COMPUTER SCIENCE LECTURERS' CHARACTERISTICS AND THE APPLICATION OF INFORMATION AND COMMUNICATION TECHNOLOGY IN FEDERAL UNIVERSITIES IN SOUTH–SOUTH NIGERIA.

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ABSTRACT

The main purpose of this study was to determine the influence of Computer Science lecturers' demographic characteristics on their application of ICT resources in Federal Universities in South-South Nigeria. Specifically, the study was designed to determine the difference in lecturers' application of ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria based on the following demographic characteristics: educational qualification, gender, and age. To achieve this purpose, three specific purposes, three research questions and three null hypotheses were formulated and tested at 0.05 level of significance. The ex-post facto research design was used in the study and it was carried out in South-South Nigeria. The population of the study consisted of 225 Computer Science lecturers from all the six federal Universities in South-South, Nigeria. The sample of the study comprised 142 Computer Science lecturers. The sample size was determined using Krejice and Morgan's (1970) sampling model while the sample was selected using a combination of proportionate sampling and random sampling techniques. The researcher developed an instrument known as "Lecturer's Characteristics and the Application of Information and Communication Technology Resource Tools Questionnaire" (LCAICTRT-Q) was used for data collection. The validated instrument was administered on 20 Computer Science lecturers from federal Universities in South-South Nigeria that were not used in the main study. The data obtained were subjected to Cronbach Alpha reliability statistics using the Spilt-half method. The internal consistency reliability coefficient obtained was 0.90. The researcher administered the questionnaire to the lecturers with the help of three research assistants who were among the Computer Science lecturers in the sampled universities. Mean was used to answer the research questions, while Multivariate Analysis of Variance (MANOVA) was used to test the null hypotheses at the 0.05 level of significance. The findings of the present study indicate that educational qualification does not significantly influence lecturers' application of ICT resource tools in the teaching of Computer Science in Federal Universities in South-South Nigeria. Federal government of Nigeria should ensure that lecturers are giving adequate training on the utilization of ICT resources in teaching irrespective of their gender since utilization is not gender bias.

KEYWORDS: Computer Science Lecturers, ICT Resources, ICT Resources Tools

INTRODUCTION

Education serves as a major key to socio-political and economic development. Nigeria, as part of the nations' worldwide bid to implement the vision of "Education for All" (EFA), has developed in recent times policies and programmes aimed at achieving this vision. Notable

among them is the commitment to the provision of free and compulsory Basic Education to all citizens as well as the renewed emphasis on the integration of Information Communication Technology (ICT) into all levels of the educational system. The Federal Government of Nigeria in the Nigerian National Policy for Information Technology (2001) defined ICT as any equipment or interconnected system or subsystem of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission or reception of data or information. United Nations Educational, Scientific and Cultural Organization (UNESCO) (2002) states that Information and Communication Technology (ICT) refers to the combination of 'informatics technology' with other related technology, specifically communication technology. Anderson and Baskin (2002) stated that ICT is used for accessing, processing, gathering, manipulating and presenting or communicating information. These include software, hardware, and even connectivity.

Nigeria, like other countries, has witnessed the integration of Information Communication Technology (ICTs) in various sectors of the economy, including education, over the last decade. As pointed out by Yusuf (2005a,b), the field of education has been affected by ICTs, which have undoubtedly affected teaching, learning and research. Indeed, a great deal of research has proven the benefits of ICT to the quality of education. Ansari (2006) pointed out that ICTs have the potential to innovate, accelerate, enrich and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's workers, as well as strengthening teaching and helping schools to change.

