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ABSTRACT

The aim of the study is to use the STSE approach in teaching an environmental science course. STSE is an approach using the interactions of four important factors namely, science, technology, society and environment. Using activities derived from the local environment, a learning climate unique to the STSE approach was developed and used to determine its influence on academic achievement and environmental science self-efficacy of students as well as the sociocultural perspectives of the students. The study further aimed to determine what sociocultural perspectives of nonscience students will surface when exposes to the STSE approach.

Quantitative and qualitative designs were used in the study. An experimental design using Solomon's Four Group Design was used for the quantitative part, while observation interview of students was used in the qualitative part.

The STSE approach was used in an Environmental Science course for the first year nonscience students. Effect on academic achievement was determined using two-way ANOVA on the posttest scores of four groups, while the effects on efficacy and sociocultural perspective were determined through the t-test of weighted means derived from the answers to the questionnaire. Observation and focused group interview were used for qualitative analysis of lessons especially for efficacy and sociocultural perspectives.

The STSE approach is found to be effective in improving the academic performance of the students who were exposed to the approach as shows by the significant difference in the posttest scores between two sections which used the approach and two other sections which did not use the approach, as measured by two-way ANOVA,

The STSE approach is also responsible for the significant difference in the environmental science self-efficacy of students who used the approach over the students who did not use the approach as measured by the t-test.

In the analysis of the sociocultural perspective, the most dominant perspective that surfaced was the political perspective where the government is given primary responsibility in environmental protection, conservation and sustainable development. Moral values associated with the sense of what is right in terms of environmental concerns and population issues also surfaced in many discussions. Religious values though that were associated with cultural practices of farming, population and environmental conservation did not surface much in the discussions.

Comparing the difference of the answers to the sociocultural questionnaire, no significant difference is shown indicating that culture is difficult to change and that group culture is strong especially in one school.

On the basis of the findings, the STSE approach is an effective teaching approach for the improvement of academic achievement of nonscience students in Environmental Science. The STSE approach is also effective in improving the self-efficacy of students in an Environmental Science course for nonscience students.

As observed, political and moral sociocultural perspectives are more dominant than the religious perspective. Sociocultural perspectives of students in the nonscience course using the STSE approach and those using the non-STSE approach do not differ significantly as they exhibit common ideas and values.