

Effect of the ASEI-PDSI Approach to Teaching on Secondary Mathematics Learning Outcomes

Katiambo Dorcas, Stanley Mutsotso and Duncan Wasike
Kibabii University
dorcaskatiambo@gmail.com
smutsotso@kibu.ac.ke
duncanwasike@yahoo.com

Abstract

Mathematics being a core subject in the Kenyan secondary school curriculum, it is quite crucial for students' admission to scientific and technological professions in higher learning institutions, in line with vision 2030. Due to continual poor performance in the subject the Kenyan government through the Strengthening of Mathematics and Science in Secondary Education (SMASSE) project came up with a grand plan to help improve the teaching of science and mathematics in Kenya and many other African countries known as the Activity, Student-centred, Experiment and Improvisation – Plan, Do, See and Improve (ASEI-PDSI) approach. Despite the government's heavy investment in this project, the effect of this ASEI-PDSI approach on mathematics learning outcomes is yet to be fully realized. Effective implementation of the approach by teachers to teaching should definitely yield better learning outcomes in secondary mathematics in Kenya. This paper therefore examines the effect of the ASEI-PDSI approach on mathematics learning outcomes. The paper is based on a study that investigated classroom interaction patterns and the learning of secondary mathematics in Kenya. The study was carried out in Mt. Elgon sub-county and an experimental research design was adopted. This study targeted teachers of mathematics and their form three students. Data was collected by use of students' achievement tests, a classroom observation schedule and questionnaires. They were piloted and validated for reliability and data were analysed both qualitatively and quantitatively. The SPSS statistic was applied on the quantitative data to help establish the association between variables in the study. The main finding of this study was that there was a remarkable difference between the experimental and control groups in the test performance, with the later doing better. Teachers who can impress the ASEI-PDSI approach and implement effectively will easily post better learning outcomes in mathematics. It is expected that the findings of this study will give an insightful reference to many education stakeholders; including teachers of mathematics and the quality assurance and standards officers, to help improve the teaching and learning of mathematics and more so promote good performance and learning outcomes in secondary school mathematics in Kenya.