Similarly, Alazam, Bakar, Hanizah and Asimiranis (2012) posited that ICT is the tool for rapid advancement in the 21st century. Through ICT, every part of the world is connected. Thus, the citizens of each country should acquire ICT skills and knowledge to be able to go through the ever changing world. As a result of the explosion of ICT, the world is the classroom and the world exists in the classroom. The change from teacher-centered education system to learner centered education all over the world, has also contributed to the widespread use of ICTs in education. According to Daniels (2002), ICTs have, within a very short time, become one of the basic building blocks of modern society. Many countries now regard understanding ICT and mastering the basic skills and concepts of ICT as part of the core of education, alongside reading, writing and numeracy. As pointed out by Alazam et al (2012), integrating information and communication technology (ICT) in education is an important agenda of all countries because with rapid changes occurring every now and then, no country is willing to be left out.

There is need for effective utilisation of ICT resources in the teaching of Computer Science courses in Nigerian universities. According to Akpan (2014), university lecturers have various tasks to accomplish and these range from teaching, research and publications, marking of tests and examinations, supervising students' research activities, supporting students through advisory roles, attending conferences and providing community services.

In order to be effective and efficient, they need to acquire an appreciable level of ICT competence to enable them meet with the demands of their job. Many studies such as Alazam, Bakar, Hanizah and Asimiranis (2012), Tweed (2013); Mustafa (2014); Aramide, Ladipo and Adebayo (2015) and Mahdi, Laafon and Janati-Idris (2015) have identified demographic variables as one of the important factors affecting effective integration of ICTs in teaching by teachers and lecturers. According to Aramide, Ladipo and Adebayo (2015), among the demographic variables which have often been cited as having a major influence or predicting the use of ICT resources by individual teachers include: gender; income; level of

education, skills and age. In this study, demographic variables considered include educational qualification, age, gender, years of service or experience, and marital status.

The acquisition of an educational qualification therefore implies the successful completion of a course of study or training programme (Organization for Economic Co-operation and Development, OECD, 2003). Gender can be considered as the society-constructed roles and responsibilities ascribed to males and females by different societies (Ugboaja and Uzoka, 2011). Gender can also be seen as socially constructed roles and socially learned behaviours and expectations associated with males and females (Okeke, 2000). This means that gender is the condition of being masculine or feminine through one's behaviour.

Several studies have found that demographic characteristics have the ability to determine the extent of use or non-use of ICT resources by teachers and students. For example, a study by Mahdi, Laafun and Janati-Idris (2015) showed that educational qualification affects Physics teachers' ability to integrate ICT in schools in Morocco. Similarly, Chauhan (2016) emphasized that one's level of education had the strongest influence on the use of ICT by teachers as most of the people that use ICT are mainly highly educated people. Moreover, Musau and Abere (2015) asserted that those with higher educational qualifications are more likely to use ICT because they may have more skills and chances to go online than those with lower educational qualifications.

On the issue of gender and ICT use, Kidombo (2010) reported that men were more receptive to the use of ICT than women, which may mean that male teachers would be more receptive to ICT than female teachers. Kidbombo explained that this may be due to the fact that women are more preoccupied with other issues that they do not have enough time to use the ICT facility in teaching. Similarly, a study by Manyilizu and Gilbert (2015) revealed that there is gender imbalance of ICT tools applications in teaching with a larger number of male teachers using ICT tools than females. Also, a study by Mustapha (2014) revealed that female secondary school teachers were found to have lower ICT knowledge, skills and ICT applications when compared to their male counterparts. However, Fomsi and Orduah (2017), in a study on gender differences in the use of ICT among teachers in model primary schools in Rivers State, Nigeria reported that there was no significant difference between the mean scores of male and female model primary school teachers in the use of ICT. In view of these contradictory findings, there is need for more investigation.

On the influence of age on ICT usage by teachers, Mayanja (2002) reported that young teachers make use of ICT resources more than the older teachers. Similarly, Alampay (2006) cited in Aramide, Ladipo and Adebayo (2015) found that there was age difference in the use of ICT, as ICT usage was more pronounced among the younger teachers than among their older counterparts.

