

## **Curriculum Coherence: An analysis of the intended and enacted National Curriculum Statement for Mathematics (NCSM) at Further Education and Training (FET) level in South Africa**

### **Abstract**

Recent curriculum reforms in mathematics and science in many developing countries including South Africa, come as an attempt to address issues of poverty, inequity and exclusion both educational and social. Common in these reforms is their emphasis on school systems to develop students' higher-order cognitive skills in mathematics and science. These are skills which are inextricably intertwined with the ability to solve real life problems and in the case of South Africa; these were in line with the two principles of social transformation and high knowledge and high skills drawn from the new constitution. However, international studies such as TIMSS 1995 - 2007 and the World Bank report of 2007 provide empirical evidence to suggest that not much change was taking place in the classrooms. These studies also suggest that the top achieving countries have coherent/aligned mathematics curricula. The major policy implication thereof is that if countries are serious about providing all students with a challenging mathematics curriculum it must be coherent, focused and demanding not by an individual country's own sense of what this might mean, but by international standards.

South Africa ranked lowest in the TIMSS studies but a further disaggregation of scores and distribution of marks suggests that performance of learners correlate strongly with the racial groupings and ultimately those groups of learners who were previously disadvantaged during the apartheid era continue to be outperformed by the previously advantaged learners (Fleisch, 2008). Research has shown that much attention has been devoted to the formulation of coherent educational policies but little research has been done that specifically tries to understand how the previously excluded groups experience specific inclusion policies that are put in place in their name (Sayed et al., 2007). This situation suggests the need to develop methodological tools and analytical approaches that go beyond identifying the gap between intended and enacted practices in disadvantaged school settings to understand in more detail the nature of this gap. Wilson and Bertenthal (2005) view a successful system of standards/objectives based education as coherent if the objectives, instruction and assessment are all aligned with each other; target the same goals for learning, and work together to support student developing proficiency. Given that curriculum alignment is associated with increased student achievement it would be important to use this lens to take stock of what was happening in the South African mathematics classrooms. It is in filling this gap that this study hoped to make a contribution and it was in this context that I raised the question: "How do teacher practices in the previously disadvantaged classrooms foster the development of the higher order cognitive skills (HOCS) and mathematical process skills that are espoused in the NCSM?"