

Influence of School Characteristics on the Achievement of Secondary School Chemistry Students in the Cognitive Science Process Skill of Evaluation in Kenya

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Abstract

Chemistry is one of the subjects that students sit for in the Kenya Certificate of Secondary Education (KCSE). The attainment of students in chemistry in KCSE has been quite low. An analysis of the past Chemistry examination papers taken in KCSE reveals that the papers test students' competencies in various aspects of Cognitive Science Process Skill of Evaluation (CSPSE). It was hypothesized that school characteristics could be influencing students' acquisition of various aspects of CSPSE. The school characteristics investigated were social set up (single-sex and co-educational schools) and school location (rural and urban schools). The aspects of CSPSE investigated were: reformulation of scientific statements, evaluation of experimental procedures, evaluation of inferences from scientific data, and evaluation of scientific arguments. Cross-sectional survey research design was used in this study. Cognitive Science Process Skills Test (CSPST) was constructed and administered to a stratified random sample of 386 Form Three Chemistry students drawn from Public County Secondary Schools in Rift Valley Province of Kenya. Analysis of variance (ANOVA) was used to analyze the data. Hypotheses were tested at $\alpha = 0.05$ level of significance. The findings of the study show that students from single-sex secondary schools performed significantly better than their counterparts from co-educational schools in all the categories of CSPSE that were investigated. The school location did not have a significant influence on students' performance on CSPSE. The findings of this study are expected to inform the education planners and teachers of the influence of school characteristics on students' performance on CSPSE.

Keywords: Influence, School characteristics, Cognitive science process skill, Evaluation, Achievement

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