STATEMENT OF THE PROBLEM

The problem of illiteracy in information technology is serious among teachers in Nigeria as it cuts across primary schools, secondary schools and tertiary institutions of learning. It is observed that many teachers in the country do not have basic computer appreciation skills, and this problem poses a hindrance to effective integration of computers into educational programmes in the country. This might have contributed to the decline in students' performance in Computer Science courses in recent times, particularly in federal universities in South-South Nigeria, Alampay (2006). It is against this background that this research was

conducted on how each of these demographic characteristics (educational qualification, age group, and gender) individually or collectively influences lecturers ICT usage.

PURPOSE OF THE STUDY

The main purpose of the study was to determine the influence of Computer Science lecturers' demographic characteristics on their application of various ICT resources in Federal Universities in South-South Nigeria. Specifically, the study was designed to determine:

1. The influence of educational qualification on lecturers' application of various ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria.
2. The influence of gender on lecturers' application of various ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria.
3. The influence of age on lecturers' application of various ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria.

Research Questions

The following research questions were raised to guide the study:

1. How does educational qualification influence the application of various ICT resources in teaching by Computer Science lecturers' in Federal Universities in South-South Nigeria?
2. How does gender influence the application of various ICT resources in teaching by Computer Science lecturers' in Federal Universities in South-South Nigeria?
3. How does age influence the application of various ICT resources in teaching by Computer Science lecturers' in Federal Universities in South-South Nigeria?

Research Hypotheses

In order to guide the study, the following null hypotheses were postulated and tested at 0.05 level of significance.

HO_1: There is no significant influence of educational qualification on Computer Science lecturers' application of various ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria.

HO_2: There is no significant influence of gender on Computer Science lecturers' application of various ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria.

HO_3: There is no significant influence of age in Computer Science lecturers' application of various ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria.

Design of the Study

The study adopted an ex-post facto research design. The ex-post facto design was adopted because the independent sub-variables such as teachers' educational qualification, gender, age, years of experience and marital status had already occurred and the researcher had no control over them. More so, the independent sub-variables could be manipulated by the researcher to cause a change in the dependent variable. This design was therefore considered appropriate for this study since the study involve comparing data on the application of various ICT resources (the dependent variable) in the teaching of Computer Science by lecturers of the various demographic characteristics.

Area of the Study

The study was conducted in the South-South geopolitical zone of Nigeria. The South-South zone is made up of six states namely Akwa Ibom, Bayelsa, Cross River, Delta, Edo and Rivers states.

There are six federal universities in the South-South geopolitical zone of Nigeria. These are University of Calabar, Calabar; University of Uyo, Uyo; University of Port Harcourt, Port Harcourt; University of Benin, Benin City and Federal University, Otueke, Bayelsa State. There are also six state universities in the zone. These include Rivers State University, Port Harcourt; Delta State University, Abraka; Akwa Ibom State University, Ikot Akpaden; Cross River State University of Technology, Calabar; Niger Delta University, Wilberforce Island, Bayelsa State and Ambrose Alli University, Ekpoma, Edo state.

Population of the Study

The target population of the study consisted of 225 Computer Science lecturers from all the six federal Universities in South-South, Nigeria (Field Survey, 2018). The population and sample distribution is shown below

Distribution of the Population and Sample of The Study According To The Federal Universities

S/N	Name of University	No of Computer Science Lecturers	Sample Selected
1	University of Uyo	21	13
2	University of PH	76	48
3	Fed University, Otueke	38	24
4	University of Benin	41	26
5	University of Calabar	37	23
6	Fed University of Petroleum, Delta State	12	8
	TOTAL	**225**	**142**

Sample and Sampling Technique

The sample of the study comprised 142 Computer Science lecturers. The sample size was determined using Krejice and Morgan's (1970) sampling model which is shown in Appendix 11. The sample was selected using a combination of random sampling and proportionate sampling techniques. The sample size of 142 respondents was broken down into proportionate sample in the six federal universities using Bourley's proportional allocation formula. After the proportionate sample for each university was computed, the random sampling technique (balloting) was used to select the required sample from each of the six universities.

