EFFECT OF E-LEARNING ON SECONDARY SCHOOL STUDENTS’ INTEREST IN BASIC STATISTICS

BY

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INTRODUCTION

- We live in a technological world, an era of technology revolution. Almost every individual associates with technology at home, school and even in the workplace.
- E-learning is an aspect of technology.
- It involves the use of technologies in teaching and learning.
Those electronic technologies include:

- Information and Communication Technology (ICT),
- Multimedia Learning,
- Technology Enhance Learning (TEL),
- Computer Based Instruction (CBI),
- Computer Managed Instruction (CMI),
- Computer Assisted Instruction (CAI), ETC.
Writers view about ‘E’ in E-learning:

- Bernard interpreted it as exciting, energetic, enthusiastic, emotional, excellent, educational, in addition to “electronic”.
- Eric referred to it as everything, everyone, engaging and easy.
- E-learning (ICT) has become an important part of most organization and businesses.
The roles and values of E-learning (ICTs) in Education:

• Promoting students commitment to learning ,
• Introducing the concept of new learning e.g. Many on-line learning packages which give students greater control over what they learn and how they learn.
• Bringing students and teachers together for the lessons, tutorials and one to one interactions across geographic Locations.
• Making students to do Science effectively and conducting experiments as viewed on screen.
Roles and values cont.

- Facilitating the process of learning through interaction with simulations.
- Fostering students interest and motivation
- Making the lessons more exciting and interesting for both teachers and students.
E-learning and learner’s interest

- Lack of infrastructure, equipment and poor teaching method contribute to students lack of interest.
- Techniques employed in teaching can affect negatively or positively the interest of the learner.
- Interest in learning can be as personal preference with regards to learner.
- It has been proven that teachers can make education meaningful by using E-learning resources that appeal to the interest of the students/learners to attract their attention.
- Therefore, E-learning has come to stay in Education industry.
BENEFITS OF E-LEARNING

- E-learning gives learner a true sense of agency in his or her education.
- It helps teachers to facilitate students interest towards learning.
- E-learning emancipates education.
PURPOSE OF THE STUDY

- To ascertain students interest in statistics.
- To determine interest of students in statistics with regards to school type.
RESEARCH QUESTIONS

- What are the mean interest scores and standard deviations of SS1 students taught statistics with E-learning (CAI) and those taught with conventional method as measured by Statistics Interest Inventory (SII)?
- Does school type have any effect on SS1 students with regards to their interest in teaching and learning of statistics?
METHODOLOGY

- The design was a quasi-experimental using pre-test and post-test non randomized control group.
- The sample comprised of 203 SS1 students in the study area.
- The instrument for data collection was Statistics Interest Inventory (SII).
- The instrument contains 13 items which was used to ascertain the students’ interest in statistics using E-learning.
METHODOLOGY CONT.

- Four point scale was used:
  - Strongly Agree (SA) (4)
  - Agree (A) (3)
  - Disagree (D) (2)
  - Strongly Disagree (SD) (1)

- A reliability coefficient of 0.71 was established using Cronbach alpha.
DATA ANALYSIS

- Mean and Standard deviation were used to answer the research questions.

- While Analysis of Covariance (ANCOVA) was used to test the hypothesis at 0.05 alpha levels of significance.
Table 1: Mean interest scores and standard deviations of subjects taught basic statistics using E-learning (CAI) and conventional methods of teaching

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-interest</th>
<th>Post-Interest</th>
<th>No of Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Experimental E-Learning (CAI)</td>
<td>24.22</td>
<td>5.58</td>
<td>46.35</td>
</tr>
<tr>
<td>Control (Conventional)</td>
<td>22.94</td>
<td>3.46</td>
<td>23.66</td>
</tr>
</tbody>
</table>
Table 1 cont.

- Table 1 above, shows the pre and post interest scores of the subjects (students) both in experimental and control groups. It varied from 24.22 to 46.35 and 22.94 to 23.66 accordingly. The mean difference for experimental group was 22.13 and that of control group was 0.72.

- This shows that the use of E-learning (CAI) appears to arouse students interest than the conventional approach.
Table 2: mean interest scores and standard deviation of subjects in their different groups and school types.

