

## Abstract

This paper examines multi-site cases of in-service teachers' classroom practices and experiences about chemistry unit lesson planning and implementation following the Strengthening of Mathematics and Science in Secondary Education (SMASSE) professional development programmes in Kenya. A descriptive comparison was made of chemistry district in-service educators in two districts in four different settings (boys' boarding, girls' boarding, mixed boarding, and mixed day schools). The study found that participants prepared student-centred lesson activities, improvised teaching/learning materials, and conducted small-scale experiments in areas involving dangerous reactions. They enhanced their lesson planning and teaching skills in the areas of the periodic table, the "mole concept," electrochemistry and organic chemistry (the satisfiers or benefits from the In-service education). Participants were dissatisfied because of increased school workloads and not being compensated for implementing district in-service education programmes during the 5-year project duration. Implementation of inquiry-based student activities and improvisations in chemistry was hindered by national examinations which do not contain items from such areas.