

The Level of Implementation of ASEI/PDSI Classroom Practices in Science Subjects: A Case of SMASSE Project, Kenya

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Abstract

A lot of time, effort and resources are invested to put innovations in education into practice. In far too many cases, these innovations seem to fade away at different stages and for various reasons. Some innovations may be adopted by implementers in ways that undercut the design principle or, they may not provide students with sufficient exposure to the activities that produce learning gains. In 1998, Kenya adopted the Strengthening of Mathematics and Sciences in Secondary Education (SMASSE) in-service training programme, using a constructivist methodology to improve science performance. The emphasis was on Activity focused methods, Student-centered activities, Experimenting and Improvisation (ASEI) through the Plan, Do, See and Improve (PDSI) paradigm. The main objective of the study was to establish if there was a significant difference in the levels of implementation of the ASEI/PDSI classroom practices in the various science subjects, namely Physics, Chemistry and Biology. The survey design was used for a sample of 68 head teachers, 147 science teachers and 16 trainers. The instruments of the study were questionnaires, interviews and lesson observation schedules. The study established that the majority of the teachers (75%) were partial implementers and only (5%) were full implementers. The Fisher Exact Test result for the level of implementation among the science subjects was: Biology and Chemistry p-value $0.002 < 0.05$, Biology and Physics p-value $0.33 > 0.05$, and Chemistry and Physics p-value $0.01 < 0.05$. The conclusion was that the level of implementation of the ASEI/PDSI classroom practices was partial, partly due to the heavy teaching load. It was therefore recommended that the government employ more teachers to facilitate adequate preparation for ASEI lessons and apply learner-centered approaches that the innovation recommends.

Keywords: Implementation, In-service training, Sciences, Innovation, Learner –centered methodologies

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