DEVELOPING DEMOCRATIC PARTICIPATION IN MATHEMATICS EDUCATION RESEARCH.

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Although a group of international academics have attempted to build a culture of critical mathematics education, it has also been suggested that there is little indication of classroom mathematics critically addressing real world problems. But there is evidence that mathematics teachers are interested and would like to implement real world issues in their classroom, but do not do so. There is a need for studies that aim to ascertain teachers' opinions and practice relating to the place of real world issues in the mathematics classroom and identify any barriers they perceive to such practice.

What evidence is there of teachers implementing an ideological curriculum addressing real world issues in the mathematics classroom? What evidence is there of teachers experiencing barriers to implementing these issues in the mathematics classroom?

Initial interviews, of an exploratory nature, investigated the mathematical beliefs of participants in relation to classroom mathematics critically addressing real world problems. The interviews were prompted by a card sort exercise outlining different mathematical related beliefs systems. Although prompts can suggest possible responses and interrupt the spontaneity of interviews, in this case they provided the participant with initial stimuli, leading to thorough explanations of their beliefs and minimising researcher intervention.

I approach the study from Dewey's perspective. To develop elements of critical mathematics education in the classroom a culture of democratic participation is required, where the learner is also in control of the content and direction of any discussion. When research relates to political aspects of mathematical education similar conditions must apply in relation to the researcher and participant. A naturalist approach is needed, as the study will be descriptive rather than predictive, there is no manipulation on the part of the researcher and no priori assumptions regarding outcome. As I will use the data as a starting point and then analyse it to draw conclusions my approach to data analysis will use elements of grounded theory.

Findings from initial interviews suggest a discrepancy between teachers' preferred practice and their actual practice. Participants used phrases such as 'transmission', 'drill' and 'practice and rote' to describe their current practice but explained how pedagogical approaches such as 'understanding and application', 'activity and exploration' and 'questioning' were key in being able to integrate mathematics and real world issues. Reasons such as the 'the culture and beliefs of the school' and the teachers' own 'inexperience' were given as examples of barriers to practicing their pedagogical beliefs.