



EFFECTS OF TECHNOLOGY ON SECRETARIAL EDUCATION STUDENTS' PERFORMANCE IN SOFTWARE APPLICATION

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Abstract

The study focused on determining whether or not the use of technology in the teaching of a Software application course impacted on secretarial education students' performance. The comparative research design was adopted for the study as the results of the students in the course for four different years (2012 – 2015) were analyzed. One research question was raised and 3 hypotheses were formulated to guide the study. The population, which also formed the sample size, was made up of 163 secretarial education students in the Rivers State University of Science and Technology who registered for the Course within the four year period. Mean and standard deviation were used to answer the research question while z-test and Pearson product moment correlation were used to test the hypotheses. The results indicated that the secretarial education students who were taught the software application course without the use of technology (2012 – 2013) performed better than those who were taught with the use of technology (2014 – 2015). Also the results showed that the performance of secretarial education students who were taught the software application course without the use of technology significantly differed from those who were taught with the use of technology. It was recommended that business education lecturers should begin to adopt the usage of technology in delivering their lectures as this will help reduce students' phobia about technology-integration in the learning process. Projectors should be fixed in all the lecture halls as this will encourage lecturers to design their course content in such a way that content delivery can be done with the use of PowerPoint presentations.

Keywords: *Technology, teaching, software application course, secretarial education, students' performance, PowerPoint presentations*

Introduction

Teaching and learning have been made easy with the introduction of technologies. Students now have more friendly ways to source for knowledge and even interact with knowledge-givers. Teachers, lecturers and other educational facilitators now have their work made a lot easier as educational resources can be easily gotten and delivered to students. The communication process between the learner and teacher is now shortened as students can reach their teachers via non-personal means such as e-mails, chats, blogs etc. More so, business educators can also deliver their lectures with ease by using slides and projectors instead of chalk and board as was the case in times gone by.

Different electronic devices now play important roles in aiding both students and lecturers in the learning and teaching process. Okereke in Bupo and Ndinechi (2015)



posited that electronic mail, real time text conferencing, and online tutorials have been used in the teaching and learning process for several years. Other devices include computers (desktops, laptops, notebooks etc), projectors, Digital Versatile Discs (DVD), Compact discs (CDs), Closed Circuit Television (cctv), mobile phones with applications that run on the internet etc. (Nwazor, 2014; Ukor, Agwazie and Ayemhenre, 2014).

Secretarial Education is an option in the business education programme that has as its main aim the raising of proficient secretaries and secretarial educators that will be self-reliant. At the end of the programme, graduates should become secretarial educators, proficient “typist, computer operators, shorthand-typist or stenographers, confidential secretaries and personal secretaries”, (Agboola, Ademiluyi and Ademiluyi, 2014). With the advancement of technology and its role in the present day business world, secretaries are expected to be up to date with the trends. This necessitated the inclusion of the course, Software Application, in the curriculum of the Business Education (Secretarial Option) programme.

Software Application is a skill-acquisition course that exposes the students to practical application of computer software packages. At the end of the course, secretarial education students are expected to have acquired skills in word processing, spreadsheets, PowerPoint presentations, database management and elementary accounting packages. The course is usually taught to final year secretarial education students in the Rivers State University of science and Technology, Port Harcourt. The course was taught theoretically for two years (2012 to 2013). The concepts and other theoretical foundations of software applications were taught the students without any practical hands-on activity. The students learnt in the normal classroom setting as the lecturer used the traditional approach in the delivery of the lectures. Then, from 2014 to 2015, the students were taught the course, by another lecturer, with the use of computers and projectors in the Information Technology Centre of the University. The students were required to do hands-on assignments and even submit some assignments to the lecturer’s email. The content of the lectures were projected while the students were paired two to one computer because the computers in the IT Center were not enough to go round all the students.

The researcher noticed that some of the students who were taught with computers and projectors were of the idea that they would have been happier if they were taught using the traditional approach like their predecessors. To them, it appeared as if the use of the technology was difficult and as such their performance in the course was poorer than those who learnt without the use of technology. The question is, has the introduction of technology impacted positively on students’ performance? Do secretarial education students prefer to learn using technological devices than manual devices? Does students’ supposed phobia for technology-integration hinder them from making the best use of such technology for learning? Do students perform better when taught with technology than when taught with manual devices? These concerns made the researcher to



investigate whether the use of the technology in the teaching of the software application course impacted positively or not on the academic performance of secretarial education students.

Purpose of the Study

The aim of the study was to determine the effect of technology on secretarial education students' performance in software application. Specifically, the study sought to:

1. Determine whether secretarial education students performed better in the software application course when taught with technology than when taught without technology.
2. Determine whether there is a significant difference in the performance of secretarial education students in the software application course taught without technology from 2012 to 2013 and those taught with technology from 2014 to 2015.
3. Determine whether there is a significant relationship in the performance of secretarial education students taught the software application course without technology from 2012 to 2013.
4. Determine where there is a significant relationship in the performance of secretarial education students taught the software application course with technology from 2014 to 2015.