Instrumentation

A researcher developed instrument known as "Lecturer's Characteristics and Information and Communication Technology Resources Application Questionnaire" (LCAICTRAQ) was used for data collection. The instrument was divided into two sections: Section A sought to elicit general information on the personal data of the respondents such as their educational qualification, gender, and age. Section B contained items on ICT resources which were grouped into five major categories, namely general purpose applications (7 items), general

purpose devices (9 items), video websites used in teaching (10 items), software used in teaching (8 items) and chat rooms used in teaching (16 items). Respondents were required to indicate the extent to which they apply each of the listed ICT resources in teaching Computer Science in federal Universities in South-South Nigeria. Section B of the questionnaire was structured on a four-point scale with options ranging from Always Used (4 points), Often Used (3 points), Seldom Used (2 points) and Never Used (1 point).

Validation of the Instrument

The type of validation done in this study was face validation which is concerned with the extent to which a test is subjectively viewed as covering the concept it purports to measure. It refers to the transparency or relevance of a test as it appears to test participants. Accordingly, the instrument for the study was given to three validaters who comprised two experts in the Department of Vocational Education and one expert in Measurement and Evaluation unit of the Department of Educational foundations, Guidance and Counseling for vetting. Each expert was required to evaluate whether or not the individual items in the instrument is relevant for answering the research questions and testing the null hypotheses. They were also requested to assess whether or not the instrument covers all the main variables in the study. The modifications and corrections suggested by the validates were adopted and used in updating the instrument to ensure the validity of the instrument for the study.

Reliability of the Instrument

The validated instrument was administered on 20 Computer Science lecturers from federal Universities in South-South Nigeria that were not used in the main study. The data obtained were subjected to Cronbach Alpha reliability statistics. The internal consistency reliability coefficient of the whole instrument was 0.90 while that of the various sections were as follows: general purpose applications (0.70); general purpose devices (0.82); video websites (0.76); software (0.78); and chatrooms (0.72). This high reliability index indicated that the instrument was reliable for use in the study.

Method of Data Collection

The researcher politely sought for and obtained permission from the Heads of Computer Science Departments in the sampled federal Universities in South-South Nigeria before administering the questionnaire to the lecturers. The questionnaire administration process was successfully handled by the researcher with the help of three research assistants who were among the Computer Science lecturers in the sampled universities in the zone. 140 out of 142 copies of the questionnaire administered were correctly completed and returned. This represented a 98.59 % return rate.

Method of Data Analysis

Mean and standard deviation (SD) were used to answer the research questions, while the Multivariate Analysis of Variance (MANOVA) was used to test the null hypotheses at the 0.05 level of significance. The purpose of using this was to determine whether the independent sub-variables of academic qualification, gender, age, years of experience and marital status significantly influence the dependent variables (application of the various ICT resources) by Computer Science lecturers in teaching Computer science in federal Universities in South-South Nigeria.

Results and Discussion

The results are presented under their sub-headings that corresponds to their research questions and research hypotheses of the study.

Research Question 1

How does educational qualification influence the application of ICT resources in teaching by Computer Science lecturers' in Federal Universities in South-South Nigeria?

Table 1.: Mean responses on the influence of educational qualification on Computer Science lecturers' application of various ICT resources in teaching (N = 140)

S/N	ICT Resources	B. Sc/HND N = 60	M. Sc/M. Ed N = 69	Ph. D N = 11
		$\bar{X}$	$\bar{X}$	$\bar{X}$
1	General purpose applications	3.48	3.39	3.57
2	General purpose devices	3.56	3.37	3.46
3	Use of Video websites in teaching	3.40	3.26	3.26
4	Use of software	3.39	3.20	3.26
5	Use of Chat rooms in teaching	3.40	3.18	3.44
	Cluster mean	**3.45**	**3.28**	**3.40**

