TEACHING ALGEBRA WITH GEOGEBRA

A Bachelor's Thesis

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J.H. CERILLES STATE COLLEGE DUMINGAG CAMPUS

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Degree Bachelor of Secondary Education

by

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ABSTRACT

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Summary

This study was conducted to investigate the effectiveness of GeoGebra software as a teaching tool in teaching Algebra with the use of problem solving method and deductive method among 30 Grade 9 students in JHCSC Dumingag Campus High school Laboratory, Dumingag, Zamboanga del Sur, School Year 2018-2019.

Quasi-experimental research design was employed in the study. Participants were non-randomly assigned (according to their grades) to the experimental group 2, experimental group 1 and control group and pretest-posttest was administered in every trial run. Students' performance in the pretest and posttest were used as basis in determining the effectiveness of GeoGebra software as a teaching tool in Mathematics. Descriptive and inferential statistics were used in statistical treatments of data.

Results of the study revealed that the student participants in all groups have poor learning performance before applying the treatment in all trials but after applying the treatment, learning performances of the student participants fairly improved during the first trial run. On the other hand, during the second trial run, experimental group 2 demonstrated an outstanding performance, experimental group 1 manifested satisfactory performance while the control group showed a fairly satisfactory performance. The student participants are vitalized to learn when Algebra is taught through GeoGebra Software and traditional instructional materials in all trials.

In general, the posttest results of all groups was insignificant in the first trial run but a greater posttest mean of the two experimental groups still proved that the participants performed better than the control group. However for the second trial run, it was found that teaching Algebra through GeoGebra software was indeed very effective than teaching Algebra through

traditional instructional materials. This also concluded that teachers must use direct instruction in teaching Algebra through GeoGebra Software. The study shows that the participants performed better in all groups in the Deductive method than the Problem Solving method but the GeoGebra Software should be taught through discovery approach because of its amazing features and graphics (Tran, Nguyen, Bui, and Phan, 2014).

Hence, the study recommends that school administrators may encourage the teachers to use GeoGebra software as a teaching tool in teaching Algebra provided that the students are computer literate and digital devices are already available. Otherwise, the objectives of learning using GeoGebra cannot be achieved. Finally, the study also recommends that future researchers may conduct similar studies for other subjects or to other participants with sufficient time for every trial having different cognitive ability in Mathematics to a bigger scope.