Effects of Computer Assisted Instruction on Students’ Achievement in Agricultural Science in Secondary Schools in Bayelsa State

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Abstract

The study was carried out to determine the effects of computer assisted instruction (CAI) on students’ achievement in Agricultural science in secondary schools in Bayelsa State, Nigeria. Three research questions and three null hypotheses were developed to guide the study. The study adopted quasi-experimental design. The population for the study was all 4,875 SSS II students offering Agricultural science in Bayelsa State. The sample size for the study was 85 SSS II students of Agricultural science from two randomly sampled secondary schools in Kolokuma/Opokuma Local Government Area of Bayelsa State. The instrument for data collection was 60-multiple choice Agricultural Science Achievement Test (ASAT). The instrument was validated by three experts and the reliability was tested using Kuder Richardson 21 (K-R21) reliability method which yielded a coefficient of 0.76. Data collected were analysed using mean and standard deviation for answering the research questions while Analysis of Covariance (ANCOVA) was used for testing the hypothesis at 0.05 level of significance. The study found that students taught Agricultural science with computer assisted instruction had significantly higher mean achievement score than the students taught with conventional lecture method. The study found that the use of CAI appreciably increased the performance of both male and female students than the use of conventional lecture method. In addition, the study found that gender of the students had no significant (p<0.05) interaction effects with the treatment given to them. Based on these findings, the study among others recommended that secondary school Agricultural science teachers should adopt the use of computer assisted instruction for instructional delivery, seminars, workshops and conferences should be organized by the state ministry of education where teachers are trained on the usage of computer assisted instruction.

Keywords: Computer Assisted Instruction, Conventional Teaching, Achievement, Gender, Agriculture.

Background of the Study

Secondary education occupies an important position in the educational system. According to Lucas and Olaniyan (2008), secondary school is that level of education where children receive basic education that enhances their advancement to higher professional and academic pursuit. The Federal Republic of Nigeria (2014) in her national policy on education described secondary school as education children receive after primary education and before
tertiary stage. Secondary school according to Brickman (2009) is an education immediately after elementary schooling. It begins generally at about the age of eleven (11) years and continues for about the next six (6) years. Eya and Chukwu (2012) observed a downturn in the quality of instruction in public secondary schools, evidenced by poor student work and poor performance in external examinations. Some of the vocational subjects taught to students at secondary school level is Agricultural science.

Agricultural science according to Ekemode (2000) is an art and science of the application of basic scientific knowledge to the cultivation of the soil, breeding of plants and animals and better production of crops and livestock for the use of man. The Caribbean Examination Council (CEC) (2010) described Agricultural science as a subject that allows students to develop knowledge and understanding of the interaction between the component parts of agriculture, and the scientific principles that explain the processes that take place when agricultural inputs are transformed into outputs. The concept of agriculture as a science extends beyond the farm as it may also be conducted in the laboratory, classroom and any other enabling environment at primary, secondary and post-secondary school levels. With regards to secondary school, Agricultural science deals with the teaching of how to grow crops, rear animals or livestock and perform other operations that ensure expansion of knowledge in the subject at Junior and Senior secondary school levels.

As the government of Nigeria realized the importance of Agricultural science in secondary schools, a great deal of prominence was given to the study of the subject under the 6-3-3-4 system of education. Hence, Agricultural science was made a pre-vocational core subject at the junior secondary school (JSS). At the senior secondary school (SSS) level, Agricultural science was made a vocational elective, where a student could choose to offer Agricultural science or any other vocational subjects like technical drawing or home management. The senior secondary school Agricultural science curriculum content is designed to lay a solid foundation for vocational agriculture that is proposed to train individual to acquire relevant occupational skills that make them productive farmers (Federal Ministry of Education, 2008). Similarly, Omosewo, Akanmu and Asebiomo (2013) emphasized that the senior secondary agricultural curriculum is geared towards job creation, poverty alleviation and eradication, and wealth creation. This could be achieved through active involvement of students in agricultural activities as provided in the curriculum.
The Federal Government of Nigeria (2014) in national policy on education highlighted the main objectives of the teaching and learning of agricultural science in secondary schools to include: stimulation and sustaining students’ interest in agriculture, enabling students acquire basic knowledge and practical skills in agriculture, preparing students for occupation in agriculture and preparing students for further studies in agriculture. It is so glaring that the aim of achieving these objectives is technically defeated as a result of the continuous poor achievement and declining interest of students in studying agriculture. This is evident in the downward trend of students’ performance in West Africa Examination Council (WAEC) on yearly basis in Bayelsa State. The poor performance of the students in agriculture is more noticed in crop production and crop protection which form parts of the main trust of sustainable agriculture.

