Information and Communication Technology: A Global Tool to Facilitate Teaching and Learning of Business Education in Colleges in Nigeria.

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Abstract: *Information and Communication Technology (ICTs) occupies a complex position in relations to teaching and learning of Business Education in Colleges. The emergence of ICTs has serious implications on the nature and purpose of educational institutions. The researcher is basically concerned with academic performances of students if ICTs is used as a tool for teaching. Data for analysis were obtained from a test given to the students in both experimental and the control groups. The data was analyzed using Pearson moment correlation coefficient and t-value was also used for the test of significance. The researcher found that significant value was obtained between the experimental and the control groups. The researchers concluded that business education needs to be well equipped to anticipate and respond to opportunities created by ICTs in order to enhance academic performance of students. The researchers recommended, among others, that the investments in ICTs should be used to promote the development of basic skills, problem-solving, communication skills and the professional development of teachers.*
Keywords: *Information, Communication, Technology, Business, Education, Data analyses.*

I. Introduction

Technological changes have created a new global economy "powered by technology, fuelled by information and driven by knowledge (Tinio, 2002). Gable (2009) affirms that ICT occupies a complex position in relation to globalization. The emergence of ICTs has serious implications on the academic performance of students as well enhancing teaching processes. Thornburg (2000) notes that as the half-life of information continues to shrink and access to information continues to grow exponentially, schools cannot remain mere venues for the transmission of a prescribed set of information from teacher to student over a fixed period of time. Rather, schools must promote "learning to learn" – the acquisition of knowledge and skills that make possible continuous learning over the lifetime. Thus, the illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn (Tinio, 2002). Information and communication technologies (ICTs) are potentially powerful enabling tools for educational change and reform processes through improving both access to education and the quality of that education. ICTs help expand access to education, strengthen the relevance of education to the increasingly digital workplace and raise educational quality by helping make teaching and learning into an engaging, active process connected to real life when used appropriately. The explosion of the Internet in the 1990s, the emergence of a variety of low-cost computing devices and increased diffusion of computers throughout society ushered in a wave of "ICT and education" policies and projects in developing economies around the world designed to prepare students to effectively engage in the information age. This requires focusing on the technology itself and placing emphasis on the practical implications of the use of ICTs to meet broad educational objectives. Educational programs, therefore, should take a holistic approach to ICT and link the educational goal of expanded ICT use to necessary associated reforms of the curriculum, student assessment system, instructive approaches in the classroom and teacher training. ICT has become one of the basic building blocks of modern society. ICTs in education deal with the use of ICTs within educational technology. Many countries, according to UNESCO (2002), now regard understanding ICT and mastering the basic skills and concepts. This is critical to business education in Nigeria. Business education is the field of training in business practices and in specific skills such as accounting, information processing, keyboarding/typewriting and shorthand. This paper uses business education and education interchangeably. The objective of this paper is to assess the implications of integrating ICTs in business education in Nigeria. It determines also the appropriate and effective use of ICTs in the educational system in Nigeria. The paper is basically a theoretical discourse. Data for this paper were obtained mainly from secondary sources which included books, journals, seminar papers and the Internet.

II. Research Design And Procedure

Introduction: The object of this study is to investigate the effect of Information and communication technology in the teaching and learning of Business Education in colleges. In view of this an attempt was made to review the literature relevant to the study. The researchers also focus on the methodology, the sample and the statistics employed to analyse and to process the data.

Research Design

This research is design to test if there is significance differences in the mean score of the group that was exposed to ICTs (experimental group) and the group that was not exposed to ICTs (control group) called top. A correlation study was also undertaken to test the relationship between students' performance in tops and their continuous assessment.

The Population of the Research

The population of this research comprises selected students of Federal College of Education Kontagora. Students were selected from Business Education Department to form a single class of about Thirty (30) students which were called the experimental group and were taught using ICTs. Another thirty (30) were also chosen and formed the control groups that were taught without using ICTs. The result obtained from the Test to these groups was marked and were used to make the generalization of the researchers finding.

