

Thesis title: Using a Collaborative Action Research to Investigate Mathematics Teachers' Practices in Implementing Learner Centered Pedagogy with ICT as a Tool for Learning

Abstract

This thesis presents a process and outcomes of an action research collaboratively undertaken in my professional experience as mathematics educator with two secondary school mathematics teachers. The research was carried out in the school where the two teachers work during the period of July 2007- February 2010 in junior classes (learners 13-15 years old) in Rwanda. The choice of action research as methodology is justified as it provides me with greatest flexibility so as to refine my practice as teacher-researcher based on emerging findings. My contribution to knowledge is based on the on-going investigation on our (participant teachers and I) teaching practices towards implementing learner centered pedagogy with information and communication technology (ICT) as a tool for learning on the one hand; and my reflection as new educational researcher I am on the other hand. My interest in the learner centered pedagogy is rooted in my professional experience as mathematics educator. Firstly secondary school mathematics teacher and secondly as mathematics lecturer in at institution of higher education that trains prospective secondary school teachers. The idea of researching in education under action research methodology paradigm was born from my involvement in EdQual research project which is under a research programme consortium on education quality in low income countries including Rwanda and my training in research units for doctoral programme. Taking dialectical position between theory and practice I believe that reality is socially constructed and knowledge generated is based on observation of behaviours and responses from participants (teachers and learners) in this particular context. This thesis intends to make contributions to educational knowledge concerning with how action research can constitute a form of lifelong learning. This contribution contains an analysis of my experience in educational research as I am answering the question: How do I as mathematics educator-researcher contribute to empowering participant teachers in developing and implementing pedagogical skills in their classes? Further contribution is concerned with how we represent individuals' claim to improve their practices. This contains an analysis of participant teachers' practices and reflections as I answer the question: How do teachers reflect on their teaching practices with respect to shifting towards a more learner-centered pedagogy? Preliminary analyses made me understand the role of collaborating with teachers in developing our own teaching initiatives that respond to learning needs without compromising the curriculum content. I have also understood the importance of checking whether pupils understand what we want them to do, and of giving them specific prompts to help them in their learning.