This current trend of poor performance of students in agriculture in terminal and public examinations in Bayelsa State is a worrisome issue that has attracted the interest of major stakeholders in education across the state. The continuous poor performance of students in agriculture has worsened the current unemployment rate and food shortage across the country and Bayelsa State in particular. Experts had always blamed the present declining performance of students on ineffective teaching methods. Unongo (2015) noted that most teachers use mere lecture and explanation methods to teach skill related lessons which often retard learning. Oranu (2003) stated that lecture and demonstration teaching methods are regarded as conventional teaching methods which are content driven and certainly not learner-centered. Conventional teaching methods are predominantly used for instructional delivery in Nigerian schools including secondary schools. Okon (2002) equally noted that conventional teaching methods are not challenging enough to the needs of the students. Conventional methods of instruction which are sometimes referred to as “one-way communication” methods of instruction are widely used in Nigerian schools, when this method is used, the teacher does most of the talking, and the students more often assume a passive role which makes learning ineffective. This calls for the use of modern teaching techniques that are capable of stimulating students’ achievement and interest in learning. For instance, Barnstein (2006) stated that effective teaching methods are meant to be as interactive as possible, emphasizing small group work using relevant and practical case studies. In affirmative, modern teaching methods require less talk on the part of the teacher and more activities and contributions from the students (Abdullahi, 1998). One of
the modern instructional strategies that are capable of stimulating students’ interest and achievement in learning agriculture is computer assisted instruction (CAI).

Computer assisted instruction (CAI) is an automated instructional method in which a computer (electronic machine) is used to present an instruction to the learner through an interactive process on the computer (Ajelabi 2000). Sharing a similar view, Gana (2013) described computer assisted instruction as virtually any kind of computer use for teaching in educational settings which include drill and practice, tutorials, simulations and instructional management. Computer assisted instruction is learner-centered and activity oriented. The advantages of computer assisted instruction according to Orjika (2012) include that; it ensures the application of proven teaching methods to students, offers equal educational opportunities for students by using the same programme, it changes the role of the teacher from teaching capacity to that of a guide, when properly handled it removes fright and embarrassment for the students and brings about meaningful learning and academic achievement.

Academic achievement is the learning outcomes of the students which can be measured by any form of assessment technique to ascertain academic gain of the students. Akinbobola (2006) described achievement of students as learning outcomes which include the knowledge, the skill and experiences acquired in both classroom and laboratory practices. Boyle and Dunleavy (2003) stated that students’ achievement in learning are determined by factors such as teachers ability, motivation, interest, meaningfulness of subject matter, methods of instruction, memory capacity of the learners and gender of the students. Gender has been identified as one of the factors influencing students’ achievement (Anagbogu and Ezeliora, 2007). According to Uwameike and Osunde (2005), gender refers to all the characteristics of male and female which describes behaviours or attributes expected of individuals on the basis of being either a male or female in a given society. Ekeh (2003) stated that gender is a terminology that categorizes human beings into males and females. With reference to teaching and learning situation, Wasagu and Mohammad (2007) observed that different results and views of researchers in studies of different subjects showed that male and female students perform differently as a result of cultural and traditional reasons.

The present level of academic achievement of students of Agricultural science irrespective of gender calls for immediate attention. One of the proven ways of averting poor performance of students and stimulate their interest in learning is the use of interactive teaching
methods (Azih and Nwosu, 2011; Orjika, 2012 and Gana, 2013). Hence, this study was therefore designed to establish the effect of computer assisted instruction (CAI) on students’ achievement in Agricultural science in secondary schools in Bayelsa State, Nigeria.