Research Question

One research question was raised to guide the study.

Are the performances of the Secretarial education students who were taught the software application course with technology from 2014 to 2015 better than those who were taught without technology from 2012 to 2013?

Hypotheses

The following hypotheses were formulated to guide the study.

- H₀₁ There is no significant difference in the performance of secretarial education students in the software application course taught without technology from 2012 to 2013 and those taught with technology from 2014 to 2015.
- H₀₂ There is no significant relationship in the performance of secretarial education students taught the software application course without technology from 2012 to 2013.
- H₀₃ There is no significant relationship in the performance of secretarial education students taught the software application course with technology from 2014 to 2015.



Method

The comparative research design was adopted for the study. The population was made of 163 secretarial education students in the Department of Business education, Rivers State University of Science and Technology, Port Harcourt, who registered for the Software Application course within the four year period under review. There was no sample as the researcher used the entire population for the study. The data for the study was gotten from the results record folder of the Department of Business Education, RSUST. The results of the secretarial education students in the software application course for the four years was obtained and analyzed for the study (see table 2). To answer the research question, the mean and standard deviation of the grades of the students were used. Grades A, B, C, D, E, and F were given marks that represented the midpoints of the class interval that each grade covered.

Table 1: Midpoints of grades

Grade	Class interval	Marks (midpoint)
A	70 – 100	85
B	60 – 69	65
C	50 – 59	55
D	45 – 49	47
E	40 – 44	42
F	0 – 39	20

Z-test was used to test the first null hypothesis while Pearson Product Moment Correlation coefficient was used to test the second and third null hypotheses.

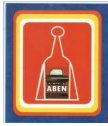
Table 2: Students' results in the Software Application course for 2012 to 2015

Year	Total No. of students	Grades					
		A	B	C	D	E	F
2012	34	8	17	7	0	1	1
2013	30	1	16	6	3	4	0
2014	61	12	6	10	6	6	21
2015	38	8	9	11	2	8	0
TOTAL	163	29	48	34	11	19	22

Results

Research Question

Are the performances of the Secretarial education students who were taught the software application course with technology from 2014 to 2015 better than those who were taught without technology from 2012 to 2013?



To answer the research question, the mean and standard deviation of the students' grades for the respective years were gotten. The data is presented in table 3 below:

Table 3: Mean score of the Secretarial education students in Software Application Course for 2012 to 2015

Year	$\sum fx$	$\sum f$	\bar{X}	SD
2012	2,232	34	65.65	13.76
2013	1,764	30	58.80	9.89
2014	2,914	61	47.77	24.07
2015	2,300	38	60.53	14.89

The data in Table 3 shows that the mean scores of the Secretarial Education students in the Software Application course for 2012 to 2013 were 65.65 and 58.80. This brings the grand mean for the two years to 62.23. Also the data shows that the mean scores of the students in the course for 2014 to 2015 were 47.77 and 60.53 respectively. This brings the grand mean for the two years to 54.15. The mean of the score for 2012 to 2013 is higher than the mean for 2014 to 2015. Therefore, the Secretarial Education students who were taught the software application course without the use of technology performed better than the students who were taught with the use of technology.

Hypotheses

H₀₁ There is no significant difference in the performance of secretarial education students in the software application course taught without technology from 2012 to 2013 and those taught with technology from 2014 to 2015.

This null hypothesis was tested at 0.05 level of significance using z-test. The results are presented in Table 4 below:

Table 4: The z-test result of the difference in the performance of secretarial education students in the software application course taught without technology from 2012 to 2013 and those taught with technology from 2014 to 2015.

Year	N	X	S	Z-Cal	A	df	z-crit	Remark
2012-2013	64	62.44	12.56	6.30	0.05	161	1.97	Rejected
2014-2015	99	52.67	21.92					

The z-calculated value of 6.30 is greater than the critical z value of 1.97 at 161 degree of freedom and 0.05 level of significance. The results indicate that the performances of students who were taught the software application course from 2012 to 2013 without technology (with mean 62.44) differed significantly from the performances of those taught with technology from 2014 to 2015 (mean of 52.67). The null hypothesis is therefore rejected and as such there is a significant difference in the performance of secretarial education students in the software application course taught without technology from 2012 to 2013 and those taught with technology from 2014 to 2015.



H₀₂ There is no significant relationship in the performance of secretarial education students taught the software application course without technology from 2012 to 2013

Table 5: The PPMC result of the relationship in the performance of Secretarial Education students taught the software application course without technology from 2012 to 2013.

Year	$\sum X$ $\sum Y$	$(\sum X)^2$ $(\sum Y)^2$	$\sum X^2$ $\sum Y^2$	$\sum XY$	R-Cal	Remark
2012	2,232	4,981,824	1,833,814	1,341,106	0.82	Strong positive Relationship
2013	1,764	3,111,696	1,245,830			

The data in Table 5 shows that the r- calculated of 0.82 is higher than zero (0) showing that there is a positive relationship. The positive relationship is strong because of the score's closeness to one (1), (Ukwuije and Orluwene, 2012). This means that there is a strong positive relationship between the performances of the Secretarial Education students who were taught Software Application course without technology in 2012 and 2013. The null hypothesis is therefore rejected.

