GENDER AND ACADEMIC QUALIFICATION DIFFERENTIALS OF NIGERIAN UNIVERSITY TEACHERS IN COMPUTER SKILLS ACQUISITION AND PROGRAMMES MASTERY: IMPLICATIONS ON EFFECTIVE TEACHING

By

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ABSTRACT

Nigerian university teachers' level of computer skills acquisition and programme mastery was analysed in this study. 367 university teachers with mean age of 41.21 and Standard deviation of 9.56 drawn from 2 universities in Ogun-state, Nigeria were used as the sample for the study. The Computer Skills Acquisition and Programme Mastery Questionnaire was used for data collection. The data collected was analysed at 0.05 level of significance using the t-test and Analysis of Variance statistical tools. The results indicated that gender had a great influence on the level of computer skills acquisition and programme mastery of university teachers. Meanwhile, as the computer skills acquisition level of the university teachers was certain to specific academic qualification, their level of computer programme mastery was not dictated by their level of academic qualifications. It was among other things recommended that in all universities, students of Faculty of Education course should be made to undergo computer appreciation course. The university teachers are taken through computer training in order to improve their level of computer literacy, while the university's management should endeavour to make personal computer available to every university teacher in order to facilitate effective teaching and learning.

INTRODUCTION

The present day education system is experiencing expansion and explosion of knowledge in view of the pervasive influence of computer technologies in educational sector. In an attempt to substantiate and advance classroom instruction at the University level, the use of computer technologies has been held with high esteem. University teachers are on the track of leading the next generation into the next century because teachers at any level of education system across the globe hold the key to the national development socially, economically, and politically through effective education that is enhanced by appropriate utilization of instructional-technology. Aduwa- Ogiegbaen and Isah (2005) intended that the use of computer- technologies in teaching and learning is becoming a universal phenomenon.

Meanwhile, in attempt to meet up with the challenges of technology in education, the the National University Commission (NUC) which is the body saddled with the responsibility of regulating the Nigeria's University system make lots of efforts to encourage computer literacy among the university teachers. In line with the vision, many Nigerian universities such as Obafemi Awolowo University, Ile-Ife, Osun state, University of Ibadan, Oyo state, Lagos State University just to mention a few, commit huge amount of money to install computers and internet facilities into the university teachers 'offices. This is to enable them to have access of computer and to support teaching and learning. However, the question is to what extent are these computers being put to use to facilitate effective teaching and learning by the University teachers. Leisle, Gary, and Daniel (2002) argue that university education must go beyond students, just having a passage through the university. Rather, university students should benefit qualitative education that would allow them to become professionally competent, self-reliant and self- sufficient in the labour market. It is also pertinent to note that if university teachers could

understand and adjust to teach students with the pedagogical methods that would involve the use of computer, this will definitely place the students at an advantage pedestal of academic excellence (Tenbusch, 1998; Young, 2001).

In Nigeria, the serious problem facing University teachers in terms of effectiveness in teaching is not the wave of change that computer- technology is extending into the education system; rather it is lack of information, readiness to learn, adapt, adjust, use, and master the various computer programmes that would enhance effective teaching and learning. Eyitayo, Eyitayo, and Akeju (1999) mentioned that such computer programmes include spread sheets, data management packages, graphic packages, word processing, communication packages, presentation software, integrated packages etc.

Acquisition of the necessary computer skills is a motivating factor that encourages the university teachers' confidence in integrating computer into the curriculum process (Edmondson, 2001; Wheatley, 2003). Similarly (Suptin, 1995, as cited in Leisle, Gary & Daniel, 2002) the failure to maximize the potentiality of computer technologies in terms of usage will jeopardize the credibility of qualitative curriculum and effective teaching. Meanwhile, Olalere (2005) stresses that effective utilization of computer in the teaching and learning process is a product of teachers' possession and demonstration of adequate computer knowledge and skills.

Mastery of computer programmes is a product of competence borne out of experience gained over time and through practice. In another words, Bristow (1997) and Olalere (2005)views mastery of computer programmes as the level of competence in the use of various specific computer programmes in order to achieve the desired action or set goals with less efforts in terms of time. Research findings on the use of computer in curriculum process revealed great potentials for improving the delivery quality of curriculum content (Leisle, Gary & Daniel, 2002); increasing acceleration of delivery mode from secondary to postgraduate level of education. (Abdelraheem & Musawo,2003; Tearless, 2003); teaching with ease, and convenience (Aduwa-Ogiegbaen & Isah, 2005); high students academic knowledge and academic achievement (Gray, 2001; Valasidou & Bousiou- Makrido, 2007; Granger, Morbey, Lolherington, Owston & Wideman, 2002).