**Purpose of the Study**

The main purpose of this study was to determine the effects of Computer Assisted Instruction on students’ achievement in Agriculture in secondary schools in Bayelsa State, Nigeria. The specific purposes of the study include the determination of the:

1. effects of Computer Assisted Instruction (CAI) on students’ mean scores in Agriculture science achievement test (ASAT).
2. effects of gender on students’ mean scores in Agricultural science achievement test (ASAT).
3. interaction effect of treatments (CAI and lecture method) and gender on students’ scores in Agricultural science achievement test (ASAT).

**Research Questions:**

In line with the above specific purposes, the study answered the following research questions:

1. What is the mean achievement score of students taught Agricultural science with computer assisted instruction (CAI) and those taught with conventional (lecture) method in Agricultural science achievement test (ASAT)?
2. What is the effect of gender on students’ achievement in Agricultural science achievement test (ASAT)?
3. What is the interaction effect of treatments (CAI and lecture method) and gender on students’ achievement in Agricultural science achievement test (ASAT)?

**Null Hypotheses**

The following null hypotheses were tested at p<0.05 levels of significance:

**H01:** There is no significant difference in the mean achievement score of students taught Agricultural science with computer assisted instruction and those taught with conventional (lecture) method in Agricultural science achievement test (ASAT)?
**H02:** There is no significant difference in the mean achievement scores of male and female students taught Agricultural science with computer assisted instruction and those taught with conventional (lecture) method in Agricultural science achievement test (ASAT)?

**H03:** There is no significant interaction effect of treatments (CAI and lecture method) and gender on students’ in Agricultural science achievement test (ASAT)?

**Methodology**

The study was conducted in Bayelsa State. Three research questions were answered while three null hypotheses were tested at 0.05 level of significance. The study adopted quasi-experimental design. Quasi-experimental design is pre-test, post-test, non-equivalent control group design. According to Gall, Gall and Borg (2007), quasi experimental research design permits the use of intact classes. The population for the study was 4,875 SSS II students offering Agricultural science from the 94 public secondary schools in Bayelsa State.

Two coeducational public secondary schools were randomly sampled from Kolokuma/Opokuma LGA of Bayelsa State for the study. These include Community Secondary School Odi with 44 SSS II students of Agricultural science (20 males and 24 females) and Community Secondary School Sabagreia with 41 SSS II students of Agricultural science (19 males and 22 females). Through balloting, Community Secondary School Sabagreia was assigned to computer assisted instruction (experimental group) while Community Secondary School Odi was assigned to conventional lecture method (control group). The assignment of the two secondary schools through balloting was to ensure that each of the two schools has equal probability of being assigned to either experimental or control group. The instrument for data collection was 60-item multiple choice Agricultural Science Achievement Test (ASAT). The instrument was validated by three experts. One of the experts is a lecturer in Department of Agricultural Education, University of Nigeria, Nsukka and two from Agricultural Education unit of the Department of Vocational and Technology Education, Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria. For the purpose of ascertaining the internal consistency of the Agricultural Science Achievement Test (ASAT) instrument, Kuder Richardson 21 (K-R21) was used in which a coefficient of 0.76 was obtained. Before the commencement of the experiment, all students both in experimental and control groups were subjected to a pre-test in order to obtain the pre-test achievement scores. The administration of
the pre-test took place a week before the experiment began in the two secondary schools used for the study. The achievement scores obtained by the students from the two groups served as the pre-test scores of the study. Immediately after the pre-test, the actual treatment began in which SSS II students of Agricultural science in Community Secondary School Sabagreia were taught Agricultural science using computer assisted instruction while SSS II students of Agricultural science in Community Secondary School Odi were taught Agricultural science using conventional lecture method. The topics in Agricultural science under crop production that were covered in the treatment were: classification of crops, husbandry of selected crops, weeds and weed control and crop improvement.

