A Comparative Study on the Effectiveness of Traditional and Computer-Assisted Instruction Methods in Determining Students' Achievement in Graph Plotting

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Abstract

The study aimed at examining the effectiveness of traditional and computer-assisted instruction methods in determining students' achievement in graph plotting in Ethiopia East Local Government Area of Delta State, Nigeria. Descriptive survey approach was employed and 140 students was randomly drawn from the senior secondary schools in the area to make up the study sample. The selected students were divided into two groups of 70 students each using stratified sampling. The first group served as the experimental group while the second group served as the control group and the groups was taught graph plotting using computer-assisted instruction and traditional instruction methods respectively. The study took five weeks, and a null and alternative hypotheses was formulated to guide the study. The Teacher Made Test (TMT) on graph plotting

was developed as the instrument of study, and was used to assess students' achievement level on graph plotting across the two groups. A reliability coefficient of 0.8 was yielded for the instrument using Cronbach Alpha. The data obtained from the instrument was subjected to t-test

of independence at $p \leq 0.05$ level of significance, and the results showed that students who received computer assisted instruction had significantly higher improvement in their test scores. The study thus fills a research gap that informs the improvement of the methods employed in teaching graph plotting, thereby enhancing students' performance in secondary school science education. The study therefore recommends the incorporation of computer-assisted instructions in the teaching-learning process of graph plotting in the science education of secondary school students across Delta State, Nigeria.

Keywords: Computer-Assisted Instruction Method; Graph Plotting; Science Education; Students' Achievement; Traditional Instruction Method