WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

Guided and Open Inquiry: Their Effects on Junior High School Students' Scientific Creativity, Science Process Skills and Problem-Solving Performance

A Thesis Presented to the

Faculty of the Graduate School

College of Education

West Visayas State University

La Paz, Iloilo City

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts in Education

(Physics)

by

Hope M. Cabrera

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APPROVAL SHEET

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Abstract

This quantitative, quasi-experimental research was conducted to determine the effect of Guided and Open Inquiry on Junior High School students' scientific creativity, science process skills and problem-solving performance in Physics. Two (2) groups comprising thirteen (13) students each were involved in this study. The research used the counter-balance method due to the small number of participants. The pre- test and post test method of research used validated researcher-made instruments namely: Scientific Creativity Test (SCT), Science Process Skills Test (SPST) and Problem- Solving Skills Test (PSST). The statistical tools used were mean and standard deviation for descriptive statistics, while for the inferential statistics, Mann Whitney U-Test, Wilcoxon Signed Rank Test and t-test set at 0.05 alpha level of significance. The findings showed that before the intervention, the learners' scientific creativity and science process skills in guided and open inquiry groups were below average while their problem-solving performance was of low level. After the intervention students in both groups had increased their level of scientific creativity to average level while their science process skills and problem-solving skills increased to above average level. There was no significant difference in the pretest and posttest mean scores in the scientific creativity, science process skills and problem solving performance between guided and open inquiry which showed that both groups had comparable scientific skills prior and after

exposure to the intervention. These results also revealed that both inquiry method have similar effects on enhancing the students' scientific skills and was supported with the findings that there was no significant difference in the mean gains in the scientific creativity, science process skills and problem-solving performance between guided and open inquiry groups. Learners perceived guided and open inquiry methods as teaching strategies which developed their scientific creativity, science process skills and problem solving performance for they fostered skills such as independence, critical thinking, communication and collaboration. The use of guided and open inquiry approaches has aroused the natural curiosity of the students to learn through new experiences and has allowed them to gauge their abilities in acting and thinking like scientists. The inquiry methods had also motivated the learners to be responsible for their own learning which was manifested in their independence in the learning process and the significant improvement in their scientific skills after exposure to the inquiry methods. Finally, the result of the study implied that employing guided and open inquiry methods is capable of holistically improving the students' scientific creativity, science process skills and problem- solving skills through a learner-centered approach.

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