

ABSTRACT

Effects of Two Teaching Strategies under Three Learning Modes on Eighth Graders' Knowledge of Nutrition and Plant Reproduction

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This study investigated the effects of concept mapping and practical work under pure cooperative, cooperative-competitive and whole class interpersonal competitive learning modes on 8th graders' knowledge of nutrition and plant reproduction, attitudes to integrated science and self-esteem. This is in response to the call for the need for the use of more effective instructional heuristics and classroom interaction patterns for students' meaningful learning of integrated science concepts, and improved students' self-esteem and attitudes to integrated science. The study engaged 932 subjects from 14 mixed Comprehensive High Schools randomly selected from two parishes in Jamaica. The instruments used were Integrated Science Performance Test, Attitudes to Science Questionnaire and Self-esteem Scale.

The results indicated that the experimental group subjects performed statistically significantly better than their control group counterparts in the posttest (a) on nutrition and plant reproduction, (b) on their attitudes to integrated science and (c) their self-esteem. The pure cooperative learning condition offered more promise in reducing the level of students' alternative conceptions in nutrition and plant reproduction. Students' attitudes to integrated science and self-esteem were most improved under the cooperative-competitive learning mode. The whole class interpersonal competitive learning mode contributed most to the students' posttest performance on nutrition and plant reproduction. There were no statistically significant differences in the subjects' posttest (a) knowledge of nutrition and plant reproduction; (b) attitudes to integrated science and (c) self-esteem based on their gender and SEB.

It is recommended that (a) grade 8 integrated science teachers should use concept map and practical work heuristics, to assist their students to learn more meaningfully, reduce their level of alternative conceptions on the two concepts investigated, improve their self-esteem and attitudes to integrated science (b) these instructional heuristics should be employed under the three learning modes.

Keywords: Okechukwu Ugwu; Teaching strategies and science knowledge.