

Effects of Computer Aided Package for Individualized Teaching and Learning of Social Studies Students in Junior Secondary Schools, in Minna Niger State, Nigeria.

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Abstract

The research investigated the effects of computer-aided learning (CAL) Package for individualized social studies instruction in Niger state Junior Secondary Schools. It further investigated the gender differences in the achievement of the subject. A total of 120 students were randomly selected from six secondary schools in Bosso Local Government of Niger state. They were divided into experimental and control groups. The control group was taught using the conventional (expository method) of teaching. The experimental group was taught with computer aided learning (CAL) package for individualized study. A pre-test was administered before the teaching started and post-test was given at the end of the treatment. A t-test statistics was used to analyze both student performance and participation. Result showed that experimental group performed better than control group.

Introduction

The teachers remains as an important agents in the implementation of school curriculum. In recognition of the fact, the FRN (2001:39-40) stated clearly in section 6B under the goals of teacher education that:

- (a) Teacher education shall produce highly motivated, conscientious and effective classroom teachers for all levels of the educational system.
- (b) Teacher education shall continue to take cognizance of changes in methodology and in the curriculum. Teachers shall be regularly exposed to innovations in their professions.

The above goals therefore spell out government intention to produce teachers that can effectively and efficiently teach. Thus, the National policy on Education also recognizes the importance of information and communication technology (ICT) as such it was introduced into the school system. This effort is to keep teachers abreast with innovations in the society. This study is aimed at determining the effects of computer-aided learning (CAL) package for individualized social studies instruction in Niger state junior secondary schools. Social studies is one discipline in the school curriculum that has generated so much confusion and debate right from its inception in Nigeria (Adewuyi, 1992, Akinbode, 1993). The debate arising as a result of the attempts by various social studies educators at explaining its meanings, scope, purpose as well as content and methods. Social studies is viewed as the studies and his environment (Ajayi, 1999). This justifies the saying that it is the study of man and his activities. More so that it has become one of the core subjects for junior secondary school (JSS 1-3). The effect of a computer aided learning give each student. The opportunity to have access to what the teacher is discussing or teaching. Empirical evidence provided some fact to show that several forms of media, including a computer-aided learning have being found to be useful in teacher education and training. Experiments on the effectiveness of media and technology in school was conducted in English-speaking counties such as Australia, Canada, United kingdom, Algeria, Ivory coast, Zambia, India, and United state of America using computer-aided learning, which has being found successful and rewarding. As early as 1969 may and Lumsdaine have this to say one of the major conclusion of the previous research is that computer-aided of all variation and qualities have proved to have value for at all schools in all subjects, other research findings tend to support the above mentioned

view. For example Wilber scharam (2000) came up with convincing evidence that there is hardly any subject matter which could not be taught effectively using a computer-aided learning Gross (1997) flaming (1978) Agun (1979). The concept of educational technology is gradually being understood by educational planners and institutions in Nigeria today. This as a result of the fact that more students as exposed to the use of computer-aided teaching and learning and eventually about technology of development. Hale (1970) reported that the use of computer in teaching social science subjects offered at the junior secondary school level, could be best understood by the student if the teachers of social studies effectively utilize the use of educational instructional materials, which include computer. Experiment and research studies have proved that through appropriate use of a computer Aided learning, subject like social studies can be taught more effectively, it must however be born in mind that instructional materials should be used when and only when they help to facilitate learning. A lot of students failed social studies at the senior secondary certificate Examination levels (SSSE, Grade 11),(NTI 2003).This is probably due to lack of aids to the learners right from the very beginning, due to ineffective use of instructional materials especially the visual ones. A lot of teachers of social studies in almost all the Nigerian schools only depend on the \Chalk and talk /method of teaching which is very much teachers centered, instead of the learners centered approach According to piaget (1979) who stressed the Importance of the senses in the selection of instructional material for learning said that 75% of what students learn is through sight,13% hearing 6% through touch, 3% through taste ,and 2% through smell.

Research findings by Abubakar (1999), Isah (2000), Ikwuka (2005),Gambari (2005), Alabi, (2003) and Dantala, (2005), have shown that a computer-Aided Learning which are visual materials contributed to Learners understanding, a computer-Aided Learning are instructional materials that employ the stimuli of sight and Learning .This empirical research aimed to portray some ways of reducing the learning problems in social studies ; through the use of visual instructional materials ,particularly a computer-Aided Learning (CAL).

