

EFFECT OF COMPUTER INSTRUCTIONAL TECHNIQUE ON JSS TWO BUSINESS STUDIES ACHIEVEMENTS: BAUCHI METROPOLIS IN PERSPECTIVE

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ABSTRACT

This paper studied the effect of computer instructional technique on jss two business students achievements. The researchers used intact class in their experimental studies in which two group were selected as experimental and the other one as control group respectively. The design is called quasi-experimental design because its lack the full laboratory control and laboratory isolation, the designs are dependent upon the natural setting in which the researcher finds himself, the designs also explore the opportunity of collecting data in situations where nature has performed, or is performing its own experiment. Two junior secondary schools were selected from the population of which one were used as the treatment

Introduction:

With the passage of time frequent changes have been made in the pattern of education from time to time to meet the needs of society. The remarkable progress of science and technology and the economy have not been only causing great changes in every aspect of society but also bringing crucial changes in education (Ahmad, & Mahmood, 2010). Education is considered be the most powerful tool for all round development of the human beings. As such, the

group. The computer instruction was used as a treatment where before the treatment both the two group were pretested and pos-tested immediately after the treatment. Two means were compared both for the two group before and after the treatment. The data collected were analysed using the SPSS statistical tools, T-test was also used in testing the hypotheses at 0.05 level of significant. The result shows no significant difference in students' achievement before the treatment and also reveals significant difference when the treatment was conducted.

Keywords: *Computer, instruction, technique, business, studies, achievements.*

enlightened nations have to assign priority to educational system. Computer instructional technique is a learning technique where students can interrelate with for active learning of impressions particularly at the institution of learning. Specifically, it will be use in teaching students at the primary, secondary and even tertiary level (House, 2011). Business studies is one of the course that offer its beneficiaries with services, knowledge and consideration in demand to be self-reliant so that students can contest favourably in the world of business as a maker or user of goods and services (Babagana, 2012). The integration of technologies in teaching and learning of business might possibly increase the attainment of skills, knowledge and consideration of the students in relation to many ideas of business and the students' common life as the major aim of administration in social sciences (Segal, Borgia, & Schoenfeld, 2011). The aims of social science education are to offer the students with knowledge and administrative helps needed for industrial, profitable and economic expansion of the nation in a means that students can gain these required skills by the use of technology (Trey, & Khan, 2008).

Yakar (2009) was of the view that new technologies have the potential to support education across the curriculum and provide opportunities for effective communication between teachers and students in ways that have not been possible before. Several studies argued that the use of new

technologies in the classroom is essential for providing opportunities for students to learn and operate in an information age.

Seo & Bryant (2009) argued that traditional educational environments do not seem to be suitable for preparing learners to function or be productive in the workplaces of today's society. Claiming that organization should incorporate the use of new technologies to prepare their students for twenty-first century. Due to the advantage of computer in our classrooms and the school system, the possible obstacle to the integration of these technologies in schools would be an important step in improving the quality of teaching and learning.

STATEMENT OF THE PROBLEM

In Bauchi State, the persistent poor performance of secondary school students in Junior Secondary School Certificate Examination (JSSCE) has been a major concern for parents and educators (Auwal 2014). Every year government is spending huge amount of money in funding education. For the year 2020, sixteen thousand four hundred and thirty-nine (16,439) students fails BACE examination while eight thousand five hundred and fifty-three are to repeat their class (Min of Edu Bauchi, 2020). Parents are persistently crying for the failure especially in the recently conducted BACE examination, the solution to which is dodging us every day. some reported that academic failure is not only frustrating the students and the parents, its effects are equally grave on the society in terms of death of manpower in all spheres of the economy and the politics. Teachers, at all academic levels are faced with the task of making the learning meaningful to students.

Aim of the study

The main aim of this study is to find out the effect of computer instructional technique on junior secondary school's business studies achievement.

Specifically, the study seeks:

- i. Assess the difference between pre-test mean achievement scores of students taught Business using computer instructional techniques and those taught using conventional method.

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- ii. Determine the difference between pre-test and post-test mean achievement scores of students taught Business using computer instructional technique.
- iii. Find out the difference between post-test mean achievement scores of students taught using computer instructional technique and those taught using conventional method.

RESEARCH QUESTIONS

- i. What is the difference between pre-test mean achievement scores of students taught Business studies using computer instructional method?
- ii. What is the difference between pre-test and post-test mean achievements scores of students taught Business studies using computer instructional method?
- iii. What is the difference between post-test mean achievement scores of students taught using computer instructional techniques and those taught using conventional method?

RESEARCH HYPOTHESES

- Ho₁.** There is no significant difference between pre-test mean achievement score of students taught Business studies using computer instructional technique and those taught using conventional method.
- Ho₂.** There is no significant difference in the pre-test and post-test mean achievement scores of students taught Business studies using computer instructional technique.
- Ho₃.** There is no significant difference between post-test mean achievement score of students taught using computer instructional techniques and those taught using conventional method.

