Effects of smasse programme in service education and training

Education

Strengthening of Mathematics and Science in Secondary Education (SMASSE) In – Service Education and Training (INSET) programme is one of the strategies that the Ministry of Education put in place to strengthen the teaching and learning of Mathematics and Science in secondary schools in Kenya.

This study sought to establish the extent to which teachers were practicing the principles, skills and knowledge they learnt in the SMASSE INSET training programme in the course of their teaching and whether there is any relationship between teacher characteristics and the level of adoption of principles, skills and knowledge learnt in the SMASSE INSET programme in secondary schools in Koibatek District, Kenya. The study adopted an ex post facto research design. The targeted population included 150 Mathematics and Science teachers from 23 secondary schools.

A sample of 22 Principals and 110 teachers was drawn from 22 schools. Data were collected using two sets of structured questionnaires (teachers and principals). Reliability was tested using Cronbach coefficient alpha to determine the internal consistency of the questionnaire items; A Cronbach’s Coefficient Alpha of 0. 8139 was obtained.

The collected data were processed and analyzed using descriptive and inferential statistics. The descriptive statistics included frequencies, percentages and means. Inferential statistics using chi-square and Spearman Rank correlation coefficient were used and tested at ? = 0. 05 significance level. Analysis was done using Statistical Package for Social Sciences (SPSS). The study found that teachers implemented the principles, skills and knowledge they learnt in the course of their teaching and that individual

teachers' characteristics do not influence the adoption of SMASSE INSET. The study recommends that Headteachers should put in place mechanisms in their schools to ensure that teachers implement all the principles, skills and knowledge learnt from SMASSE INSET.

There is also need for schools to take advantage of the high level of adoption of the SMASSE INSET to encourage more students to enroll and improve their academic performance in these subjects. Background Information Teachers are probably the most important human resource a country has. This is because all efficient human capital development depends partly on the quality and effectiveness of teachers (Okumbe, 1999). This quality and effectiveness of teachers would be a function of their personal talents and training.

According to Moraga (1983), teacher training is one of the most important aspects about curriculum development and implementation in any education system. Ideally, the training of teachers should have two phases: pre-service training followed by in-service training. Assistance for Development of Education in Africa (ADEA) states in one of its 2005 newsletter that adequate pre-service teacher training notwithstanding, the emerging consensus is that the pre-service teacher training is just sufficient for an orientation of the teacher into the profession; the real teacher is gradually formed in the classroom (ADEA, 2005).

Pre-service teacher education is aimed at introducing prospective teachers to the fundamental knowledge of teaching; development of good attitudes towards the teaching profession; introduction of the prevailing program and some basic theories of teaching skills before assuming the position.

However, pre-service teacher training is not considered to be adequate enough for a trainee to carry out the duties of the teaching profession for long (ADEA, 2005; Moraga, 1983).

ADEA (2005) asserts that Mathematics and Science education, especially at the secondary level, is a prerequisite for industrial and technological advancement. In the past, great effort has gone into ensuring that adequate qualified teachers and sufficient equipment and material are provided to schools, but in most cases, they remain inadequate in most African Countries (ADEA, 2005). Even where they are adequate, the quality of student achievement in Mathematics and Science education is not always high.

Attention is thus drawn to what classroom practices, utilisation of available equipment and materials and approaches and methodologies that are employed in content delivery. Providing opportunities for teachers to share experiences and to mentor each other, to update their skills and interact with innovative approaches and practices that create interest and inspire confidence in learners is a critical component of the

answer to Mathematics and Science education problem. This is the basis for existence of In-service Education and Training (INSET) for Mathematics and Science teachers (ADEA, 2005; Moraga, 1983). INSET can be organized for a variety of reasons such as certification of untrained teachers, introduction of new curriculum or teaching methodology, upgrading the content, introducing a new supervisory system amongst other reasons (Thuku, 2003). Donoughue et.

al (1981) states that an INSET has an important part to play in educational innovation. They argue that INSET is one of the means by which schools can be innovative. Ray Bolan states that INSET has received attention for three reasons. One reason is its potential for stimulating professional development; the second one is that INSET can improve School practice, and the third reason is that INSET may be a viable strategy for implementing social policy (Hopkins, 1986).

According to Strengthening of Mathematics and Science in Secondary Education (SMASSE, 2003), the objectives of Mathematics and Science teaching in Kenya have largely not been achieved as indicated by the poor performance of the students in national examinations. As an intervening measure to this poor performance, the strengthening of Mathematics and Science in Secondary Education (SMASSE) project was started as a joint venture between the government of Kenya through the Ministry of Education Science and Technology (MOEST) and the government of Japan through Japan International Cooperation Agency (JICA).

At its inception, SMASSE targeted continuing education for teachers of Mathematics and Science, but has since expanded to include In-service Education and Training of Secondary School Headteachers, Inspectors of Schools, District Education Officers, tutors of Mathematics and Science in Secondary School Teacher Training Colleges and tutors at Technical and Vocational Institutions (ADEA, 2004). Statement of the Problem SMASSE INSET programme is one of the strategies that the Ministry of Education put in place to strengthen the teaching and learning of Mathematics and Science in secondary schools in Kenya.

However, the effects of this strategy had not been documented despite the high premium that has been placed on it as evidenced by the amount of time as well as human and capital resources invested in it. The question that arose is whether the SMASSE INSET programme has had any effect on the teaching and learning of Mathematics and Science in the secondary schools whose teachers had gone through the programme. This study therefore sought to establish the level of adoption of the principles, skills and knowledge learnt by the teachers during the SMASSE INSET in secondary schools in Koibatek district, Kenya.