

ABSTRACT

The main purpose of the study was to determine the effectiveness of using computers in the teaching of Mathematics to first year secondary school students through two teaching methods: Computer Tutorial Method and Computer Modelling Method.

Specifically, the study aimed at finding out the effectiveness of using computer in the teaching of a computerized unit in Mathematics and its effect on achievement in Mathematics by employing the two methods, and finding out the difference between the two methods. In addition, the study aimed at finding differences between each of the two methods with the Traditional Method of teaching Mathematics and its effect on achievement in Mathematics. Accordingly, five hypotheses were stated.

The study sample consisted of total of one hundred and six (N=106) first year secondary school students, assigned to three groups: 2 experimental groups and one control group. To establish homogeneity of the sample, certain factors such as intelligence, age, previous final score in Mathematics, and socio-economic level were considered.

Two study units were designed for each of the two methods: Computer Tutorial Method (A total 277 frames) and the Computer Modelling Method (a total 12 models). Consequently, the researcher prepared an achievement test, presented it to jury, and later applied it as a pre-and post-test.

Statistical analyses of data were Blake's formula to study the effectiveness of the two methods, One-way Analysis of Variance to determine the effect of treatment, and t-test differences.

Results of the study show that both methods (Computer Tutorial and Computer Modelling with limited participation of the teacher) were effective in teaching Mathematics. The ratios based on Blake's equation were 1.314 and 1.42 respectively. When the experimental groups were tested for difference based on obtained mean scores in the achievement test, a level of .05 significance was found in favor of the second group (Computer Modelling Method). When both methods were each compared with the Traditional Method, results showed, in favour of the Computer Tutorial and Computer Modelling, significance at the level of 0.01.

It appears then that the Computer Tutorial and Computer Modelling are effective methods in teaching Mathematics to first year secondary school students.

The researcher justifies the effectiveness of the two methods by highlighting the advantages of computer over the traditional method of teaching Mathematics.

A number of recommendations are suggested among which are the need for teacher training in the use of computer and its potential in developing creativity, developing tutorial software, etc. Suggestions for further research include - among others - attitudes towards the use of computer in general and its use in teaching Mathematics in particular to a group of samples other than the one used in this study.