Literature Review

This study is based on the theoretical foundations of constructivism learning theory. Constructivism is basically a theory based on observation and scientific study of how people learn. It says that people construct their

own understanding and knowledge of the concept through experiencing things and reflecting on those experiences (Schunk, 2012).

Over the past twenty-five years, computers and its related technologies have influenced nearly every aspect of the developed countries of the world (Traynor 2014). The description in information and communication technology has increased efforts to equip the classrooms of these countries with computers (House 2011). Computer hardware and software has developed rapidly over the past five year (Shoemaker 2013). The computers have become much more powerful, easier to use, smaller, and more convenient and much more accessible. In recent years, advances such as hard disks, compact disks – read only memory (CD Roms), laser disks, and affordable printers have made computer much more useful for the educational process. Networking has allowed computers to be easily accessible to the teachers as well as easier for use with software packages. The internet has increased student interest in computers and has led to an increase in student computer literacy and skills (Zhang, Watson & Banfield, 2007).

In teaching, this technology empowers students to have greater control over the learning process with all the benefits associated with active learning and personal responsibility. Not only students decide by using ICT on when to learn and how to learn, increasingly they will also decide what to learn and how that learning is to be certified (Ugodulunwa & Uguanyi 2003). It is in this sense that ICT unbundles the learning enterprise from the teaching enterprise (Traynor 2014). In teaching, ICT has strong potential to increase learning productivity in the areas of codified knowledge and algorithmic skills. In these specific areas, the implication is that ICT should supplement human instructors whenever possible – human intervention should be oriented mainly towards making the advantages of ICT accessible to all learners.

Methodology

Research Design

The study utilized quasi experimental design involving pretest and post-test. This is made up of two groups; experimental and

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control. The experimental groups were exposed to Computer-Based Instruction and the control groups were exposed to conventional lecture method. A pre-test was administered to the two groups to determine the equivalence of performance of students prior to the treatment. This is followed by a post-test which was administered after the treatment for a period of six weeks to determine the relative effectiveness of Computer-Based Instruction on students academic achievements in Business studies.

G₁: Y₁₁ X Y₁₂
 G₂: Y₂₁ Y₂₂

Illustration of the Research Design Adopted from (Sambo 2005).

Table 1 shows the distribution of the two school into experimental and control group. The Table also presents the number of students who participated in the study.

Table 1: Sample Selected for the Study

S/n	Name of School	Status	Students
1	GJSS, Sale Manga	Experimental	50
2	GJSS, Kobi	Control	48
Total			98

Analysis of the Achievement Test Data

Table 3: Pre-test mean achievement scores of students taught Business studies using computer instructional techniques and those taught using conventional method.

Group	N	Mean	S.D	Mean Differences
Experimental	50	58.94	14.735	0.5575
Control	48	56.71	14.1775	

Table 3: presented data on the mean and standard deviation of academic performance of students in experimental and control groups. From their

mean score, the experimental and control groups obtained 58.94 and 56.71 respectively with a mean difference of 0.5575 which indicates that there is no significant difference at the pre-test between the two group before treatment. Also, the standard deviation score of 14.735, while the control group had 14.1775 respectively. This implies that no significant difference between experimental and control group before the treatment.

Table 2: Pre-test and post-test mean achievement scores of experimental group for students taught Business studies using computer instructional technique.

Group.	N	Mean	S.D	Mean Differences
Experimental				
Pre-test	50	58.94	14.735	
				1.97
Post-test	50	66.82	16.705	

Table 2: the result showed that the mean differences of the students is 1.97 from the mean of 58.94 and 66.82 respectively. The standard deviation for both pre-test and post-test of the group students was 14.735 and 16.705 respectively which mean that the mean score of experimental group is higher than that of the control group.

Table 3: Post-test mean achievement scores of students taught using computer instructional techniques and those taught using conventional method

Groups	N	Mean	S.D	Mean Differences
Experimental	50	66.82	16.705	
				6.585
Control	48	40.48	10.12	

Table 3 presents the data for the mean and standard deviation of students in experimental and control groups. From the result obtained, there is significant difference in the mean score of experimental and control groups

after the treatment. Students exposed to computer based-instruction have mean score of 66,82 while the students exposed to lecture method have mean score of 40.48 with a mean difference of 6.585 which shows that the experimental groups had a higher mean score compared to the control group.

Hypothesis one

H₀₁: There is no significant difference between pre-test mean achievement score of students taught Business studies using computer instructional technique and those taught using conventional method.

