

RESEARCH TITLE

Professional development: Mathematics teachers' implementation of formative assessment strategies

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Year of Award: **2018**
Qualification: **PhD**

ABSTRACT

Although buoyed by the induction of a democratic government, and the high ideals of our constitution, the South African education system has in many ways not met the expectations of its people, in this case, the mathematics education community. With the birth of an expansive intended curriculum came the monitoring of the outcomes through systemic type testing, the so-called attained curriculum. In time, it became clear that the inevitable 'teaching to the test' would constitute a narrowing of the implemented curriculum. Too much emphasis on systemic test results also resulted in summative assessment (assessment of learning) dominating instructional practices, neglecting other important curricular goals and content, and reliance on only one source of external monitoring to determine learner success in mathematics.

Literature on formative assessment (assessment for learning) reveals great potential for significant improvements in student achievement. However, little is known about mathematics teachers understanding and experiences of formative assessment strategies as an approach to teacher professional development. To counteract these, a project titled Assessment Enhanced Teaching and Learning (AETL) has been initiated to provide Grade 9 mathematics teachers and learners with curriculum aligned formative assessment tasks at strategic points throughout the year.

Against the background of the poor mathematics performance levels in South Africa, interventions for effective teacher development programmes to support practising mathematics teachers are much needed in the country. The review of literature, however, revealed a need for a deepening of understanding regarding the learning processes involved in implementing effective Professional Development (PD) programmes. The literature on Formative Assessment (FA) reveals great potential for significant improvements in student achievement. However, little is known about mathematics teachers' understanding and experiences of formative assessment strategies as an approach to teacher professional development. To counteract these, a project titled Assessment Enhanced Teaching and Learning (AETL) has been initiated to provide Grade 9

mathematics teachers and learners with curriculum-aligned formative assessment tasks at strategic points throughout the year.

In this study, I explored the understanding and experiences of professional growth of nine Grade 9 mathematics teachers from five different schools in the Pretoria (Tshwane) region as they participated in the AETL project. Through a qualitative case study design I was able to explore, analyse and describe the teachers' understanding and implementation of formative assessment strategies and their perceptions regarding its influence on their professional growth.

The findings indicate a strong sense of motivation to participate in professional development interventions through the need to excel in systemic type testing. The overall results suggest that systemic testing, in particular the ANAs (Annual National Assessments), seems to be the most influential factor on the teachers' instructional and assessment practices. However, in the course of gathering the data, other issues emerged, for example, that teachers' conceptualisation of formative assessment is often misunderstood and not optimally utilised in the learning process. The most challenging factor experienced by the participants seems to be a lack of time and/or skills to accommodate the wide range of learner abilities in one class. It is therefore recommended that further research, beyond the scope of this study, be carried out to investigate these issues.

It was further revealed that the teachers experienced professional growth as a direct result of their involvement in the refinement and implementation of formative assessment strategies.

Keywords: formative assessment, assessment for learning, mathematics teachers; professional development; teacher learning

The full thesis can be found at <http://hdl.handle.net/2263/70029>