have greater access to technology. Reports given by Berg et al. (2002) and Cornelliussen (1997) for the developed world revealed that the use of information and communication technology was higher for male than female respondents. But Aduwa-Ogiegbaen and Isah's study in 2005 at the University of Benin, which tried to investigate the role of gender in Internet use, found that there was no significant difference in Internet use by males and females. Based on these reports, there is a need to find out whether gender influences information and communication technology use for scholarly communication.

Women have special responsibility to children and the elderly, hence they have less time for many issues outside their household including information and communication technology. Another factor is the problem of attracting women to science and technology studies and this

may have a "carry-over" effect on information and communication technology use. Compared to developed countries, investment in information and communication technology in developing countries is relatively low (Indjikian & Siegel, 2005).

La Valle and Blake (2001), Selwyn (2003), and Sorenson and Stewart (2004) have noted that there is a disparity in the use of information and communication technology between males and females. Writers such as Hafkin and Taggart (2001) have noted that factors which affect the use or non-use of ICTs by men may actually be different from those that affect use or non-use by women, and that it is important to study gender differentials in information and communication technology adoption and use, because technology is not gender neutral. It is the general belief that women are lagging behind men when it comes to the accessibility, availability, and use of ICTs. Hafkin and Taggart (2001) identified factors such as literacy and education, language, time, cost and geographical location of facilities, social and cultural norms, as well as women's computer information and dissemination skills as constraints against women's access to information technology.

According to Olatokun (2007), research has similarly revealed that 41 percent of working mothers have to attend to their children while at work. Women in urban areas have little support from their extended family or community and so are forced to take their young children with them to work. Or the infants are left with older female siblings while their mothers are at work, which prevents the older girls from attending school, and partly explains the high levels of illiteracy among young girls. Men in Nigeria have much greater control over resources than women do. As a result of this, the Nigerian government has initiated series of programmes to assist women in obtaining micro-finance and credit, including the formation of co-operatives and self-help organizations such as Federation of Nigerian Women's Societies (FNWS) in 1953, National Women's Commission (later upgraded to the Ministry for Women's Affairs and Social Development), Family Support Programme (FSP), and Family Economic Advancement Programme (FEAP). However, these programmes have not achieved the desired goal, as the situation has not changed.

In research conducted by Kay (2006), he found that male teachers had relatively higher levels of computer attitude and ability before computer implementation, but there was no difference between males and females regarding computer attitude and ability after the implementation of the technology. He claims that quality preparation on technology can help lessen gender inequalities.

Socially and culturally, Hafkin (2002) also reported that women tend to have less access than men to those information and communication technology facilities that do exist. Frequently, rural information centres or cybercafes are located in places that women may not be comfortable frequenting. Since most communications facilities in rural areas are shared public access, women also have problems of time. Given multiple roles and heavy domestic responsibilities, their leisure hours are few, and the centres may not be open when women can visit them. Or they may be open in the evenings, when it is problematic for women to visit them and return safely to their homes in the dark. Their mobility (both in the sense of access to transport and ability to leave the home) is also more limited than that of men. Some accommodations that may be needed to ensure gender equality in access and use of ICTs are adaptation of schedules to suit women's hours and availability of women support staff and trainers. In addition to this, Hafkin (2002) stated that another cultural aspect of gender and ICTs is gender bias in attitudes towards women studying or using information technology. The problem is worse in Africa than in any other regions. In Uganda, girls did not get access to the limited number of computers installed in

school because of the socio-cultural norm that "girls do not run" (Gadio, 2001). As a result, boys ran and got to the computers first and refused to give them up to girls. Additionally, the earlier curfew hours for girls at boarding schools further constrained their access to computers. In India, in the well-known "hole in the wall" experiment, the aggressiveness of boys pushing away girls prevented the girls from using the computers (Mitra, 2001).

Hafkin (2002) opined that there are gender issues in the way that ICTs are used in developing countries. To date, most women's use of ICTs has been confined to email and sometimes to listservs (email discussion lists), generally in connection with advocacy and networking activities. The main reasons for this concentration are cost of access and limitations of time, bandwidth, and technical skills. To date, few women have used it for business, entertainment (the predominant use in the developed world), or education, including education in matters related to livelihood and well being of themselves and their families (e.g. health and nutrition education). A number of the factors above fall into the category of financial and educational deficits in accessing and using ICTs.

