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EXPLORING THE RELATIONSHIP BETWEEN IN-SERVICE MATHEMATICS TEACHER SUPPORT AND RETENTION

Mellony Graven[a], Barbara Pence[b], Susie Hakansson[b] and Peter Pausigere[a]

Rhodes University[a]; The California Maths Project[b]

The aim of this symposium is to stimulate active participation and debate on the relationship between teacher support and teacher retention. While large scale 'fix-it' Breen (1999) approaches to teacher support often work to alienate teachers from their profession and their professionalism, longer term teacher support in well-functioning communities of practice can work to strengthen teacher investment in the profession, enable teacher leadership and strengthen teacher professionalism. In this symposium we wish to draw on our experience as organising members of Discussion Group 11: Mathematics Teacher Retention at ICME-12, which illuminated similar and diverse experiences of issues across various contexts, to further debate, discuss and build insights to this topic at MES7.

INTRODUCTION AND RATIONALE

Teacher retention and particularly mathematics teacher retention seems to be a universal challenge even while the scale and nature of that challenge differs across various contexts. In the USA the modal number of years of experience of mathematics teachers is 1, over 20% of the teachers leave in the first year and over 55% leave in their first five years. While in South Africa such high turnover might not be the case an OECD (2008) report indicates that 55% of teachers indicate that they would leave the profession if they could.

During ICME12 we discovered that while there were many differences in our contexts and the challenges of working in those contexts our findings of what emerged from our longitudinal work with teachers indicated strong similarities. In particular notions of leadership, belonging, and shifting identities emerged across contexts. In this symposium each of our teams will present a brief stimulus presentation on our work in relation to mathematics teacher support with the aim that these will provide a stimulus for rich discussion. We also invite delegates to briefly share their experiences in relation to this topic. The discussion that follows will then focus on the following clusters of questions for discussion.

Discussion questions

1st Cluster: What purpose and value do communities of practice bring to mathematics teachers? Do communities of practice (cops) emerge as a by-product of professional development or are they purposefully created? What are the key enablers of cops that enable teacher support that promotes leadership, professionalism and teacher retention?

2nd Cluster: Is there a relationship between strengthened mathematical professional identities and teacher retention? If so what is the nature of this relationship? How

does an absence of professional status and negative identities portrayed of teachers in some forms of 'professional development', research and/or the press affect teacher retention?

SHARING OUR EXPERIENCES

Some South African experiences

South Africa's radical post-apartheid curriculum change delineated new roles for teachers and teachers (and education) were charged with building a new democratic South Africa. Seventeen years later the dominant discourse is that our education system (and particularly mathematics education) is 'in crisis' (see Fleisch, 2008). Research into this crisis (and particularly the mathematics crisis) points towards teachers as one of several key factors responsible for our dismal performance on international (e.g., TIMMS), regional (Carnoy et al., 2011; SACMEQIII, 2010), and national departmental assessments (DoE, 2008) in mathematics.

Teacher morale is at an all-time low with a large percentage of teachers indicating that they would leave the profession if they could (OECD, 2008). Teacher attrition is far greater in subject areas such as mathematics and science, as these skills are highly sought after and thus these teachers are more able to get employment outside of the teaching profession.

Against this backdrop we have evidence across a range of teacher development projects in South Africa (e.g., Graven 2005; Graven 2012) that long term teacher support that positions teachers as partners and in which their experiences are taken as the basis from which engagement and learning takes place, enables teachers to re-invest in the profession with increased passion and confidence. The voices of teachers gathered across such projects point to the importance of the ethos of the in-service support; the importance of belonging to the community; the emergence of more confident forms of participation in multiple practices, the emergence of life long learner identities and the emergence of long term mathematics teaching trajectories (often with leadership roles). In the stimulus presentation we will share some teacher utterances in relation to each of these.

Some USA experiences

In the U.S., providing good teachers for all students goes beyond recruitment to teacher retention. Over the past two decades, the analyses of teacher employment patterns reveal that new recruits leave their school and teaching a short time after they enter resulting in the reference to teaching as a "revolving door". This "revolving door" is even more acute in urban and low-income districts (Smith & Ingersoll, 2003; Ingersoll & Perda, 2010; Ball, 2012; Pence, 2012).

Reasons for the lack of retention of new teachers and teacher in high-poverty schools are often described as "working conditions". High on the list of dimensions key to retaining teachers is that of support. Components of this support include professional

and collegial support such as working collaboratively with colleagues; coherent, job-embedded, professional development; and increasing leadership opportunities (Johnson, 2006; Ingersoll & May, 2010, Pence 2012).

Building on these dimensions, a recent 5 year professional development project documented a decrease in yearly attrition from 20+% to 6.2%. Additional patterns included increased knowledge of content and content pedagogy, increased confidence, quality of teaching, and leadership, and development of communities of practice. Teacher reflections attributed these patterns to a multi-year professional development program that (1) went beyond mathematics content and pedagogy to focus on establishing teaching as a "noble" profession requiring work and preparation, growth that was complex, on-going, and supported the realization that there was a great deal to learn, and (2) built and supported a professional community of practice (Pence, 2012).

SESSION PLAN

First session

- Brief introduction to the aim of the symposium and the symposium organisers (5 minutes)
- Brief introductions of all and reason for participants interest (10 minutes)
- Stimulus presentations across the South African and Californian contexts (2 x 10 minutes + 10 minutes question and discussions following each)
- Discussion of key questions and other issues for further discussion in next session + introduction of 2nd session presenters (remainder of the first session)

Second session

- Stimulus inputs (pre-arranged and ad hoc) from audience participators followed by a few questions on each (up to 40 minutes)
- Discussion of key questions and discussion points that emerge from these stimulus inputs (40 minutes)
- Ideas for continued collaboration across contexts – where to from here? (10 minutes)

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