

TECHNOLOGY EDUCATION PRACTITIONERS ASSOCIATION OF NIGERIA (TEPAN)

FORMERLY NIGERIAN ASSOCIATION OF TEACHERS OF TECHNOLOGY (NATT)



Certificate of Attendance

This is to certify that

Mrs. Saratu Barua et' Hassan Suleiman

Attended its 35th Annual National Conference and Presented a Paper Titled

Interactive Effect of Gender on the Use of Computer in the Teaching Learning

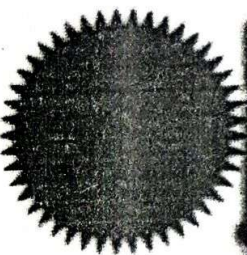
Process in 21st Century

HELD AT: New Library Auditorium, Akwa Ibom State Polytechnic, Ikot Osura, Akwa Ibom State.

17TH - 21ST OCTOBER, 2022

Theme Emerging and Re-Emerging Trends in Technical Vocational Education
and Training (TVET)

[Signature]
National President



[Signature]
National General Secretary

**INTERACTIVE EFFECT OF GENDER ON THE USE OF COMPUTER IN THE
TEACHING LEARNING PROCESS IN 21ST CENTURY**

BY

**ADAMU ZUBAIRU EVUTI (PH.D)¹; DR. MRS AMINA C. MOHAMMED², SULEIMAN,
HASSAN³. BAWA, SARATU⁴ & DANJUMA MAKUN⁵**

¹Department of Educational Technology
Federal University of Technology, Minna

^{2&4}Department of Science Education

Federal University of Technology, Minna

³Department of Urban and Regional Planning

Niger State Polytechnic, Zungeru

⁵Niger State College of Education, Minna

E-mail: Adamuzubairu@futminna.edu.ng

GSM: 08036328687

**BEING A CONFERENCE PAPER PRESENTED AT THE 35TH ANNUAL NATIONAL
CONFERENCE OF ANNALS OF TECHNOLOGY EDUCATION
PRACTITIONERS ASSOCIATION OF NIGERIA (ATEPAN)**

17TH – 21ST OCTOBER, 2022

Abstract

This study investigated the effect of gender on the use of computer in the teaching learning process and effect on the academic performance of students in history. It was a quasi-experimental study and uses a pre-test treatment control design. The experimental group was taught the slave trade as a topic in history with computer, while the control group was taught without computer. Two research questions and two null hypotheses guided the study. One researcher-made instrument of 20 item multiple choice questions was used for both pre-test and post-test. Data collected was analyzed using mean score and t-test. Result show that gender had no significant effect on the use of computer as shown by the performance of the boys and girls. However, the use of computer in the teaching improved the academic performance of the students.

Keywords: Gender, Computer, Teaching and learning, 21st Century

Introduction

The use of computer has become an indispensable tool for every aspect of human endeavours. In the school system, it has become an important medium in instructional delivery and instructional management. The recognition of value of computer in the teaching learning process in the in the teaching learning process in the contemporary world engendered the introduction of computer education into the Nigerian school curriculum in 1989. For meaningful teaching of computer education and deamination of computer knowledge, the National Commission for Colleges of Education (NCCE) (1996) is of the opinion that there is the need to produce seasonal professional teachers in computer education in other to accomplish the following objectives:

To teach computer studies at the primary and secondary school level

To program and process given data with maximum speed and accuracy

To demonstrate reasonably high level of computer education and allied disciplines.

With the introduction of computer into the educational system, it has been discovered that teaching could be developed in a more flexible way through Computer Assisted Instruction (CAI) in order to make it more responsive to student learning. According to Babalola (2000) the most important feature in computerized instruction is that it permits a high degree of individualization. This in effect means that students can proceed at their own pace, following a path through a curriculum as suited to their particular interest and talent. However, the introduction of computer in the last couple of years has had little or no effect on the traditional daily activities without the school system (Yusuf, 2008).