Statement of the Problems

The picture emerging from research reports shows that students have difficulty in understanding or learning social Studies. However, despite the relevance of social studies to man development and society, its teaching Learning is faced with many challenges such as:

- A. Lack of instructional materials that will facilitate teaching and learning of social studies simple and easily.
- B. Students in ability to remember what has been learnt.
- C. Poor performance at the senior school certificate examination (WAEC) National Teachers Institute (NTI) Kaduna chief Examiners report (May/June 2004/2005).

Purpose of the Studies

The purpose of this research is to find out the effect of a computer-aided package for individualized learning of social studies in junior secondary schools. It will strive to achieve the follows objectives:

The main objectives of the study are to find out if

- a. The use of instructional computer would improve the teaching and learning of social studies junior secondary schools.
- b. The use of instructional computer would improve the retention and understanding of the students.

- c. The use of instructional computer would have positive effective in gender relationship in students' performance.

Research Questions

This study is aimed at finding answers to the following questions:

- (1) Is there any difference in the academic performance of students taught social studies with CAL Package and those taught with conventional method?
- (2) Is there any difference in the performance of gender when two of them were taught using Computer Assisted Package?

Research Hypothesis

In order to answer the research questions, the following null hypothesis were formulated and tested.

- i. H_{01} : there is no significant difference in the academic performance in the students taught with CAL and those taught with discussion method.
- ii. H_{02} : there is no significant difference in the gender performance when two of them were exposed to the same treatment.

Significance of the Study

The finding of this study will encourage the school management, the curriculum planners and school administrators to provide adequate instructional materials such as computer aided learning package for effective classroom teaching and learning. It will enable the teachers of social studies to appreciate the significance of computer aided learning in the teaching and open up avenue further research study.

Research Design

The research design used for this study is the pre-test post-test experimental control group designed randomly sampling of kerlinger (1973) and Tuckman (1978) Both the experimental and control groups were first pre-tested.

Sample and Sampling Techniques

The target population for this study were all the junior secondary schools in Niger state .The sample for the research study was made up of (120) students (60 males and 60 females) from six secondary schools randomly selected from Agaie local Government Area of Niger state. Three of the six randomly selected schools were used experimental group and other three as control group from each of the school a total of 20 (10 male and 10 female) JSS students were randomly selected. A schematic presentation of the selected schools is given below.

Table 3.1 schematic presentation of the selected schools

| Group | Schools | Male | Female | Total |
|--------------------|--------------|------|--------|-------|
| Experimental Group | JSS Bakeko | 10 | 10 | 20 |
| | JSS Agaie | 10 | 10 | 20 |
| | JSS Katcha | 10 | 10 | 20 |
| Control Group | JSS Kutiriko | 10 | 10 | 20 |
| | JSS Duma | 10 | 10 | 20 |
| | JSS Dangana | 10 | 10 | 20 |
| Total | | 60 | 60 | 120 |

Research Instrument

The research instrument used was the research made social studies achievement test (SAT) designed and named by the researcher and also employed as a pretest and post-test in the study. The instrument is a 20 item multiple choices achieve five options (A-E) and only one of the options was correct. Each correct answer carried 5 marks.

Validation of Test Instrument

The three research instrument (SAT) used for this study was validated by two senior lecturers of social studies Department, Niger State College of Education, Minna. The subject officer of social studies at National Examination Council (NECO) headquarters minna. The reliability shows that the test instrument was good enough to use for this research.

Method of Data Collection

The data was obtained for this research from the result of post-test which they were scored according to (SAT) marking scheme. The scores here formed the basis of data for testing hypothesis for this research.

Method of Data Analysis

The scores of the students in both groups for the pre-test and post-test were collected and arranged in frequency distribution table. Means standard deviation and the t-test statistics were used to analyze and test the hypothesis formulated, the levels of the significant adopted for the analysis was $P < 0.05$. This level of Significance forms the basis for retaining or rejecting each of the hypotheses.

Table 1: t-test result of pre- test scores for experimental and control group

| Variable | No | Means (X) | SD | T-Value calculated | T-Value critical | Significant-level |
|-----------|----|-----------|------|--------------------|------------------|-------------------|
| EXP.group | 60 | 10.12 | 1.62 | 0.8 | 1.67 | 0.42 |
| CON.group | 60 | 9.98 | 1.58 | | | |

Source: Field survey 2010

Table 1 above shows the t-test result of per-test scores for experimental and control group. The t- value calculated is 0.81. Since the t- value calculated (0.81). It simple means that there is no significance difference between the mean score of experimental group and the control group for the pre-test. The two were found to be equivalent before the commencement of the treatment.