Selwyn (2003) noted that a higher proportion of males than females report access to ICT such as the Internet. In the UK, La Valle and Blake (2001) found that women were less likely to have access to computers. Even in a developed country like the Netherlands, Sorenson and Stewart (2004) noted that although gender differences in terms of access were small, they still exist, and to buttress this – the United Nations Secretary General, Kofi Annan, in the year 2000 stated that there is a gender divide, with women and girls enjoying less access to information technology than men and boys. The gender divide within the digital divide could be seen in the lower numbers of women users of information and communication technology compared to men. One illustration of this is the number of women Internet users and the majority of the world's women do not use the Internet.

Also, Olatokun's (2007) research revealed that all respondents were unanimous on the following possible solutions that could be adopted to bridge gender digital divide: provision of information and communication technology facilities to women academics; training them to acquire information and communication technology skills; providing loans to purchase information and communication technology equipment and incorporating them into formulating information and communication technology policies. Other possible measures to bridge gender digital divide include: ensuring that educational and academic curricula are gender fair; including gender sensitivity in school curricula & information and communication technology training modules to correct existing cultural and social gender biases and stereotypes; as well as giving scholarships to women academics in information and communication technology related courses. Also, 204 (99.5%) indicated that getting institutional and national information and communication technology policies, initiatives and laws to redress gender digital divide is a probable solution and 195 (95.1%) of them indicated creating and improving women academics' access to the Internet could be a solution.

Methodology

This research provides a description of the methods the researcher used in carrying out the study. For the purpose of clarity and orderly presentation, the following areas are described: research design, area of the study, population of the study, sample and sampling technique, instrument for data collection, validation of instrument, reliability of instrument, administration of instrument, method of data collection, and method of data analysis.

This study utilized a descriptive survey research design. This is because it seeks the opinion and perceptions of the respondents. The aim of this type of design used for the study has earlier been recommended by Asika (1991), Ali (2006), and Uzoagulu (1998). This type of design is useful in addressing and evaluating questions about the effectiveness and impact of programmes. It emphasizes the use of comparative data as contents for interpreting findings. Survey design increases researchers confidence that observed outcomes are the result of a given programme or innovation instead of a function of extraneous variables or events.

This research was carried out in the south–south geo-political zone of Nigeria. This zone comprises Akwa-Ibom, Bayelsa, Rivers, Delta, Edo and Cross-River States. There are six (6) state universities and six (6) federal universities in this zone. Of this number, seven Universities offer Business Education as a programme.

The population of this study comprised all lecturers of business education in the seven affected universities in the south-south zone of Nigeria. In view of the fact that the population of this study is small, the researcher used all 117 business education lecturers for the study. This is a manageable size, hence the researcher was able to adequately reach all of them. Nwana (1993) in Uzoagulu (1998) stated that there is no fixed number and no fixed percentage is ideal, rather it is the circumstances of the situation that determines what number or what percentage of the population should be studied.

The main instrument for collection of data is a questionnaire titled "Utilization of Information and Communication Technology in Business Education in Nigeria" (UICTBEN). It is a structured questionnaire which contained items designed to help in the level of utilization of information and communication technology among male and female business education lecturers. The questionnaire contained 100 items which elicited data on the level of utilization of information and communication technology among male and female business education lecturers in business education in Nigerian universities.

The instrument was developed by the researcher using literature on utilization of information and communication technology among male and female business education lecturers in business education in Nigerian universities. The questionnaire consisted of two parts (part one and part two). Part one sought personal information such as type of university, sex, age, experience, and qualification of the respondents. Part two comprised three sections (A-C). Section A has 33 items which sought information on provision of information and communication technology equipment for teaching Business Education courses in business education departments. Section B has 33 items which sought information on Utilization of information and communication technology equipment available for teaching Business Education courses in federal and state universities in business education departments. And section C has 34 items which sought information on Utilization of information and communication technology equipment available for teaching Business Education courses among male and female in business education departments.

