The effects of using GeoGebra teaching strategy in Malaysian secondary schools: A case study from Sibu, Sarawak

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Abstract

As computer-based technology becomes an important component of any modern curriculum, the continuing challenge is to scrutinize the applications of the instructional technology and to identify whether these tools can give good benefit to students’ learning process. This study examined the effects of using GeoGebra Teaching Strategy in learning Circle III topic on Malaysian Secondary Form Four students’ performance and attitudes towards this teaching strategy. A quasi experiment of non-equivalent pre-posttest control group design study was conducted in a school in Sibu, Sarawak. One control group (n = 17) and one experimental group (n = 29) were randomly selected from Form Four classes. The experimental group underwent learning using GeoGebra Teaching Strategy meanwhile the control group underwent learning using Conventional Teaching Strategy. The Circle III Achievement Test and the Attitude Questionnaire were used as instruments in this study. The data were analyzed using one way ANCOVA and one sample t-test. The analysis showed that there was no significant difference between mean performance scores of students in experimental and control groups. However, the experimental students showed positive attitudes towards using GeoGebra software while learning Circle III topic. This indicated that not only could this strategy be utilized in learning mathematics but also in enhancing Malaysian students’ performance in learning mathematics in the long run.

Keywords: conventional teaching strategy, GeoGebra teaching strategy, human capital, Quasi-experiment non-equivalent pre-posttest control group design, Circle III topic, Malaysian Secondary Mathematics