The treatment lasted for a period of six weeks. After the six weeks of the treatment, the post-test was administered to the students in their respective groups to obtain the post-test achievement scores. The post-test was administered a day after the completion of the experiment. The scripts of the students were collated and marked by the researcher and the students were scored over 60. This is because, any correct answer out of the 60 questions is 1 mark. The data collected in the two stages (pre-test and post-test) from the two groups (experimental and control) were compiled for analysis. The data collected from the pre-test and post-test were analyzed using mean and standard deviation to answer the research questions while the hypotheses were tested using Analysis of Covariance (ANCOVA) at 0.05 level of significance.

Results

Research Question 1: What is the mean achievement score of students taught Agricultural science with computer assisted instruction and those taught with conventional (lecture) method in Agricultural science achievement test (ASAT)?

<table>
<thead>
<tr>
<th>Groups</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Pre/Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>X</td>
<td>SD</td>
</tr>
<tr>
<td>Computer Assisted Instruction</td>
<td>41</td>
<td>27.60</td>
<td>3.78</td>
</tr>
<tr>
<td>(CAI)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control (Lecture)</td>
<td>44</td>
<td>27.77</td>
<td>3.11</td>
</tr>
</tbody>
</table>

Table 1: Pre-test and Post-test Mean Scores of Students taught with Computer Assisted Instruction (CAI) and those taught with Conventional Lecture Methods in Agricultural Science Achievement Test (ASAT).
The result presented in Table 1 reveals that SSS II students that were taught Agricultural science with computer assisted instruction had pre-test mean achievement score of 27.60, post-test mean score of 50.60 and mean achievement gain score of 23.00. On the other hand, the SSS II students that were taught Agricultural science with conventional lecture method had pre-test mean achievement score of 27.77, post-test mean achievement score of 35.76 making the mean achievement gain score of the control group (lecture) to be 7.99. This result indicates that the use of computer assisted instruction appreciable increased academic achievement of SSS II students in Agricultural science than the use of conventional lecture method.

**Research Question 2:** What is the effect of gender on students’ achievement in Agricultural science achievement test (ASAT)?

**Table 2:** *Pre-test and Post-test Mean Scores of Male and Female Students taught with Computer Assisted Instruction and those taught with Conventional Lecture Method in Agricultural Science Achievement Test (ASAT).*

<table>
<thead>
<tr>
<th>Teaching Methods</th>
<th>Gender</th>
<th>N</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Gain Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>SD</td>
<td>X</td>
</tr>
<tr>
<td>Computer Assisted Instruction (CAI)</td>
<td>Males</td>
<td>19</td>
<td>27.65</td>
<td>3.36</td>
<td>50.62</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>22</td>
<td>27.55</td>
<td>3.45</td>
<td>50.58</td>
</tr>
<tr>
<td>Lecture (Control)</td>
<td>Males</td>
<td>20</td>
<td>27.80</td>
<td>3.35</td>
<td>34.97</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>24</td>
<td>27.74</td>
<td>3.54</td>
<td>36.55</td>
</tr>
</tbody>
</table>

The result presented in Table 2 above reveals the effect of gender on students’ achievement in Agricultural science. The result showed that male students taught Agricultural science with computer assisted instruction (CAI) had pre-test mean achievement score of 27.65, post-test mean achievement score of 50.62 and mean achievement gain of 22.97. Female students taught Agricultural science with computer assisted instructional (CAI) strategy had pre-test mean achievement score of 27.55, post-test mean achievement score of 50.58 and mean achievement gain of 23.03.
For the control group taught with conventional lecture method, male students had mean achievement score of 27.80 in the pre-test and 34.97 in the post-test making their mean achievement gain in Agricultural science achievement test to be 7.17. The female students taught with conventional lecture method had mean achievement score of 27.74 in the pre-test and 36.55 in the post-test making their mean achievement gain to be 8.81. This result indicates that the use of computer assisted instruction method for teaching SSS II students equally and significantly increased the achievement of both male and female students than the use of conventional lecture method. Hence, computer assisted instruction is not gender-sensitive as it increased the achievement of both gender significantly.