It is obvious that a university teacher who is not skilled in computer, and is not ready to incorporate computer technology into the instructional process is still two decades behind the present time development. Enwereonye (2004) emphasizes that effective utilization of computer- technologies in curriculum process is dependent on the individual's ability to acquire the skills required in the computer operation and the application of the appropriate packages. This study is therefore set out to examine the level of computer skills acquisition and programme mastery of university teachers as it affects effective teaching and learning.

Hypotheses

To effectively carry out this study, the following hypotheses were raised:

- The levels of computer skills acquisition of male and female university teachers will not be significantly different.
- The levels of computer programme mastery of male and female university teachers will not be significantly different.
- The levels of computer skill acquisition of university teachers with different academic qualifications will not be significantly different.
- The levels of computer programme mastery of university teachers with different academic qualifications will not be significantly different.

Methodology

Design

This study adopts a survey research design.

Sample of the study

The study is conducted among all the university teachers of Olabisi Onabanjo University, Ago-Iwoye, Ogun State, Nigeria, and Tai- Solarin University of Education,

Ijagun,Nigeria. A total of 367 respondents (274 males and 93 females) with Mean Age of 41.21, and Standard Deviation of 9.56 were selected across the faculties of the universities through simple random sampling technique. Meanwhile, all the respondents had Bachelors degree while 255 (69.5%) of the respondents were Masters degree holders (Mean = 35.45, SD = 13.45), 95 (25.9%) had Ph.D degree (Mean = 39.76, SD= 13.55) and 17 (4.6%) were first-degree holders (Mean = 38.17, SD 15.56).

Instrumentation

The instrument used for this study was a self- designed instrument "Computer Skill Acquisition and Programme Mastery Questionnaire (CSAPMQ)". This was administered to gather the data used for this study. The instrument had two parts. Part 1 of the instrument contained the demographic data of the respondents. Part II had two sections; section A of part II contained 18 items relating to computer skill acquisition, while section B had 8 items based on computer usage. All items in parts A and B were rated using Likert four-point scale of Often (1), Sometimes (2), Never (3), I don't know (4). In order to ensure the validity of the instrument, it was given to a computer science lecturer, a psychometrician and one educational technologist. The researcher examined their comments; effected the necessary corrections on the instrument before the final draft was produced. The reliability coefficient of the instrument yielded 0.81.

Procedure

Six research assistants were used in the administration of the instrument. 400 copies of the questionnaire were administered, but 367 copies (91.75%) were validly retrieved and used in data analysis and interpretation. Meanwhile, t-test and Analysis of Variance (ANOVA) statistical tools were used in data analysis.

Results

Hypothesis 1

Group	N	Mean	δ	df	t - cal	t - cri	P	Remarks
Male	274	38.66	12.98	365	4.88	1.98	<. 05	Rejected
Female	93	30.89	14.0					

Table 1.t-test difference of male and female university teachers levels of computer skill acquisition.

	N	Mean	δ	df	t - cal	t - cri	P	Remarks
Male	274	27.97	7.58	365	4.95	1.98	P<. 05	Rejected
Female	93	23.63	6.33					

Table 2. T-test difference of male and female university teachers computer programmes mastery.

The levels of computer skills acquisition of male and female university teachers will not be significantly different.

The results in table 1 indicated that there exists a significant difference in the levels of computer skill acquisition of male and female university teachers because the calculated value of 4.88 is higher than the table value of 1.98. Therefore, hypothesis one was rejected. The implication of this is that lecturers' level of computer skill acquisition is gender driven.

Hypothesis 2

The levels of computer programmes mastery between male and female university teachers will not be significantly different.

From Table 2, the results revealed that the level of programmes mastery between male and female university teachers is significantly different. The calculated value of 4.95 is higher than the table value of 1.98. Thus hypothesis two was rejected. This implies that lecturers' level of programmes mastery was gender specific.

Hypothesis 3

The levels of computer skill acquisition of university teachers with different academic qualifications will not be significantly different.