The Samples of the Study: Efficiency of design on the researchers imposes an effort to determine a sufficient sample. A general rule is to select sample that is as small as it needs to be to give an adequate description of the researchers finding. This task may appear seemingly simple, actually it is very difficult and the researchers expend much effort in approximating a good sample. The sampling method used in this research was randomly selected from a pile of folded pieces of paper in a hat containing the names of all students of the Department which was selected for sample in Colleges of Education in Nigeria. The same method of the simple random sampling was used to select the student from all Business Education classes of the college. The participated students were randomly selected from a pile of folded pieces of paper in a hat continuing YES or NO. A total number of about sixty (60) students were selected. 30 of which were the experimental group and the other 30 the control group respectively.

Research Instrument

Preston has developed questions in his book titled **Science Skills Assessment Test** which is meant to test computer based activities. For the purpose of this research findings, the researchers have extracted about 1-16 questions from this book which were quite relevant to the students in colleges of Education in Nigeria. These 16 questions were arranged serially from 1-16 to form the test of computer based-activities. To determine the validity of the questionnaire, it was given to three lecturers in the Department of Computer science and Department of Business Education respectively in Federal College of Education Kontagora Niger state, Nigeria. They unanimously agreed that the questions were relevant to the subject it was meant for.

Statistical Analysis

The questions were conceived to answer some hypothesis stated below.
A. There is no significant relationship in students understanding of ICTs and academic achievements.
B. Students exposed to ICTs based activities do not differ significantly in performance on ICTs based-activities test from those that are not exposed to ICTs.

III. Data Presentation

Introduction: The research design, the methodology and the data gathering instruction were briefly outlined. The tests administered were divided into five sections, all in an attempt to bring out an objectives evaluation on the computer based-activities.

Respondent's Bio-data.

Personality: Evaluations of ICTs based skills. Opinions of the effect survey on the ICTs based-activities in the teaching of Business Education in the colleges of educations in Nigeria. General observations about ICTs based skills. The results are presented in forms of tables and charts in this research. The final results are then discussed in relation to the research outline in the introduction.

IV. Discussions

Biographical data of the respondents: This first item this section investigated the sex of the respondents. The data generated is used to draw the table below.

SEX	FREQUENCY	PERCENTAGE
MALE	0	0
FEMALE	30	100
TOTAL	30	100

Table 4.1 the Control Group by Sex (N = 30)

SEX	FREQUENCY	PERCENTAGE
MALE	0	0
FEMALE	30	100
TOTAL	30	100

It is clear from table 4.0 and table 4.1 above that the respondents are mainly females.
Item II in the test investigated the age of the respondents, the data generated was used to draw the table below.

Table 4.2 the age distribution of the subjects (Experimental group).

AGE RANGE (YEARS)	FREQUENCY	PERCENTAGE
15 - 18	6	20
18 - 21	20	66.70
21 – 25	4	13.30
TOTAL	30	100

The table 4.2 and 4.3 show that majority of the students are adolescent more than 60% of the respondents are adolescent a typical of a school age. At this age students are expected to have attained formal reasoning ability and are quite curious, hence it is hoped that the will gain meaningfully from compute based activities. Table 4.6 tops test result of experimental and control groups.

Group	No. Of classes	Mean value	Mode	Standard deviation	Standard error	Variance
Experimental group	30	54.7330	58.0000	11.2520	2.0540	126.616
Control group	30	40.0000	48.0000	10.2330	1.8680	104.717

Group	No. Of classes	Mean Value	Standard Deviation	Standard Error	Degree Of performance	P-Value	T Value
Experimental	30	54.73330	11.2520	2.0540	58.0000	0.0000	5.0200
Control	30	40.0000	10.2330	1.8680			

