

Effects of Computer-Based Simulations Teaching Approach on Students' Achievement in the Learning of Chemistry among Secondary School Students in Nakuru Sub County, Kenya

Mihindo W. Jane, Wachanga S.W. and Anditi Z. O.

Abstract

Science education should help develop student's interest in science as today's society depends largely on output of science and technology. Chemistry is one of the branches of science. Chemistry education helps to expand the pupil's knowledge of the universe and of his/her position in it. It helps in the appreciation and enjoyment of nature and life. Chemistry also prepares learners for professional careers in such fields as medicine, biotechnology, agriculture and pharmacy. Despite the importance attached to Chemistry, students' performance in the subject at the national examinations in many countries Kenya included has remained poor. The poor performance can be attributed to type of teaching method among others factors. Computer-based instruction may help address this problem of teaching method. However there is little information on how computer-based learning as a teaching method in chemistry would affect learners' achievement by gender. In an attempt to address this issue this study therefore aimed at finding out effects of Computer-Based Simulations on secondary schools students' achievement in Chemistry in Kenya. The study involved quasi-experimental research in which the researcher used Solomon Four Non- Equivalent Control Group Design. Four co-educational schools in Nakuru East Sub-County were purposively selected and a sample size of 175 students participated in the study. In this study data were collected using instruments Chemistry Achievement Test (CAT) to assess the students' achievement level. The findings of the study were there was statistically significant difference in Chemistry achievement of students who are taught through CBS teaching approach and that of those taught through regular teaching method. There is no statistically significant difference in Chemistry achievement between boys' and girls' taught through CBS teaching approach. It was therefore concluded that CBS has a positive and significant contribution to the understanding of chemistry concepts and principles as reflected by the higher performance of students taught using CBS than their counterparts taught using RTM. Gender has no effect on students' achievement in Chemistry when they are taught through CBS.

Keywords: Chemistry, Science, Computer-based Learning, Gender and Achievement

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