Note: Mean cutoff point 2.5

Table 1 indicates the summary of the mean responses on the influence of educational qualification on Computer Science lecturers' application of various ICT resources in teaching. The lecturers were grouped into three classes based on their educational qualifications as holders of first degree/HND, Master's degree holders and doctoral degree holders. However, there were differences in the application among holders of first degree/HND, Master's degree and doctoral degree with cluster mean response of 3.45, 3.28 and 3.40 respectively. Based on the cluster mean, all the five categories of ICT resources have mean responses above 2.50 implying that the Computer Science lecturers applied the five categories of ICT resources in their teaching. This further indicates that Computer Science lecturers with first degree/HND apply ICT resources most followed by holders of doctorate degree while master's degree holders come last in application of ICT resources in the teaching of Computer science in federal universities in South-South Nigeria.

Research Question 2

How does gender influence the application of various ICT resources in teaching by Computer Science lecturers' in Federal Universities in South-South Nigeria?

Table 2: Mean responses on the influence of gender on computer Science lecturers application of ICT resources inteaching (N = 140)

S/N	ICT Resources	Male N = 79 X	Female N=61 X
1	General Purpose applications	3.38	3.53
2	General purpose devices	3.56	3.59
3	Use of video websites in teaching	3.23	3.43
4	Use of software in teaching	3.25	3.33
5	Use of chat rooms in teaching	3.11	3.53
	Cluster Mean	**3.27**	**3.48**

Note: Mean cutoff point 2.5

Table 2 indicates the summary of the mean responses on the influence of gender on Computer Science lecturers' application of various ICT resources in teaching Computer Science. The lecturers were grouped into male and female. However, there were differences in the application between male and female lecturers with cluster mean response of 3.27 and 3.48 respectively. Based on the cluster mean, the five categories of ICT resources have mean responses above the cutoff point of 2.50 implying that the Computer Science lecturers applied all the five categories of ICT resources in teaching. This further indicates that female Computer Science lecturers apply ICT resources in teaching more than male counterparts in federal universities in South-South Nigeria.

Table 3: Mean responses on the influence of age on computer science lecturers' application of various ICT resources in teaching (N = 140)

S/N	ICT Resources	21-30 yrs N = 19 $\bar{X}$	31-40yrs N = 76 $\bar{X}$	41 yrs+ N = 45 $\bar{X}$
1	General purpose applications	3.20	3.57	3.34
2	General purpose devices	3.05	3.58	3.42
3	Use of Video websites in teaching	3.01	3.47	3.19
4	Use of software	3.10	3.38	3.20
5	Use of Chat rooms in teaching	3.65	3.46	3.28
	Cluster Mean	**3.00**	**3.49**	**3.29**

Note: Mean cutoff point 2.5

Table 3 indicates the summary of the mean responses on the influence of age on Computer Science lecturers' application of ICT resources in teaching. The lecturers were

grouped into three categories as 21 to 30 years; 31- 40 years and 41 years and above. However, there were differences in the application among lecturers in 21 to 30 years; 31- 40 years and 41 years and above with cluster mean response of 3.00, 3.49 and 3.29 respectively. Based on the overall mean, all the five categories of ICT resources have mean responses above the cutoff point of 2.50 indicating that the Computer Science lecturers applied all the five categories of ICT resources in teaching. Table 3 further indicates that Computer Science lecturers aged between 31 and 40 years are the highest users of ICT resources followed by those aged 41 years and above while those aged between 21 and 30 years were the least users of ICT resources in the teaching of Computer Science in federal universities in South-South Nigeria.

Hypothesis 1

There is no significant influence of educational qualification on Computer Science lecturers' application of ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria.

Table 4: Multivariate analysis of variance (MANOVA) test of significant influence of educational qualification on Computer Science lecturers' application of Various ICT resources in teaching

Source	Dependent Variable	Sum of Square	df	Mean Square	F	p-value	Decision
Qualification							
General Purpose Applications	0.45	2	0.23	0.99	0.99	0.38	NS
General purpose Devices	0.01	2	0.04	0.02	0.02	0.98	NS
Use of Video Websites	0.05	2	0.03	0.21	0.21	0.81	NS
Use of software	0.74	2	0.37	4.4	4.45	0.11	NS
Use of Chat rooms	0.18	2	0.09	0.64	0.64	0.53	NS
OVERALL	**0.01**	**2**	**0.01**	**0.12**	**118**	**0.98**	**NS**

*NS= Not significant at 0.05 level of significance.

