

## **ABSTRACT**

Teacher Education in Sub-Saharan Africa (TESSA) is a research and development initiative creating Open Educational Resources (OERs) for teachers and teacher educators in Sub-Saharan African countries. The project focuses on interactive pedagogical skills for Teacher Education programmes. It seeks to promote effective pedagogy through interactive curriculum materials intended to enhance learners' participation in the learning process. TESSA Secondary Science was initiated in 2010 following the success of TESSA Primary Project to support pre-service, in-service and practicing secondary science teachers. TESSA Secondary Science is the focus of this paper. The activity-based TESSA OERs focus on five themes; probing students' understanding, making science practical, making science relevant and real, problem solving and creativity, and dealing with challenging concepts. In Egerton University, Kenya the TESSA materials are used by Science Teacher educators to enhance pedagogical skills of pre-service teacher trainees during subject methods training, micro-teaching lessons and practicum. The use of the materials is expected to be further extended by teachers when they join the teaching profession. A monitoring and evaluation survey revealed that student teachers were using the TESSA OERs during practicum and this helped to actively involve learners. However, student teachers encountered challenges. These include lack of electricity and internet connectivity, and poor ICT infrastructure in some schools. The use of TESSA OERs may be useful in teacher preparation in the 21st century. There is need to deal with the challenges encountered to enable use of the TESSA Materials to enhance active learning.