The results in Table 3 indicated the mean and the standard deviation of computer skill acquisition of university teachers. Among the university teachers, the Bachelor's degree holders had (Mean =38.1765, SD =15.56131), while the Masters degree holders had (Mean =39.35.4510, SD = 13.45408) and the Ph.D holders had (Mean 39.7684, SD= 13.55874). It is evidently clear that

Group	N	Mean	Std. Deviation	Std. Error
Bachelor's Degree	17	38.1765	15.56131	3.77417
Masters' Degree	255	35.4510	13.45408	.84253
Ph.D	95	39.7684	13.55874	1.39110
Total	367	36.6948	13.67677	.71392

Table 3. Descriptive statistics of computer skill acquisition of university teachers by academic qualifications.

	Sum of Squares	df	Mean square	F	Sig.
Contrast	1329.307	2	664.654	3.604	0.28
Error	67132.513	364	184.430		
Total	68461.820	366			

Table 4. Analysis of Variance of computer skill acquisition of university teachers based on academic qualification.

the level of computer skill acquisition of the Ph.D holders was the highest, while the Masters' degree holders had the lowest level.

The results in Table 4 indicated that there was a significant difference between the levels of computer acquisition skill of university teachers based on their academic qualifications. This is in view of the fact that the F-ratio of 3.604 was significantly higher than the critical F-ratio of 3.00 at 0.05 level of confidence. Therefore hypothesis three was rejected.

The results in Table 5 showed that there was a significant difference between the level of computer skill acquisition of university teachers with Masters' Degree (Mean 35.45, SE = 0.84) and the PhD holders (Mean = 39.76, SE= 1.39) only. The inference drawn from the results is that there exists a relationship between the academic qualifications of university academic staff and their levels of computer skill acquisition.

Hypothesis 4

The levels of computer programme mastery of university teachers with different academic qualifications will not be significantly different.

The results in Table 6 revealed the mean and the standard deviation of computer usage level of university teachers. The Bachelor's degree holders had (Mean = 27.35, SD = 6.14), while the Masters' degree holders had (Mean =27.03, SD= 7.35) and the PhD holders had (Mean = 26.33, SD= 8.19). From the table, it is obvious that Bachelor degree holders and Masters degree holders had the higher mean, while the PhD holders had the least.

i) Educational qualification	j) Educational qualification	Mean difference	Std. Error	Sig.
Bachelor's Degree M = 38.17 SE = .84	Masters' Degree	2.72549	3.40178	.726
	Ph.D	1.59195	1.63237	.906
Masters's Degree M = 35.45 SE = .84	Bachelor's Degree	2.72549	3.40178	.726
	Ph.D	4.31744	1.63237	.031
PhD M = 39.76 SE = 1.39	Bachelor's Degree	1.59195	3.57634	.906
	Masters Degree	4.31744	1.63237	.031

Table 5. Pairwise comparison of mean of difference for university teachers based on academic qualifications

Group	N	Mean	Std. Deviation	Std. Error
Bachelors Degree	17	27.3529	6.14350	1.49002
Masters' Degree	255	27.0392	7.35854	.46081
Ph.D	95	26.3368	8.19004	.84028
Total	367	26.8719	7.52064	.39257

Table 6. Descriptive statistics of level of computer programme mastery of university teachers by academic qualifications

From Table 7, the results showed that there was no significant difference in the levels of computer programme mastery of university teachers based on their highest academic qualification since the F-ratio of 0.337 was found significantly lower than the critical value of 3.00 at 0.05 level of confidence. Therefore, hypothesis 4 was accepted.

Discussion

One of the findings of this study is that male university teachers have a higher degree of computer skill acquisition when compared with their female counterparts. This outcome could be borne out of the point that probably female university teachers are less enthusiastic about being computer literate, thus devote little or no time to learn its operational process. Lending support to this findings Forgasz (2002) observed that most female teachers are not keenly interested in learning about computer. Davies, Klawe, Ng, Nyhus and Sullivan (2001) and Volman (1997) have attributed the higher degree of computer skill acquisition of female teachers to high rate of experience acquired based on ample time dedicated to interaction with computer. Apart from the support given to this finding by Bristow (1997), Holcomb, Brown, Kulikowich, and Zheng (2003) Oludipe (2004) and Rajagopal (2003); (Hess and Miura as cited in Shashaani,

	Sum of Squares	df	Mean square	F	Sig.
Contrast	38.270	2	19.135	.337	.714
Error	20662.71	364	56.766		
Total	20700.981	366			

Table 7. Analysis of Variance of computer programme mastery of university teachers by academic qualifications.