Table 4 shows the result of the multivariate analysis of variance on the influence of educational qualification on Computer Science lecturers' application of ICT resources in teaching. However, the p-values (0.38, 0.98, 0.81, 0.11, and 0.53) of all the five items and the overall p-value (0.89) is greater than (0.05) ($p > 0.05$). On this basis, the null hypothesis is upheld. It can therefore be concluded that there is no significant influence of educational qualification on Computer Science lecturers' application of ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria

Hypothesis 2

There is no significant influence of gender on Computer Science lecturer's application of various ICT resources in teaching Computer Science in Federal Universities in South-South, Nigeria

Table 5: Multivariate analysis of variance (MANOVA) test of significant influence of gender on computer science lecturers' application of Various ICT resources in teaching

Source	Dependent variable	Sum of squares	Df	Mean square	F	p-value	Decision
Gender	General purpose application	.226	1	.226	.979	0.32	NS
	General purpose device	.433	1	.433	2.460	0.12	NS
	Video websites used in teaching	.090	1	.090	.700	0.41	NS
	Use of Software	.034	1	.034	.402	0.53	NS
	Use of Chat rooms in teaching	.842	1	.842	6.115	.015	S
	Overall	**.257**	**1**	**.257**	**5.348**	**0.23**	**NS**

*NS= Not significant; S = Significant at 0.05 level of significance.

Table 5 shows the result of the multivariate analysis of variance on the influence of gender on Computer Science lecturer's application of various ICT resources in teaching Computer Science in Federal Universities in South-South, Nigeria. . However, the p-values (0.32, 0.12, 0.41, and 0.52) of four items and the overall p-value (0.23) is greater than (0.05) ($p > 0.05$). Since the overall p-value is greater 0.05, the null hypothesis is upheld. It can therefore be concluded that there is no significant influence of gender on Computer Science lecturer's application of various ICT resources in teaching Computer Science in Federal Universities in South-South, Nigeria.

Hypothesis 3

There is no significant influence of age on Computer Science lecturers' application of various ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria.

Table 6: Multivariate analysis of variance (MANOVA) test of significant influence of age on computer science lecturers' application of Various ICT resources in teaching

Source	Dependent Variable	Sum of Squares	df	Mean Square	F	p.val.	Decision
Age	General purpose applications	0.83	2	0.42	1.80	0.17	NS
	General purpose devices	0.10	2	0.05	0.28	0.76	NS
	Use of Video websites	0.51	2	0.26	1.98	0.14	NS
	Use of software	0.76	2	0.38	4.54	0.01	S
	Use of Chat rooms	1.30	2	0.65	4.73	0.01	S
	OVERALL	**0.42**	**2**	**0.21**	**4.40**	**0.02**	**S**

*NS= Not significant; S = Significant at 0.05 Alpha level

Table 6 shows the result of the multivariate analysis of variance conducted to test for significant influence of age on Computer Science lecturers' application of various ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria. The p-value of three out of the five categories of ICT resources is greater than (0.05) while two ICT resources have p-values less than 0.05. Since the overall p-value 0.015 which is less than 0.05. ($p<0.05$) the null hypothesis is rejected. It can therefore be concluded that there is a significant influence of age on Computer Science lecturers' application of various ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria. A post hoc test was carried out as a follow-up to reveal which of the variables contribute more to being significant as shown in Table 6.

