

## **Utilization of variation theory in the classroom: effect on students' algebraic achievement and motivation**

### **ABSTRACT**

This study investigates the effect of utilizing Variation Theory Based Strategy on students' algebraic achievement and motivation in learning algebra. The study used quasi-experimental non-equivalent control group research design and involved 56 Form Two (Secondary Two) students in two classes (28 in experimental group, 28 in control group) in Malaysia. The first class of students went through algebra class taught with Variation Theory Based Strategy (VTBS) while the second class of students experienced conventional teaching strategy. The instruments used for the study were a 24-item Algebra Test and 36-item Instructional Materials Motivation Survey. Result from analysis of Covariance indicated that experimental group students achieved significantly better test scores than control group. Result of Multivariate Analysis of Variance also shows evidence of significant effect of VTBS on experimental students' overall motivation in all the five subscales; attention, relevance, confidence, and satisfaction. These results suggested the utilization of VTBS would improve students' learning in algebra.

**Keyword:** Algebraic achievement; Mathematics; Motivation; Rural; Urban; Variation theory