

Fostering Students' Creativity through Van Hiele's 5 phase-Based Tangram Activities

Abstract

The aim of this study was to determine whether Van Hiele's 5 phase-based tangrams activities could help to foster creativity among Grade Three primary school students. Students' creativity was investigated in terms of Torrance's Figural Test of creative thinking: Fluency, Originality, Elaboration, Abstractness of title, and Resistance to a premature closure. The study further examined students' responses to learning experience in tangram activities. A pre-test and post-test single group experimental design was employed in the study. This research design involved assessment on the students' creativity based on the figural constructing task which was implemented prior and subsequent to the intervention. A total of 144 Grade Three students took part in the study. The students learned Two-dimensional geometry and Symmetry through the Van Hiele's 5 phases of learning using tangram. The intervention took place for 3 hours. Paired samples t-tests which compared the mean scores of pre- and post- figural test were computed to determine if a significant difference existed. The results showed that there were significant differences in mean scores between pre- and post-figural test. The in-depth analysis about the five dimensions of Torrance's creativity found that the applied intervention was only significant in improving students' elaboration, no significant changes in students' fluency and abstractness of title, and significant dropping performance in originality and resistance to premature closure. Generally, students felt that the tangram activities had provided an opportunity for them to think creatively. In conclusion, this study shows that the tangram, when integrated with van Hiele's five Phases of learning is able to foster student's creativity in geometric lessons.