A Comparative Study of the Effects of Collaborative Learning and Guided Discovery Method on Students' Achievement in Teaching Mathematics at the Middle School Level

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Abstract

The major purpose of this research is to study the effects of collaborative learning and guided discovery method on students' achievement in teaching mathematics at the middle school level. The posttest only control group design was used in this study. The instrument used in the study was a posttest. After the treatment, posttest was used to measure students' mathematics achievement. In this experimental study, the subjects were Grade Five students who were selected from No. (1) Basic Education High School, Hlaing and No.(2) Basic Education High School, Insein at Yangon Region. The sample size was (108) Grade Five students from selected schools. There were two experimental groups and one control group. The subjects from one experimental group were taught by using collaborative learning and the other was taught by using guided discovery method. The subjects from the control group were taught by using formal teaching . After that, a posttest was administered to three groups. One-way ANOVA was used to analyze whether there were significant differences among the three groups. The results showed that there were significant differences among the three groups (collaborative learning, guided discovery and formal groups) in all selected schools (for BEHS(1), Hlaing, $F = 28.004$, $p < .001$ and for BEHS (2), Insein, $F = 73.668$, $p < .001$). The results of the study indicated that the collaborative learning was the best method followed by the guided discovery method and formal teaching method. Both collaborative learning and guided discovery method have significant effects on the overall mathematics achievement of the students. According to the result findings, the collaborative learning will be more suitable than guided discovery method and formal teaching method in mathematics teaching.

Key words: Collaborative Learning, Guided Discovery, Formal Teaching

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