According to Cotton (2009) in Yusuf and Afolabi (2010), the use of CAI as a supplement conventional instructional that produces high achievement than the use of conventional instructional alone. Research is inconclusive regarding the comparative effectiveness of

conventional instructional alone and CAI alone, and that computer base education (CAI and other computer application) produce higher achievement than conventional instructional alone. In addition, students learn instructional contents faster with CAI than conventional instruction alone, they retain what they have learned better with CAI than with conventional instruction alone. Also Karper, Robinson Casadokehoe (2010) stated that CAI has been found to enhance students' performance than conventional method.

Accordingly, the full potentials of computer in assisting or managing instructional are yet to be explained in Nigeria. A lot of factors have been identified as hindrance to the use of computer in schools. Among these are cost of purchase, epileptic electricity supply, computer illiterate teachers and gender attitudes. Studies have shown differences in the attitude of male and female students to the use of computer in the schools according to the study carried out by Spots, Bowman and Mertz in USA on gender and use of instructional technologies, males rated their knowledge and experience with some innovative technologies higher than did females. For frequency of use, no significant differences were found with the exception of videos, where females indicated slightly more frequent use. Both rated technologies as important to instruction. The other factor influencing technology use include time to learn technology, increase student learning ease of use, training and available information in discipline.

The research conducted by Mitra, Lenzmeier, Stefensmeier, Avon, Qu, and Hazen (2000) on gender and computer use in an academic instruction explained the nature of relationship between gender, categories of computer use and attitudes toward computer in a computer enriched environment where all students were provided with network access and laptop computers over a four year period. The result indicated that women were less positive about computers than men and the use level of computer by women were less frequent than for men. This change in the relationship is a throwback to the earlier days of computing when research had indicated that men were more positively disposed toward computer than women.

Shashaani, (2010) using a sample of 202 college students also in USA, found that women are less interested in computer and less confident than males, males were more experienced. Future analysis of students responses show that one semester of computer training improved their attitudes towards computers. Studies like those of Bello, (2005) did not find any form of influence being exerted by gender on student performance. Yusuf and Afolabi (2010) concluded that gender has no influence in the academic performance of male and female students exposed to CAI either individually or co-operatively. This study therefore investigated not only the effect of gender on the use of computer but also the effect of computer use on students' academic performance

Research Questions

Two research questions were formulated to guide this study and they are:

1. Does the use of instruction affect the academic performance of students in teaching and learning process?
2. Does gender affect the use of computer in the learning process?

Hypothesis:

Two null hypothesis were formulated and tested at 0.05 level of significance:

H₀₁ - there is no significant difference between the academic performance of students in the experimental group and those in the control group

H₀₂ - there is no significant differences between the academic performance of males and females in the experimental group.

Methodology

There was a quasi-experimental research design because there was no randomization of sample. In fact classes were rather used. It adopted pre-test treatment-control, post-test design. The experimental group was taught the history concept of slave trade in West Africa with computer while the control group was taught without computer.

The study was conducted in government secondary school Evuti in Lapai local government area in Niger state minus out of three classes of SS II, two of them SS2b and 2c were randomly selected for the study. SS 2b was used as the experimental group while SS 2c was the control group. There were 30 students in each class

One research made instrument that was used for data collection in this research is a 20-item multiple choice questions. This was used for both the pre-test and post-test. The questions were drawn from the topics taught in history. These topics were taught for three weeks.

A test re-test method was used to ascertain the reliability of the instrument SSII students from government secondary school Gulu was used. The score were correlated using Kudar-Richardson correlation analysis which yielded a co-efficient of 0.76 mean score and t-test were used for analysis of data collected. Mean score were used to consider the research questions while t-test were used to test the hypothesis

RESULTS

Research question 1- Does the use of computer instruction affect the academic performance of students in the teaching learning process?

