Educational Research for Social Change (ERSC)
Volume: 3 No. 1, April 2014
pp. 92-93
ersc.nmmu.ac.za
ISSN: 2221-4070

Conference Report

Southern Africa Research in Science, Mathematics and Technology Education (SAARMSTE) Annual Conference, 2014, Nelson Mandela Metropolitan University, Port Elizabeth

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The Southern Africa Research in Science, Mathematics and Technology Education (SAARMSTE) hosted its annual conference at the Nelson Mandela Metropolitan University, Port Elizabeth, South Africa from 13-16 January 2014. The theme of the conference was "New avenues to transform Mathematics, Science and Technology Education in Africa".

SAARMSTE is a prestigious and dynamic organisation that has regional and international membership and is dedicated to the advancement of research in Mathematics, Science and Technology Education (MSTE). The organisation fosters the following aims:

- To advance Mathematics, Science and Technology Education (MSTE) in Southern Africa;
- To promote a sense of community amongst researchers in MSTE;
- To promote research to improve and develop MSTE programs in response to current and future needs; and
- To organise conferences at which the results of MSTE research can be presented.

SAARMSTE publishes the African Journal for Research in Mathematics, Science and Technology Education (AJARMSTE). More information about SAARMSTE can be obtained on http://www.saarmste.org/

The four plenary speakers – all formidable scholars – presented work which promoted interesting debate and interaction amongst the delegates. Prof Brahm Fleisch' plenary focused on Large-Scale Reform of Instructional Practice where he highlighted research conducted by Taylor, van der berg and Mabogane (2013) "that Grade 3 learners from former-white schools scored higher on the same test than Grade 5 learners from former-black schools, showing that already by the age of eight there are large inequalities in the educational outcomes of schoolchildren".

Prof David Treagust from Perth, presented his plenary talk on "Why is an understanding of multiple representations so important in learning science? He concluded by stating the following:

- Teachers tend to assume students have proficient understanding of multiple representations and therefore do not emphasize multiple representations.
- Research studies have found students often have difficulty understanding and integrating multiple representations
- Students focus on surface features of a representation (overloading)
- Students prefer to use only one representation
- Teachers need to understand how students interpret and use multiple representations
- Students need opportunities to actively use multiple representations in class.

Prof Tamsin Meaney, from Charles Sturt University, Australia, stimulated delegates with her talk on preschool mathematics. Her title was **"**The mythologising of preschool mathematics: what is it supposed to do? She illuminated the fact that across the world, interest in the mathematics that reschool children should engage with has become a hot topic. Her research considers how three myths:

- mathematics achievement leads to economic progress;
- poverty can be fixed by education; and
- testing contributes to raising standards

have been refracted into the discussion about what young children can learn about mathematics. According to her, the risk from this refraction is of two kinds. The first is that what young children are capable of doing mathematically is reduced to opportunities to engage with a restricted version of school mathematics. The second is that these children's own mathematical interests are ignored in the interests of their becoming not a member of a heterogeneous society, but a clone of the perfect, middle-class child. From an awareness of the role of these myths, she proposed an alternative mathematics education for young children built on different myths, also present in many Western societies.

Prof Mamoghekti Phakeng captivated and inspired delegates with her talk, "From language as a problem to language as a resource: Forty years of research on mathematics education and language".

This 14th SAARMSTE conference provided the platform for delegates to engage, deliberate and argue with each other to explore new avenues of transformation in Mathematics and Science and Technology Education considering the crisis in which Africa's education finds itself and issues of equity, language, teacher and learner support, and assessment were deliberated. The theme highlighted and acknowledged that new knowledge is required to transform the critical education situation in Africa and that 'more of the same' will not solve the multiplicity of teaching and learning challenges facing MST educators in Africa.