The data presented in table 1 showed the results of independent sample t-test used for the testing of difference between the pre-test mean achievement scores of the students of Business studies in experimental and control group. The data from the table showed the mean achievement scores of the experimental and control groups as 58.94 and 56.71 with a standard deviation of 14.735 and 14.1775 respectively. The t-calculated is 0.42 while, the t-critical is 1.99 with degree of freedom of 145. Since the t-calculated is below the t-critical and the P value above 0.05 level of significance. This shows that no significant difference exists between the pre-test mean achievement scores of students in the experimental and that of the control groups. Therefore, the null hypothesis (There is no significant difference between pre-test mean achievement scores of the students taught Computer Instructional Technique in the experimental and control group) is accepted.

Table 4: Test of difference between pre-test mean achievement scores of the students taught Business studies in the experimental and control groups

Pre-test	N	Df	Mean	SD	t-cal	t-crit	P value	Decision
Experimental	50	145	58.94	14.735	0.42	1.99	0.908	Accept H ₀₁ .
Control	48		56.71	14.1775				

Source: Field Work (2020)

Hypothesis two

H₀₂: There is no significant difference in the pre-test and post-test mean achievement scores of students taught Business studies using computer instructional technique.

Table 5 showed the difference between the pre-test and post-test mean achievement scores of students taught Business studies in the experimental group using paired sample t-test. The data from the table disclosed that the pre-test mean achievement scores is 58.94 with the standard deviation of 14.735, after conducting the treatment (Computer Instructional Technique) the post-test mean achievement scores is 66.82 with the standard deviation of 16.705. The t-calculated is 7.608 while, the t-critical is 2.08. with degree of freedom of 85 and the P value of 0.030. This also indicated significant difference exists between the pre and post-test mean achievement scores of the experimental group. Where the t-calculated is above the t-critical and the P value is below 0.05 level of significance, this shows that significant difference exists between the pre-test and post-test mean achievement scores of students taught Business studies in the experimental group.

Table 5: Test of difference between pre-test mean achievement scores of students taught Business studies in the experimental group.

Experimental	N	Df	Mean	SD	t-cal	t-crit	P value	Decision
Pre-test	50	85	58.94	14.735	7.608	2.08	0.030	Reject H ₀₂
Post-test	50		66.82	16.705				

Source: Field Work (2020)

Hypothesis three

H₀₃: There is no significant difference between post-test mean achievement scores of students taught Business studies using Computer Instructional Technique and those taught using conventional method.

The information on table 6 showed the results of independent sample t-test used for testing difference between the post-test mean achievement

scores of the students of Business studies in the experimental and control group. The information from the table shows the mean achievement scores in the experimental and control group as 66.82 and 40.48 with standard deviation of 16.705 and 10.12 respectively. The t-calculated is 61.77 were, the t-critical is 8.04 and the degree of freedom of 145 and P value of 0.031. Since the t-calculated is above the t-critical and the P value is below 0.05 level of significance, this indicated that significant difference occurred between the achievement scores of student taught Business studies using Computer Instructional Technique (experimental group) against the students taught Using the conventional teaching method (control group). The hypothesis which shows there is no significant difference between the post-test mean achievement scores of the students taught Algebra in the experimental and control group is therefore rejected.

Table 6: Test of difference between post-test mean achievement scores of the students taught Business studies in the experimental and control groups

Post-test	N	Df	Mean	SD	t-cal	t-crit	P value	Decision
Experimental	50	145	66.82	16.05	61.77	8.04	0.031	Reject H ₀₄ :
Control	48		40.48	10.12				

Source: Field Work (2020)

SUMMARY OF FINDINGS

1. The mean achievement scores of the students of Business studies in both the experimental and control groups in pre-test is almost the same with the mean difference of 0.557 and Standard Deviation difference of 0.5575 which shows that no significant difference exist in the achievement of the students.
2. The pre-test and the post-test mean achievement scores of the students of Business studies in the experimental group showed a mean difference of 7.88 and Standard Deviation difference of 1.97 which indicate that significant difference exist.

3. The post-test mean achievement scores of the students of Business studies in the experimental and control group showed that significant difference exist with a mean difference of 26.225 and Standard Deviation difference of 6.585

CONCLUSIONS

Based on the findings from this study, the following conclusions were made

1. Computer based instruction techniques is more effective instructional approach in teaching Business studies to junior secondary school students.
2. Computer based-instruction method appears to improved students achievement.

RECOMMENDATIONS

Based on the findings, the following recommendations were made:

1. Teachers should employ the Computer Instructional Technique in teaching of Business studies at the junior secondary schools to enhance students' performance.
2. Workshops and seminars for Business teachers should be organize by the State Ministry of Education on the use of Computer Instructional Technique in teaching Business studies.
3. Teachers of other related subject such as economics, agricultural science, and Civic education should utilize Computer Instructional Technique in the teaching of related areas of their studies to enhance students' academic achievement.
4. The National Educational Research and Development Centre (NERDC) should encourage the use of Computer Instructional Techniques as a method for teaching Business studies and other related courses. This would make the technique acceptable among teachers and students.

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