

UTILISING CONTEXT-BASED LEARNING TO PROMOTE STUDENTS' CONCEPTUAL UNDERSTANDING AND PERFORMANCE IN ORGANIC CHEMISTRY

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ABSTRACT

Organic chemistry is believed to be one of the difficult branches of chemistry taught at the senior high school level, especially in Ghana. This study investigated context-based learning approach in promoting students' conceptual understanding and academic performance in organic chemistry. The context of the learning approach in this study was within the students' immediate environment. A quasi-experimental design, specifically, a two-group pre-test and post-test nonrandomized control group design was used in this study. Purposive sampling technique was employed to select 80 research participants, who were senior high school students from two selected schools organised into intact classes at the time of this study. Organic Chemistry Achievement Test (OCAT) was the instrument used to collect quantitative data from the participants. The OCAT developed by the researchers was in the form of a pre-test and a post-test. The reliability coefficients for the pre-test and the post-test were 0.78 and 0.81 respectively. The data were analyzed using descriptive statistics (line graphs) and an independent-samples t-test. The findings from the study showed that context-based learning significantly improved students' conceptual understanding and academic performance in organic chemistry. It was revealed that the magnitude of the effect on students' academic performance in organic chemistry due to the context-based learning was large. Students had a better understanding and appreciation of the concepts in organic chemistry as the teaching approach was contextualised within their immediate environment through collaboration, critical thinking and creativity. Conclusion of this study indicates that teaching organic chemistry concepts within the context of learners' immediate environment promotes understanding and appreciation of the subject leading to improved performance. On the other hand, traditional teaching method remains an ineffective teaching pedagogy for enhancing students' conceptual understanding and performance in organic chemistry among senior high school students in the selected schools where this study was conducted. It is recommended that chemistry teachers should contextualise the teaching of chemistry by taking advantage of students' immediate environment and what is already known to them to promote better understanding and appreciation of the subject.

Keywords: Improved performance, context-based learning, critical thinking, environment.