IMPLEMENTATION OF ASEI-PDSI APPROACH IN MATHEMATICS LESSONS IN NYAMAIYA DIVISION, NYAMIRA COUNTY, KENYA.

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Strengthening of Mathematics and Sciences in Secondary Education (SMASSE) training is an educational innovation and an initiative of the government of Kenya with support of the Japanese International Cooperation Agency (JICA). It was launched in 1998 out of the need to improve performance in mathematics and science subjects. This study assessed the implementation of the Activity, Student, Experiment, Improvisation- Plan, Do, See, Improve (ASEI-PDSI) approach in mathematics lessons in secondary schools of Nyamaiya Division, Nyamira District. The ASEI-PDSI approach is an innovative approach of teaching and learning mathematics and sciences championed by the Strengthening of Mathematics and Science in Secondary Education (SMASSE) In-Service Education and Training (InSET) Programme. The specific objectives of the study were: to establish the extent to which mathematics understand the ASEI-PDSI approach; establish the extent to which mathematics use the ASEI-PDSI approach; to determine the extent to which secondary school head teachers supervise the implementation of the ASEI-PDSI approach; and to establish the constraints encountered during implementation of the ASEI-PDSI approach.

The study adopted a descriptive survey design. The location of the study was Nyamaiya Division, Nyamira District. The study population consisted of secondary school mathematics teachers who had completed the four cycles of the SMASSE InSET, and all secondary school head teachers of Nyamaiya Division. This yielded a target population of 36 subjects. The study sample comprised 20 mathematics teachers who had completed the four cycles of the SMASSE InSET, and 14 head teachers of secondary schools of Nyamaiya Division. This yielded a study sample of 34 respondents, representing 94.4 % of the target population. A questionnaire for mathematics teachers and head teachers, and a lesson observation rating scale were used to collect data. Piloting was done in one of the schools randomly selected in Nyamaiya Division. The test-retest method was used to test the reliability of the research instruments while the researcher’s supervisors were requested to determine the validity of the research instruments. Data was analyzed descriptively using means, averages, percentages and frequencies. The major findings of the study were: mathematics teachers have a high understanding of the ASEI-PDSI approach; the teachers’
use of the ASEI-PDSI approach in their lessons is inadequate; head teachers rarely supervise the implementation of the ASEI-PDSI approach in mathematics lessons; and implementation of the approach faces constraints such as pressure to cover the syllabus and lack of adequate time for lesson preparation. The conclusion of the study was that the implementation of the ASEI-PDSI approach in mathematics lessons is inadequate. The major recommendations of the study were: follow-up efforts should be made to further improve teachers’ understanding in using the ASEI-PDSI approach; the Ministry of Education should organize an INSET focusing on components of the ASEI-PDSI approach whose extent of implementation was inadequate; and an INSET should be organized for secondary school headteachers so that they could be taken through the requirements of supervision with regard to the implementation of the ASEI-PDSI approach.