Table 7: Multiple comparison of the mean influence of lecturer's application of two ICT resources based on their age

Dependent Variable	(I) AGE	(J) AGE	Mean Difference (I-J)	Std. Error	Sig.
SOFTWARE	21-30 YEARS	31-40 YEARS	-.1726(*)	.06247	.025*
		41 AND ABOVE	.0066	.06690	.995
	31-40 YEARS	21-30 YEARS	.1726(*)	.06247	.025*
		41 AND ABOVE	.1792(*)	.05610	.008*
	41 AND ABOVE	21-30 YEARS	-.0066	.06690	.995
		31-40 YEARS	-.1792(*)	.05610	.008*
CHATROOM	21-30 YEARS	31-40 YEARS	-.3869(*)	.08013	.000*
		41 AND ABOVE	-.2415(*)	.08580	.022*
	31-40 YEARS	21-30 YEARS	.3869(*)	.08013	.000*
		41 AND ABOVE	.1454	.07195	.135
	41 AND ABOVE	21-30 YEARS	.2415(*)	.08580	.022*
		31-40 YEARS	-.1454	.07195	.135

* The mean difference is significant at $p < 0.05$.

Table 7 shows the summary of the post hoc multiple comparison of the mean difference of lecturer's application of two ICT resources based on their age. The result shows that on the usage of software, age of 41 and above with mean score of .1792(*) while the use of chat room fall on age of 21-30 with mean score of .3869(*).This result implies that the significant influence of age on Computer Science lecturers' application of the two ICT resources in teaching Computer Science in Federal Universities in South-South, Nigeria can be attributed to lecturers within the age of 41 and above for use of software and age of 21-30 for the use chat room respectively.

FINDINGS OF THE STUDY

Based on the data collected and analyzed in the study, the following findings were made with respect to the research questions and hypotheses that guided the study:

1. Most Computer Science lecturers with first degree/HND apply ICT resources, followed by Doctoral degree holders, while Master's degree holders came last in the application of ICT resources in the teaching of Computer science in Federal universities in South-South Nigeria.
2. Female Computer Science lecturers apply ICT resources in teaching more than their male counterparts.

3. Computer Science lecturers aged between 31 and 40 years are the highest users of ICT resource tools followed by those aged 41 years and above while those aged between 21 and 30 years are the least users of ICT resources in the teaching of Computer Science in federal universities in South-South Nigeria.
4. There is no significant influence in Computer Science lecturers' application of ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria, based on their educational qualification.
5. There is no significant influence in Computer Science lecturers' application of ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria, based on their gender.
6. There is significant influence in Computer Science lecturers' application of ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria, based on their age.

DISCUSSION ON THE FINDINGS

The discussion is organized under sub-headings that correspond to the major variables in the research questions and hypotheses of the study.

Influence of Lecturers Educational Qualification on Their Application of Various ICT Resource Tools in Teaching Computer Science Courses in Federal Universities in South-South, Nigeria

The analysis of the responses to research question 1 presented in Table 1 revealed that there was a wide difference in the mean responses of Computer Science lecturers on their Application of ICT resource tools in teaching based on their educational qualifications. It was found that Computer Science lecturers with first degree/HND apply ICT resources most followed by doctoral degree holders while master's degree holders come last in application of ICT resources in the teaching of Computer science in federal universities in South-South Nigeria. Testing of the corresponding null hypothesis 1 revealed that although there was a wide difference in the mean responses of Computer Science lecturers on their application of ICT resource tools in teaching based on their educational qualifications, the difference was not wide enough to be significant. Thus, the null hypothesis was upheld implying that there was no significant influence in Computer Science lecturers' application of ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria, based on their educational qualification. In other words, lecturers' educational qualification does not significantly influence their application of ICT resource tools in the teaching of Computer Science in Federal Universities in South-South Nigeria.

The findings on the present study that educational qualification does not significantly influence lecturers' application of ICT resource tools in the teaching of Computer Science in Federal Universities in South-South Nigeria contradict that of Mahdi, Laafun and Janati-Idris (2015), who found that educational qualification significantly affect Physics teachers' ability to integrate ICT in schools in Morocco. In the study, PhD used ICT most. The findings further contradict the assertion of Chauhan (2016) that qualification affects the professional attitudes of female teachers. Those with higher educational qualification are more likely to use ICT because they may have more skills and chances to go online than those with lower educational qualifications.

