

Effects of Advance Organizer Teaching Approach on Secondary School Students' Achievement in Chemistry in Maara District, Kenya

Professor Samuel W. Wachanga, Antony Mugiira Arimba and
Prof. Zachariah K. Mbugua

ABSTRACT

Students' achievement in Kenya Certificate of Secondary Education (KCSE) Chemistry examinations in Kenya is below average. This could be due to among other factors, the teaching methods used by teachers. There is need for teachers to use teaching methods that can enhance students' academic achievement in Chemistry in secondary schools. This study investigated the effects of Advance Organizer Teaching Approach on students' achievement in Chemistry. Quasi-experimental research was employed since intact chemistry classes were involved. This was because school authorities do not allow classes to be broken and reconstituted for research purposes. Solomon's Four Non-Equivalent Control Group Design was used. The study involved secondary schools in Maara District, Kenya. The target population was 13,036 secondary school students while the accessible population was 3,540 Form Three chemistry students. Purposive sampling was used to select four district co-educational secondary schools in Maara District. The sample size involved 161 Form Three chemistry students who were in four groups E1, E2, C1 and C2. Chemistry Achievement Test (CAT) was used for data collection. The CAT was administered to groups E1 and C1 before teaching started. The experimental groups were taught using the Advance Organizer Teaching Approach (AOTA) while the control groups were taught through Regular Teaching Methods (RTM). The CAT was pilot tested to determine its reliability, while its validity was ascertained by experts from Department of Education of Chuka University College. At the end of eight weeks of teaching the CAT post-test was administered to the four groups. Statistical package for social sciences (SPSS) was used for data analysis. Descriptive statistics (mean, percentages, and standard deviation) and inferential statistics (ANOVA, ANCOVA, and t- test) were used for data analysis at $\alpha = 0.05$ level. The study found out that there were significant effects of the use of advance organizers in Chemistry learning. Students who were taught using AOTA achieved better in Chemistry learning than those who were taught through RTM. The findings of this study also indicate that gender has no significant effects on CAT scores in Chemistry learning when AOTA is used. Based on this study teachers and curriculum developers should adopt and strengthen the use of advance organizers as a teaching strategy to enhance Chemistry learning by students.

KEYWORDS: Advance Organizer Teaching Approach, Chemistry Achievement Test, Regular Teaching Method, students' chemistry achievement.

Fulltext: <https://pdfs.semanticscholar.org/8a4e/ff4a01d7b926c647dbf8799d648c515a7b77.pdf>