

Effects of Advance Organizer Strategy During Instruction on Secondary School Students' Mathematics Achievement in Kenya's Nakuru District

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Abstract.

Students have continued to perform poorly in KCSE examinations in certain mathematics topics taught in secondary schools in Kenya. One such topic is commercial arithmetic. Successful teaching of mathematics depends partly on correct use of teaching methods in classroom settings. This study sought to examine how the use of advance organizers during instruction affects students achievement in commercial arithmetic. There is however inadequate documented information in research conducted in Kenya on the effects of the use of advance organizers on students' achievement in mathematics. The purpose of this study was therefore to develop and use advance organisers to augment the teaching of commercial arithmetic and then investigate its effects on student achievement in the topic. A simple random sample of four provincial mixed-sex secondary schools in Nakuru district was obtained. The study was carried out in a mathematics classroom setting. Solomon four-group design was employed. The experimental groups received the advance organisers as treatment and two control groups were taught in the conventional way. The sample size was 142 students. A mathematics achievement test (MAT) was used. The instrument was pilot tested to ascertain its reliability. The validity of the instrument was checked by experts from the Department of Curriculum and Instruction. The MAT was administered to two groups before the teaching of the topic and then to all four groups after learning the topic of commercial arithmetic. Statistical package for social sciences (SPSS) was used for data analysis. Descriptive statistics (mean, standard deviation, percentages) and inferential statistics (ANOVA, ANCOVA and t-test) were used for data analysis. The level of significance for acceptance or rejection of hypothesis was set at 0.05 α -level. The results indicated that students taught using advance organisers had significantly higher scores in MAT than those taught in the conventional way. Gender did not affect achievement. Major recommendations from the study are that teaching using advance organisers should be included in the syllabus during training and in-servicing of teachers, and teachers should be encouraged to use advance organisers when teaching mathematics where applicable.

Keywords: Advance organiser strategy, Mathematics achievement

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