Table 2: t- test result of the post- test scores for experimental and control groups.

| Variables | No | Means(X) | S.D | T- Value calculated | T- Value critical | Significant Level |
|-----------|----|----------|------|---------------------|-------------------|-------------------|
| EXP.Group | 60 | 9.27 | 2.03 | 8.57 | 1.67 | 0.000 |
| CON.Group | 60 | 7.25 | 1.80 | | | |

Source: Field survey 2010

Table 2: revealed the mean, standard deviation, t-value calculated and t-value critical of the experimental and control groups. The means score of experimental group was 9.27 and 7.25 for the control, this shows that the experimental group perform better than the control group. The t- value calculated is 8.57. Since the t- value calculated is

greater than the t- value critical (1.67). It simple means that there is great significant difference between the performance of group taught using computer aided learning and that those taught without usage of computer. The hypothesis of no significant difference is here by rejected.

Table 3: t-test result of post-test of Male experimental group and female experimental group.

| Variable | NO | Means(x) | S.D | T..Value calculated | T.Value critical | Sign.level |
|----------|----|-----------|------|---------------------|------------------|------------|
| Boys | 30 | 11.13 | 1.61 | 0.81 | 1.70 | 0.63 |
| Girls | 30 | 10.97 | 1.30 | | | |

Source: Field Survey 2010.

Table 3: above shows the t-test result of the post-test for the boys' experimental group and the girls' experimental group. The t-value calculated is 0.81 which is Less than 1.70 T.value critical This therefore means that there is significant difference between the mean scores of boys and girls experimental group for the post -test .The boys performed better than the girls .Here the hypothesis H_{O2} is here by rejected. As the boys performed better than the girls

Discussion of Result

From the result in table 3, there was significant difference between the performance of male and female students that were taught social studies with the computer soft ware package. The male students performed better than the female students. This result contrary to the findings of Alabi and Dantala (1995)who concluded that the role and performance of girls in electronic media especially the computers is always better than the males (boys).It was observed by Dantala (2002) that male students found computer to be more interesting than females. The result also agrees with findings of Abdullahi (1981) and Gambari (2004) who found that gender did not influence students' performance in computer/science generally.

Contributions of the Study to Knowledge

Computer is a technological information processing device which can be used to present instructional events that are designed, developed and produced for individualized learning situation. Ezeliora (2000), Also Onosonya (1996) observed that the computer has been found to be the most suitable, reliable and versatile medium for individualizing instruction. It is also to deal on individual bases with a number of students simultaneously.

This research study has therefore:

- (a) Exposed secondary school teachers to the use of CAL package as a meaningful strategy for classroom instructions.
- (b) Shown that CAL is an effective strategy for classroom instruction which could improve performance of students. This is in view of the fact that the research was only for a short period, if it was a longer period, the effect would have been pronounced.

Conclusion

The aim of this research is to determine the effect of the researcher developed computer aided learning software package. The result of the study revealed that student taught with the CAL package scored significantly higher in the social studies

Achievement Test. (SAT). The package had some effect on both male and female students. The study has also shown that CAL package provided an effective teaching strategy that leads to understanding, meaningful learning, and improves performance.

Recommendations:

The importance of computer in teaching school subjects especially difficult concepts that are too abstract cannot be over emphasized Chukwu, etal (2003). It had been provided beyond reasonable doubt that CAL package are better approach to embark upon by teachers for meaningful learning.

From findings of the study, it is therefore recommended that:

- (i) The use of computers for teaching and learning in our schools should be encouraged. in addition, computer education should made compulsory for teachers and students in all levels of education to achieve this, Curriculum designers should include the use of computers for teaching and learning into school curricular, especially the use of CAL package, computer modeling, CAL simulation and so on.
- (ii) Social studies teachers should develop various computer packages so as to cover the periods they sometimes loss on official assignments (such as supervision and marking exercise, during and after NECO, WAEC and NTI examinations)
- (iii) The government should motivate teachers by raising their status and increasing their monthly payment. This will encourage them to stay in the profession and also discharge their duties effectively.

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