Table 1: showing effect of the use of computer academic performance of students

Group	No of students	Mean score
Experiment	30	17.1
Control	30	15.1

From the table above, student taught with computer had a mean score of 17.1 while those taught without computer had a mean score of 15.1. This shows that those taught with computer performed better than those taught without computer

Research question 2: Does gender affect the use of computer in the learning process?

Table 2: table showing effect of gender on the use of computer in the learning process

Gender	No of students	Mean score
Males	15	17.7
Females	15	16.5

From the table above, the mean score of the males (17.7) was higher than that of the females (16.5) showing that the males performed better than the females. But the differences in the performance was not significant

Hypothesis one

There are no significant differences between the performance of students in the experimental group and those in the control group

Table 3: table showing academic performance of students in the experimental and control group

Group	No of students	Mean score	Hp	Probability level	SD	t-cal	t-critical	Dec
Control	30	15.5	28	0.05	1.87	7.38	2.66	Rejected
Experimental	30	17.1	28	0.05	0.17			

From the table above, the t-calculated was 7.38, which is more than the t-critical of 2.66. This shows that the experimental group performed better than the control group based on this, the null hypothesis was rejected meaning that there is a significant difference between the academic

performance of the experimental group and control group. This difference can be attributed to the use of computer in the teaching since all other conditions were the same for both group.

Hypothesis Two

There is no significant difference between the academic performance of males and females in the experimental group.

Gender	No of student	Mean score	SA	AF	Probability level	t-call	t-critical	Dec
Male	15	17.7	0.88	14	0.05	0.39	2.763	Dec
Females	15	15.9	2.95	14	0.05	2.39	2.763	

Technologies did not regress on the outcome assessment. He further asserted that when new technologies are integrated into teaching and learning, there is greater students' engagement in learning and greater engagement equal to higher achieving.

The study also shows that there is no significant difference in the performance of the boys and girls in the use of computer in the learning process. The finding agrees with that of Anulobi (2009). In his study of fine arts with video compact disc instructional package (VCDIP), he found out that gender did not have any impact because both the boys and the girls perform basically the same. This also agrees with the findings of Yusuf and Afolabi (2010) on effect of gender on use of CAI.

Conclusion and recommendations

The study showed that the use of computer just like any other new technologies improved the performance of students in the teaching and learning of history. Gender has no effect in the use of computer among students.

Based on these findings the following recommendations were made:

1. The government alongside with the parents and philanthropists should equip our schools from primary to tertiary levels with computer and new technologies to enhance learning and make teaching easier
2. There should also be provision for regular supply of electricity to schools at all times
3. Teachers in the school should be given free computer training by the government (state and federal) to enable them use these new technologies when supply to school.
4. There is the need to develop relevant computer assisted instructional packages for use within the Nigerian school system.

References

- Akpan, I.O. & Abia, D.U. (2009). ICT and attainment of educational goals in Nigeria. *Journal of educational technology and instruction (JETI)*. 1(1), 93-104
- Anulobi, J.C. (2009). Effect of the use of video compact disc instructional package (VCDIP) on academic performance of junior secondary school fine arts students in Warri. *Journal of educational technology and instruction (JETI)* 1(1), 31-36
- Babalola, I.E. (2000), the need for computer assisted instruction The class room situation. *Nigeria journal of computer literacy* 2(1), 58-68
- Bello, G. (2005), senior secondary school students' knowledge misconception and alternative conception of a major biology proposition. Unpublished med thesis, university of Ilorin
- Federal republic of Nigeria(2004). National policy on education(3rded)
Lagos; Nigeria Educational research and development council (NERDC)
- Mitra, A. Lenzmeier, et al (2000). Gender and computer use in an academic institution; report from longitudinal study: *journal of computing research* 23(1), 67-84
- NCCE.(1996) Minimum standard for Nigerian certificate in education. Kaduna: government press
- Yusuf, M.O. (2008), a study of the dimensions toward computer education in Nigerian secondary schools. *Nigeria journal of computer literacy* 2(1), 47-58.