Influence of Lecturers Gender on Their Application of Various ICT Resource Tools in Teaching Computer Science Courses in Federal Universities in South-South, Nigeria

The analysis of the responses to research question 2 presented in Table 2 revealed that the mean responses of male and female Computer Science lecturers on their Application of ICT resource tools in teaching based was different. Specifically, the finding indicated that female Computer Science lecturers apply ICT resources in teaching more than their male counterparts. Testing of the corresponding null hypothesis 2 revealed that the null hypothesis was upheld. This implies that there is significant difference in Computer Science lecturers' application of ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria, based on their gender. In other words, lecturer's gender did not significantly influence their application of ICT resource tools in the teaching of Computer Science in Federal Universities in South-South Nigeria.

The finding of the study that there was no significant gender influence in Computer Science lecturers' application of ICT resources in teaching Computer Science in favour of female Computer Science lecturers contradicts that of Alampay (2006) cited in Aramide, Ladipo and Adebayo (2015 who found that male teachers apply ICT resources in teaching more than their female counterparts. The author explained that men were more receptive to ICT use than women which may also mean that male teachers would be more receptive to ICT use than female teachers due to the fact that women are more preoccupied with other issues that they do not have enough time to use the ICT facility in teaching.

Influence of Lecturers Age on Their Application of Various ICT Resource Tools in Teaching Computer Science Courses in Federal Universities in South-South, Nigeria

The analysis of the responses to research question 3 presented in Table 3 revealed that there was a wide difference in the mean responses of Computer Science lecturers on their Application of ICT resource tools in teaching when classified based on their age. The finding indicated that Computer Science lecturers aged between 31 and 40 years are the highest users of ICT resource tools followed by those aged 41 years and above while those aged between 21 and 30 years are the least users of ICT resources in the teaching of Computer Science in federal universities in South-South Nigeria. Testing of the corresponding null hypothesis 3 revealed that the null hypothesis was rejected. This implies that there was significant influence in Computer Science lecturers' application of ICT resources in teaching Computer Science in Federal Universities in South-South Nigeria, based on their age. In other words, lecturers' age significantly influence their application of ICT resource tools in the teaching of Computer Science in Federal Universities in South-South Nigeria.

The finding of the present study that lecturers age significantly influence their application of ICT resource tools in the teaching of Computer Science in Federal Universities in South-South Nigeria supports that of Mayanja (2002) cited in Aramide, Ladipo and Adebayo (2015) who reported that there was significant influence in teachers use of ICT resources in teaching in favour of young teachers who make use of ICT resources more than the older teachers.

CONCLUSION

Judging from the findings obtained, it was concluded that lecturers' age, and marital status have significant influence on their application of ICT resources in teaching Computer Science while educational qualification, gender and years of experience have no significant influence on their application of ICT resources in teaching Computer Science in universities in South-South, Nigeria. It is therefore imperative that lecturers of Computer Science courses in universities in South-South, Nigeria should endeavor to apply ICT resources in their teaching.

RECOMMENDATIONS

The following recommendations were made based on the findings of this study

1. The management of the federal universities in South-south Nigeria in collaboration with the National Universities Commission (NUC) should ensure that only lecturers with first/HND degree are employed to teach Computer Science courses in universities in South-South, Nigeria
2. Federal government of Nigeria should ensure that lecturers are given adequate training on the utilization of ICT resources in teaching irrespective of their gender since utilization is not gender biased.
3. The management of the federal universities in South-south Nigeria in collaboration with the National Universities Commission (NUC) should ensure that only people aged between 31 and 40 years are employed to teach Computer Science courses in universities in South-South, Nigeria since they have been found to be the highest users of ICT resources in teaching Computer Science courses.

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