**Research Question 3:** What is the interaction effect of treatments (CAI and lecture method) and gender on students’ achievement in Agricultural science achievement test (ASAT)?

**Table 3: Mean Interaction Effect of Treatments (CAI and lecture method) and Gender of the Students on their achievement in Agricultural Science Achievement Test (ASAT).**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Gain Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Mean</td>
<td>27.73</td>
<td>42.80</td>
<td>15.07</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>3.72</td>
<td>5.87</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>39</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>Mean</td>
<td>27.65</td>
<td>43.57</td>
<td>15.92</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>3.54</td>
<td>5.76</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>46</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Mean</td>
<td>27.69</td>
<td>43.19</td>
<td>15.50</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>3.56</td>
<td>5.69</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>85</td>
<td>85</td>
<td></td>
</tr>
</tbody>
</table>

The result presented in Table 3 showed the interaction effect of gender and treatments (computer assisted instruction (CAI) and lecture methods) on students’ academic performance in Agricultural science achievement test. The result revealed that, male students had mean achievement score of 27.73 in the pre-test and 42.80 in the post-test making their overall mean achievement gain in Agricultural science test to be 15.07. On the other hand, female students had mean achievement score of 27.65 in the pre-test and 43.57 in the post-test making the overall mean achievement gain of female students in Agricultural science achievement test to be 15.92.
This result showed that there is no difference in the mean achievement scores of male and female students in the Agricultural science achievement test as a result of the treatments given.

**Testing of Hypotheses**

**Hypotheses 1, 2 and 3**

**H01:** There is no significant difference in the mean achievement score of students taught Agricultural science with computer assisted instruction and those taught with conventional (lecture) method in Agricultural science achievement test (ASAT)?

**H02:** There is no significant difference in the mean achievement scores of male and female students taught Agricultural science with computer assisted instruction and those taught with conventional (lecture) method in Agricultural science achievement test (ASAT)?

**H03:** There is no significant interaction effect of treatments (CAI and lecture method) and gender on students’ in Agricultural science achievement test (ASAT)?

The data for testing hypotheses 1, 2 and 3 are presented in table 4 below.

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig. (p-value)</th>
<th>Rmks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>11330.524*</td>
<td>4</td>
<td>2832.631</td>
<td>66.130</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>11701.308</td>
<td>1</td>
<td>11701.308</td>
<td>86.268</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
<td>451.752</td>
<td>1</td>
<td>451.752</td>
<td>2.495</td>
<td>0.126</td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td>10667.021</td>
<td>1</td>
<td>10667.021</td>
<td>65.608</td>
<td>0.000</td>
<td>S*</td>
</tr>
<tr>
<td>Gender</td>
<td>47.905</td>
<td>1</td>
<td>47.905</td>
<td>1.810</td>
<td>0.195</td>
<td>NS</td>
</tr>
<tr>
<td>Group * Gender</td>
<td>35.679</td>
<td>1</td>
<td>35.679</td>
<td>0.893</td>
<td>0.150</td>
<td>NS</td>
</tr>
<tr>
<td>Error</td>
<td>3188.471</td>
<td>80</td>
<td>17.051</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>199093.000</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>14518.995</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The result presented in Table 4 revealed that treatments (CAI and lecture methods) as main factor had a significant effect on students’ performance in Agricultural science achievement test (ASAT). The F-calculated (F-cal) value of 65.608 and the p-value of 0.000
which is less than 0.05 level of significance indicating that there was significant difference in the mean achievement scores of students taught Agricultural science based on the group of treatments given (CAI and conventional lecture method). Therefore, the null hypothesis of no significant difference in the mean achievement scores of students taught Agricultural science with computer assisted instruction and those taught with conventional (lecture) method in Agricultural science achievement test was rejected.

For the effect of gender on academic achievement, the result in the Table revealed that, the F-calculated value of 1.810 and p-value of 0.195 which was greater than 0.05 level of significance indicated that there was no significant difference in the mean achievement scores of male and female students in the Agricultural science achievement test. Therefore, the null hypothesis of no significant difference in the mean achievement scores of male and female students taught Agricultural science using computer assisted instruction was accepted.