The table in 4.6 above was extracted from the SPSS/ PC+, table 4.4a and 4.4b respectively. It is a descriptive data analysis between the experimental and the control group. From the table the mean value for the experimental group is 54.7330 while that of the control group is 40.0000. It appears, the experimental group performed better than the control group. Also from the table: the mode, standard deviation, standard error and the variance show that the samples in the experimental group and control group are homogenous. It is expected, as the subjects were chosen through random sampling. Oyedemi J.F. (2012) reported significant difference in the reading comprehension scores of students who completed science process skills instruction in a computer test when compare to students who did not receive this kinds of scientific skills and with the difference favoring the scientific skills' group. In view of this the researchers says that exposure of students to ICTs skills lead to acquisition of greater academic achievements. Table 4.7 mean performances and T-test value for experimental and control group: The result in table 4.7 contains information extracted from table 4.5 spss/pc+ (independent T-test). The critical t- value of 5.0200 is significant at $p = 0.0000$. Therefore, the null hypothesis is rejected. There is significant difference in the performance of the subject in experimental group and the control groups in the tops. This is in line with the observation by Sharmansky, kyle and Albart (2004) that new curricula which emphasis scientific skills such as inquiry and discovery approaches have positive influence on students academic achievements. The increase in performance of students in tops after exposure to computer-based activities as expected by Oyedemi J. F (2012) In a Simulation and Modeling practical experience which pointed out that increase in students' performance must be acquired by experience in computer-based activities such as CAL and CAI skills.

Table 6.8 summary of the relationship between achievement scores and tops score.

Test of relationship	Degree of freedom	Quality of co-efficient	T-value	Test of significance
C.A. Score versus Tops scores	58	Low	0.3371	Significant

The table 4.8 shows a low relationship between students' scores in tops and their C.A. scores. This implies positive correlations between student performance in science process skills and achievement. This support the observation made in Wisconsin bulletin No.161: That student cannot use science concepts meaningfully until they understood the processes that are involved in generating such concepts. Renner etal (1971) also reported significant differences in the reading comprehension score of students who completed process skills instructions when compared to students who did not receive this kind of instruction with differences favoring the process skills group.

V. Conclusion

This research was meant to determine if exposure of students to ICT process based-activities leads to acquisition of science process skills. The t-test result shows a significant difference in the performance of the experimental group and the control group. The experimental group performed significantly better than control group. This implies that exposure to ICT process activities leads to acquisition to science skills. Secondly, a low relationship was discovered between students score bin Top and their C.A scores. This implies a positive correlation between student performance in science process skills and academic achievement. The finding of this research therefore suggests that ICT process-based activities are effective in enhancing student's acquisition of ICT process and achievement in Business Education.

VI. Summary

Summary: This research work was meant to determine if exposure of students to science process based-activities leads to acquisition of science process skills. In the course of the sturdy, objects were sampled and exposed to science process based- activities and data were collected to test the following hypothesis.

There is no significant relationship in students understanding of science process skills and academic achievement. The t-statistics was used to test the significant difference in their mean score. The critical t-value of 5.02 which is significant at p=0.00 was obtained. Therefore the null hypothesis was rejected. This shows a significant difference in the performance of the subject in experimental group and the control group in Tops. This is in line with shymansky, Kyle and alp art (1982) observation that new science curriculum which emphasizes science process skills such as inquiry/discovery approaches positively influence student achievement, attitude towards science.

Student exposed to science process based activities do not differ significantly in performance on process skill test from those that are not exposed to it. The researcher also discovers a low relationship between students score in Tops and their C.A. scores. This implies a positive correlation between student's performance in science process skills and academic achievement. This also support the observation made in Wisconsin bulletin No.161: that students cannot use science concepts meaningfully until they understood the process that are involved in generating such concepts.

Conclusion**:** On the basis of the above findings, the following conclusions were drawn: From the result obtained for the test of significance, it showed that under the condition assumed for the study, there is significant difference in the performance of the subject in experimental group and the control groups.

A low relationship was discovered between students score in Tops and their C.A. scores. This implies a positive correlation between student's performance in science process skills and academic achievement. Renner etal (2005) reported a significant difference in the reading comprehensive score of students who completed computer based skills instructions when compared to students who did not receive this kind of instructions with differences favoring the computer based skills (experimental groups). The findings of this research, suggest that computer based-activities skills are effective in enhancing students acquisition of computer based skills.

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