<table>
<thead>
<tr>
<th>School type</th>
<th>Group</th>
<th>Pre-Interest</th>
<th>Post-Interest</th>
<th>No of Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Girls only</td>
<td>Experimental E-learning (CAI)</td>
<td>30.42</td>
<td>6.98</td>
<td>45.42</td>
</tr>
<tr>
<td></td>
<td>Control (Conventional)</td>
<td>22.48</td>
<td>4.32</td>
<td>25.06</td>
</tr>
<tr>
<td>Boys Only</td>
<td>Experimental E-learning (CAI)</td>
<td>25.04</td>
<td>5.40</td>
<td>46.67</td>
</tr>
<tr>
<td></td>
<td>Control (Conventional)</td>
<td>20.62</td>
<td>2.78</td>
<td>23.08</td>
</tr>
<tr>
<td>Mixed</td>
<td>Experimental E-learning (CAI)</td>
<td>22.32</td>
<td>3.72</td>
<td>46.89</td>
</tr>
<tr>
<td></td>
<td>Control (Conventional)</td>
<td>20.44</td>
<td>5.95</td>
<td>23.10</td>
</tr>
</tbody>
</table>
The result in table 2 above shows that the experimental groups in the three schools type girls alone, boys alone and co-educational(mixed) had higher mean interest scores than those in the control groups.

The result reveals that the mean difference for pre and post interest for both groups in their various schools type are 15.00, 21.63 and 24.57 for the experimental groups and 2.58, 2.46 and 2.66 for the control groups respectively.
Table 3: Analysis of Covariance (ANCOVA) for students mean interest scores by method and school type.

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Square</th>
<th>DF</th>
<th>Mean Squares</th>
<th>F.Cal</th>
<th>Level of Significance</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covariates Pretest</td>
<td>416.970</td>
<td>1</td>
<td>416.970</td>
<td>38.906</td>
<td>0.00</td>
<td>S</td>
</tr>
<tr>
<td>Main Effects</td>
<td>25821.962</td>
<td>3</td>
<td>8607.321</td>
<td>803.111</td>
<td>0.00</td>
<td>S</td>
</tr>
<tr>
<td>Methods</td>
<td>25667.741</td>
<td>1</td>
<td>25667.741</td>
<td>2394.945</td>
<td>0.00*</td>
<td>S*</td>
</tr>
<tr>
<td>School</td>
<td>2.390</td>
<td>2</td>
<td>1.195</td>
<td>0.111</td>
<td>0.895*</td>
<td>NS*</td>
</tr>
<tr>
<td>Control Explained</td>
<td>26385.849</td>
<td>6</td>
<td>4397.642</td>
<td>410.325</td>
<td>0.000</td>
<td>S</td>
</tr>
<tr>
<td>Residual</td>
<td>2100.624</td>
<td>196</td>
<td>10717</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>28486.473</td>
<td>202</td>
<td>141022</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*S= significant, NS= Not significant @0.05 level of probability.
Table 3 cont.

- The result in table 3 above indicated F calculated is 2394.945 while critical value of F is 0.000.
- The level of significance is less than 0.05 level of confidence on which the study was based.
- This shows that there is significant difference between the mean interest scores of control and experimental groups.
Table 3 cont.

- The result in table 3 also showed that the computed F is 0.111 which is not significant at 0.895.
- The value is greater than 0.05 set for the study.
- It therefore concludes that there is no significant difference in the mean interest scores of students in single sex schools and those in co-educational school types.
FINDINGS:

- Table 1: reveals that the use of E-learning (CAI) appears to arouse students' interest in statistics than the conventional approach.
- Table 2: the result shows that the experimental groups in the three different school types have higher mean interest than their counterpart in the control groups.
Table 3: The result in Table 3 shows that there is significant difference in the mean interest scores of control and experimental group which is in favour of the experimental group.

Table 3 also shows that school type have no effect on students as regards to their interest in statistics using E-learning.
RECOMMENDATION:

- Teachers should be exposed to the use of E-learning in teaching and learning by training and retraining them. This will help to keep them abreast of the innovation in teaching and learning.
THANKS:

• THANK YOU FOR LISTENING AND NOT SLEEPING.
• REMAIN BLESSED.