1994) were of view that female university teachers are negatively affected by gender socialization because computer skills acquisition is often linked with masculinity.

This study further revealed that male university teachers are positively disposed towards the mastery of computer programmes. Redish, 1993, as cited in Oludipe, 2004 remarked that the frequent use of computer and the various packages enhances the mastery of computer programmes. This by implication shows that in order to achieve effectiveness in curriculum process, male university teachers use computer packages than their female colleagues. Earlier researchers in the same vein show that female teachers are reticent, and reluctant in getting involved in the use of computer programmes for instructional packages, thus their mastery of computer programmes is hampered ((Eval, 2006; Forgasz, 2002; and Picciano, 1994, cited in Atkins &Vasu,2000). University teachers have also been found to nurse the belief that male teachers have power to accomplish machine, while females perceives that they have power to accomplish with machines (Imhof, Vollmeyer, & Beierlein, 2007; Kiboss 2007; Shashaani, 1994). Meanwhile, Aduwa-Ogiegbaen and Isah (2005) contradict the finding of this study because they found no difference in the university teachers' usage of Information and Communication Technology for instructional purposes.

It is empirically evident from this study that the degree of computer skills acquisition of university teachers is relatively and significantly dependent on their highest academic qualifications. The results in Tables 3 and 5 attest that university teachers with Doctor of Philosophy (Ph.D) had the highest mean of computer acquisition skills. However, one would have expected the Master holders to take after the Ph.D holders in computer skill acquisition, but surprisingly the results of this study indicated that the Bachelors' degree holders (Graduate assistant) had a higher level of computer skills than their Master degree holders. This outcome is in consonance with the findings of Atkins and Vasu (2000) and Davies, Klawe, Ng, Nyhus and Sullivan (2001) who affirmed that university teachers with higher level of education training have higher level of computer skills than those with lower educational background.

The results in Tables 6 and 7 is quite revealing, that no significant difference in the computer programme mastery of the university teachers based on their highest academic qualifications was found, despite the fact that university teachers with Ph.D had the highest degree of computer skill acquisition, followed by the Bachelors' degree holders, while the masters' degree holders had the least degree of computer skills acquisition. This finding revealed that the level of computer programme mastery based on the use of computer for instruction in all the categories of teachers were relatively the same. This outcome is at variance with the finding of Equity Resource Center (2000) which observed that only few Ph.D holders have flair for computer usage to facilitate their mastery of computer programmes.

While this research focused on the levels of computer skill acquisition and programme mastery of university teachers' vis-à-vis their gender and academic qualification, some implications from the findings of this study on effective teaching and learning warrant particular attention:

- The research provides strong indication that the level of computer skills and programme mastery of university teachers has a great influence on their attitude and their performance in the classroom and consequently on the students' achievement in school.
- Particular pedagogical computer skills, the use of computer for instruction and programme mastery provides the opportunity to facilitate student centered learning, good control of the classroom, and efficient management of student learning activities.
- Effective teaching and learning at the university level becomes seemingly impossible nowadays without the use of computer- technologies, more often that not, university teachers who do not possess the necessary computer literacy find it hard to introduce the technology into the existing curriculum content. It would be amazing to see the magic of such a high

performance from a teacher who could achieve the stated aims and objectives of curriculum content.

Conclusion and Recommendations

It is suffice to assert that for developing countries like Nigeria it is pertinent for the University teachers to embrace and integrate computer technology into the curriculum process to achieve an effective and acceptable level of curriculum- content- discharge at the university level, It is worth noting that computer technology is becoming an essential part and a sine qua non in the education business. In view of this fact, concerted efforts should be made by the various university management bodies to expose university teachers to quality computer training.

Each university teacher should be equipped with a computer and possibly with some instructional application packages that could enhance their methodology of teaching. With this provision, such teachers would have free and timeless access of the computer for frequent practice that would accelerate their knowledge, skills and programme mastery.

Faculty of education in all universities must initiate computer appreciation course for all the prospective teachers as well as students before the completion of their programme of study. If this is done, they would have been equipped with the basic skills needed to move on when they eventually find themselves within the walls of the classroom as university teachers.

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