H₀₃ There is no significant relationship in the performance of secretarial education students taught the software application course with technology from 2014 to 2015.

Table 6: The PPMC result of the relationship in the performance of Secretarial Education students taught the software application course with technology from 2014 to 2015.

Year	$\sum X$ $\sum Y$	$(\sum X)^2$ $(\sum Y)^2$	$\sum X^2$ $\sum Y^2$	$\sum XY$	R- Cal	Remark
2014	2,914	8,491,396	1,814,428	1,365,680	0.61	Moderate positive Relationship
2015	2,300	5,290,000	1,292,382			

The data in Table 6 shows that the r-calculated of 0.61 is higher than zero (0) showing that there is a positive relationship. The positive relationship is moderate because of it is around the middle of zero and one (Ukwuije and Orluwene, 2012). This means that there is a moderate positive relationship between the performances of the secretarial education students who were taught Software Application course with technology in 2014 and 2015.



Discussion

The results in the research question, which was analyzed and presented in Table 3, indicate that the Secretarial Education students who were taught the Software Application course without the use of technology performed better than those who were taught with the use of technology. This may have been because the students felt freer and more relaxed when they learnt without technology. The students may have had a resistance-to-change attitude which may have led to their lower performance when technology was first introduced in 2014. However, Bingimlas (2009) pointed out that “resistance to change seems not to be a barrier itself (*to technology integration*); instead, it is an indication that something is wrong. In other words, there are reasons why resistance to change occurs...the change from a present level to a desired level of performance is facilitated by driving (encouraging) forces such as the power of new development, rapid availability, creativity, internet access, or ease of communication...” pg 238. Bingimlas was of the opinion that other factors may also have contributed to the students’ poorer performance. The results of the study contradict the findings of Adekunle, Adepoju and Abdullahi (2015) who found out those students agreed that computer utilization enhances the teaching and learning process towards achieving higher academic performance.

The results in the null hypothesis 1, analyzed and presented in Table 4, show that there is a significant difference in the performances of Secretarial Education students in the software application course taught without technology from 2012 to 2013 and those taught with technology from 2014 to 2015. This could have been because the students had phobia for the use of the computers and projectors. Many of students, who were asked to submit an assignment via e-mail, complained of their inability to use the internet while some of the students asked somebody else to do it for them. Okiki (2011) pointed out that there was computer technology illiteracy among students. The results of this study show vividly that many students are still technologically unreceptive. This also shows that utilization of e-learning devices in Nigerian tertiary institutions is still in its infancy stage as argued by Eke (2011).

The results in the null hypothesis 2, analyzed and presented in Table 5, show that there is a strong positive relationship in the performances of Secretary Education students taught the software application course without technology between 2012 and 2013. This could be attributed to the fact that the same lecturer taught the course for those two years and the same methodology was used. The method of delivery was the same and as a result, the students’ performance in the course for the two years was strongly related. This is in contrast with the findings of Kosgei, Mise, Odera and Ayugi (2013), who discovered that there was no significant relationship between teacher qualification experience and student academic achievement.



The results in the null hypothesis 3, analyzed and presented in Table 6, show that there is a moderate positive relationship in the performances of secretary education students taught the software application course with technology between 2014 and 2015. The mean of students' performance in 2014 was 47.77 while in 2015 it was 60.53. This shows that though there was a poor performance in the first year that technology was used in teaching the software application course, the results were better in the second year. The students began to adapt to the usage of technology in delivery of the course lectures. More so, the students were fewer in 2015 than in 2014. The computers were moderately adequate for the class and as such there was no need for sharing. This might have led to the increase in the performance of the students. Jimoh-kadiri and Bupo (2011) had pointed out that inaccessibility to e-learning devices will affect its utilization by business educators. Once business education students and lecturers have unrestricted access to e-learning facilities like the internet, computers, projectors etc., their ability to use it will increase and this will result in better performance.

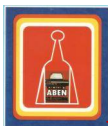
Conclusion

Based on the findings of the study, it is concluded that the secretarial education students who were taught the Software Application course without the use of technology from 2012 to 2013 performed better than those who were taught the course with the use of technology from 2014 to 2015. There is a significant difference in the performance of secretarial education students in the software application course taught without technology from 2012 to 2013 and those taught with technology from 2014 to 2015.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Business Education lectures should adopt the usage of technology in delivering their lectures as this will help reduce students' phobia about technology-integration in the learning process.
2. Management of tertiary institutions should install projectors in lecture halls so as to encourage business education lecturers to design their course content in such a way that content delivery can be done with the use of PowerPoint presentations.
3. Business Education students should be given access to technology devices owned by the Institution from their year one to encourage student participation in technologically-oriented courses.
4. Business Education lecturers should have functional e-mail addresses that the students have access to. This will encourage the e-communication between the students and the lecturers thereby reducing techno-phobia among students.



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