The instrument was subjected to face and content validation by experts. These experts were presented with the instrument, purpose of the study, research questions and hypotheses. They all offered their criticism on the face and content validation of the instrument by observing; suggesting, and the necessary corrections were effected in the final instrument. In an attempt to establish the reliability of the instrument, test-retest method was carried out using 15 Business Education Lecturers from other areas different from the study area. The instrument was first administered on 15 Lecturers from Business Education. Two weeks later, the same test items were administered to the same 15 Business Education Lecturers. The first and second responses

were correlated to obtain the reliability co-efficient. The result of the test-retest was correlated using the Pearson's product moment correlation co-efficient to obtain the reliability co-efficient of 0.77. Based on established standards, the instrument is acceptable.

The instrument was administered on 117 respondents by the researcher with the assistance of trained research assistants from the south-south geo-political zone of Nigeria. The researcher and the research assistants handed over the instruments to the respondents and allowed three months for the completion and return. This allowed the respondents enough time and opportunity to study and understand the questions before responding. The research assistants utilized for the administration of the instrument included lecturers of business education from different universities across the south-south geo-political zone of Nigeria, one from each of the universities. They were adequately briefed on what is expected of them during the exercise. Though, some of the respondents completed the questionnaires and submitted on the spot while others submitted later after serious and constant persuasion within the period of three months yielded one hundred percent return. This was made possible due to the personal commitment and determination of the research assistants coupled with the fact that business education lecturers are highly skilled and good researchers that know the value of research questionnaires. The overall returned questionnaires constituted 117 representing 100 percent. After the collection of copies of the instruments from the respondents, they were checked one after the other to confirm whether they were properly completed, before they were subjected to analysis.

The researcher used simple descriptive statistics to analyze the data gathered from the questionnaire. Mean and standard deviation were used to determine the degree of relevance of the items that relate to research questions 1, 2 and 3 in the questionnaire. Nominal values such as 4, 3, 2, and 1 were assigned to different options of the items for positively cued items and 1, 2, 3, 4, for negatively cued items. The standard deviation is commonly used as a measure to compare the spread in two or more sets of observations. For the purpose of this study therefore, the standard deviation was used to measure how close or far apart the values are from the mean. Such a measure of dispersion indicates how reliable the calculated mean are to this study. The mean of each item was interpreted in relation to the limits of the values assigned to the response categories of the instrument.

This research focused on the results of data analyzed based on the three research questions and hypotheses that respectively guided the study.

Research Question 1: What is the level of utilization of information and communication technology equipment for teaching marketing education courses in department of business education in Nigeria?

For this research question, data obtained from the 33 items on utilization of information and communication technology in marketing education courses as contained in the questionnaire administered to Business Education lecturers, both male and female, in universities in south-south geo-political zone of Nigeria were used to answer the research question. Summary of the result obtained is shown in table 1.

Research Question 2: Table 2 showed the utilization of information and communication technology equipment for the teaching of office technology and management education courses in department of business education in male and female lecturers in universities in south-south

geo-political zone of Nigeria were used to answer the research question. Summary of the result obtained is shown in table 2.

Hypotheses: Null hypotheses 1-2 were tested using t-test statistic. Summary of the analyses for the three hypotheses are shown in the following tables.

Hypotheses One: The responses of business educators on the level of utilization of information and communication technology equipment for teaching marketing education courses in department of business education will not differ significantly between male and female lecturers.

Table 2: T-test Comparison between male and female lecturers on Utilization of Information and Communication Technology Equipment for Teaching Marketing Education Courses in Business Education Departments

Variables	***N***		***SD***	***t-cal.***	***Df***	***t-tab.***	***Dec.***
Utilization of ICT Equipment for Teaching Business Education Courses	117						
Male	62	1.92	0.33				
				4.921	115	1.960	Rejected
Female	55	1.56	0.46				

P< .05

Table 2 shows the mean ratings of utilization of information and communication technology equipment for teaching marketing education courses for male lecturers as 1.92 and female lecturers as 1.56. The calculated t-value is 4.921 and the critical t-value is 1.960. The null hypothesis is rejected because the critical t-value is greater than the calculated t-value. Male lecturers and female lecturers differ significantly in the mean () ratings of utilization of information and communication technology equipment for teaching marketing education courses. The male lecturers had a higher proportion of the utilization of information and communication technology equipment compared to the female lecturers.