For the interaction effect, that is Group*Gender, the F-calculated (F-cal) value was 0.893 while the p-value was 0.150 which is greater than 0.05 level of significance. This indicated that there was no significant interaction effect between the treatments (CAI and lecture method) given to students and their gender with respect to students achievement scores in Agricultural science.

**Discussion of the Results**

The findings of this study showed that senior secondary school (SSS) II students of Agricultural science that were taught with computer assisted instruction had higher achievement gain score than their counterparts that were taught with conventional lecture method. This finding supported that the report of Ochoyi and Ukwumunu (2008) who confirmed that students’ interaction with computers produced positive effect on their learning. The findings of this study is in line with that of Kareem (2015) who investigated the effects of computer assisted instruction on students’ academic achievement and attitude in Biology and found that there is significant difference between the achievement of students taught Biology using computer assisted instruction and those taught with conventional method. In addition, the finding of this study agreed with that of Gana (2013) who investigated the effect of computer assisted instruction on achievement and retention of colleges of education students in quantum physics.
and found that computer assisted instructional strategy has positive effect on the achievement of
NCE students in quantum physics.

The findings of this study on the effects of gender on students’ achievement showed that
the use of computer assisted instruction appreciably increased the mean performance scores of
both male and female in the Agricultural science achievement test. This showed that there is no
significant difference in the mean achievement scores of male and female students in the
Agricultural science achievement test. The non-significant effect of gender on students’
academic achievement in relation to the treatments implied that computer assisted instruction is
not gender sensitive and can produce the same learning effect on both male and female students.
The finding of this study agreed with that of Azih and Nwosu (2011) whose findings showed that
modern teaching method such as instructional scaffolding was superior to conventional method
in improving the achievement of both male and female students. Also, the findings of this study
corroborated that of Tabassum (2004) who found that computer-assisted instruction (CAI) was
equally effective for both male and female students. This study found no interaction effects of
gender, teaching methods on the achievement of the study in Agricultural science. The findings
of this study on interaction effects is in agreement with the findings of Azih and Nwosu (2011)
which equally showed that gender had no significant interaction with teaching approach on
students mean achievement.

Conclusion

The continuous low performance of students in Agricultural science in terminal and
public examinations at secondary school levels is causing great concern to the stakeholders in
secondary school administration in Nigeria and Bayelsa State in particular. This poor
achievement and interest of the students in Agricultural science has affected the production of
skilled manpower for the Nigeria agricultural sector. The conventional lecture method employed
by most lecturers for instructional delivery seem ineffective for equipping students for better
academic achievement and interest in agriculture. This ugly trend has further worsened
unemployment rate and shortage of food for the increasing population in Niger Delta and
Bayelsa State. To avert the present poor achievement of students in agriculture, this study was
carried out to investigate the effects of computer assisted instruction on students’ achievement in
agriculture in secondary schools in Bayelsa State, Nigeria.
A 60-item multiple choice achievement test was administered to senior secondary school students. Based on the data collected and analysed, the study found that computer assisted instruction significantly increased students’ academic achievement of students in agricultural science more than conventional teaching method. In addition, the study found that the use of computer assisted instruction appreciably increased the performance of both male and female students in the agricultural science achievement test. This indicated that computer assisted instruction is not gender sensitive as it increases the achievement of male and female students.

Recommendations

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

1. Since the use of computer assisted instruction enhance academic achievement of students in agricultural science, secondary school teachers should adopt the use of this technique for instructional delivery in schools.

2. Seminars, workshops and conferences should be organized by the state ministry of education where teachers and curriculum planners will be taught the application and usage of various modern teaching techniques such computer assisted instruction (CAI) for effective teaching and learning of agricultural science and other secondary school subjects.

3. Instructional materials such as computers and its accessories to facilitate quality teaching and learning should be provided by the government and school administrators.

4. Secondary school teachers in the state should be provided with in-service training for teaching skill update in the use of modern and student-centred instructional strategies such as computer assisted instruction (CAI).

References


