

Student, Teacher and School Related Variables as Determinants of Chemistry Achievement in Kenya: A Case of the Mole Concept

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Abstract

The Mole Concept is a threshold Concept and has often been referred to as an area of troublesome knowledge. The study constructed and tested a model for providing a causal explanation of secondary school achievements in Mole Concept area of chemistry in terms of student variables which emphasized gender, spatial ability, mathematical ability, socioeconomic status, attitude; teacher's variables considered as mode of instruction, teaching experience, teaching qualifications, teacher attendance of inset while School variables included resources. A descriptive survey design was adopted for the study. The population was made up of three hundred and eighty four form four secondary school students and their teachers from thirty stratified selected schools. Five sets of instrument were used and these included Chemistry Teachers' Questionnaire (CTQ), Mole Concept Students Attitude Scale (MCSAS), Mole Concept Achievement Test (MCAT), Mole Concept Document Analysis Sheet (MCDAS) and Mole Concept Lesson Observation Schedule (MCLOS). The results showed that 62.30% of the variability in students' achievement in chemistry (X11) was accounted for by all the ten predictor variables when taken together. Recommendations based on the importance of these variables were then highlighted particularly the abilities in Spatial and Mathematical abilities.

Keywords: Student Variables, Teacher Variables, School Variables, Mole Concept

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