Hypotheses Two: The responses of business educators on the level of utilization of information and communication technology equipment for teaching Office technology and management education courses will not differ significantly between male and female lecturers.

Table 2: *T*-test comparison between Male and Female Lecturers on Utilization of Information and Communication Technology Equipment for Teaching Office Technology and Management Education Courses in Business Education Departments

Variables	*N*		*SD*	*t-cal.*	*Df*	*t-tab.*	*Dec.*
Utilization of ICT Equipment for Teaching Business Education Courses	117						

Males	62	1.99	0.44			
				3.768	115	1.960 Rejected
Females	55	1.64	0.56			

P< .05

Table 2: Utilization of information and communication technology equipment for teaching marketing education courses males' mean score shows as 1.99 and mean for females as 1.64**.** The calculated t-value is 3.768 and the critical t-value is 1.960. The null hypothesis was rejected because the calculated t-value is greater than critical t-value. Males and females differ significantly in the mean ratings of utilization of information and communication technology equipment for teaching business education courses. The males had a higher proportion of the utilization of information and communication technology equipment than the females. This is in line with Selwyn (2003), which noted that a higher proportion of males than females report access to ICT such as the Internet.

Discussion

Hypothesis one

The first hypothesis states that the responses of business educators on the level of utilization of information and communication technology equipment for marketing education courses in department of business education will not differ significantly between males and females.

The null hypothesis is rejected because the critical t-value is greater than the calculated t-value. Male lecturers and female lecturers differ significantly in the mean **()** ratings of utilization of information and communication technology equipment for teaching marketing education courses. The male lecturers had a higher proportion of the utilization of information and communication technology equipment compared to the female lecturers.

This finding of the hypothesis is supported by the view of Hafkin (2002) that stated that socially and culturally, women tend to have less access than men to those ICT facilities that do exist. This hypothesis is equally supported by the view of Kay (2006), which stated that research studies revealed that the male teachers used more ICT in their teaching and learning processes than their female counterparts.

Hypothesis two

The second hypothesis states that the responses of business educators on the level of utilization of information and communication technology equipment for Office technology and management education courses will not differ significantly between males and females lecturers.

The null hypothesis was rejected because the calculated t-value is greater than critical t-value. Males and females differ significantly in the mean **()** ratings of utilization of information and communication technology equipment for teaching business education courses. The males had a higher proportion of the utilization of information and communication technology equipment than the females this is in line with Selwyn (2003) which noted that a higher proportions of males than females report access to ICT such as the Internet.

Conclusion and recommendations

In the light of the findings of this study, the following conclusions were drawn:
The study reveals that the male lecturers had a higher proportion than the female lecturers in the utilization of information and communication technology equipment in teaching of marketing education courses in the department of business education in Nigerian universities.

The findings of this research will be beneficial to the government and education planners on the issue of policy formulation and implementation. The findings of this research will help to achieve the human resource strategies targeting capacity building for information and communication technology knowledge and skills in business education.

The findings will help to collaborate online teaching and learning with faculty and students from around the world. It will help to challenge students to learn, be independent, and hence be responsible. It will help to up-date students' academic knowledge and instructional practices. It will further provide greater opportunities for research collaboration and networking among scholars spread throughout the world, thus, national and international dimensions of research issue can be studied as they can allow for communication with peers and experts around the world. Through collaborative knowledge building, Nigeria, which is a developing country with lower ICT utilization compared to advanced countries like the U.S.A., will benefit from this study.

Finally, the males had a higher proportion of utilization of information and communication technology equipment compared to the females in the teaching of office technology and management education in the department of business education in Nigerian universities.

In the light of the above findings and conclusion of the study, the following are therefore recommended.

1. Governments and university authorities should provide funds for the full integration of information and communication technology into Nigerian educational system. Lecturers of business education should be sponsored on regular information and communication technology up-dating programmes.
2. Federal and state government should improve student's motivation by providing both desktops and laptops for them.
3. Federal government as well as university authorities should regularly sponsor female lecturers on various in-service training

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