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This paper reports upon the findings of a research project linked to the Every Child Counts initiative. The research project investigates the teachers' perceptions of maths content in conjunction with their role as a Numbers Count teacher delivering a one-to-one maths intervention.

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Background

The Every Child Counts (ECC) initiative is run by a partnership of the Every Child a Chance Trust, a North West University, the National Strategies and the Department for Children, Schools and Families (DCSF). It aims to enable the lowest-attaining Year 2 children in mathematics to make greater progress towards expected levels of attainment by the end of Key Stage 1. ECC addresses a growing awareness that some children need early and intensive support in order to maximise their progress and close attainment gaps, and a growing understanding of the nature of effective mathematics intervention.

To achieve its aim of enabling progress for the lowest-attaining children in mathematics, ECC is developing a numeracy intervention known as 'Numbers Count™' which has now been introduced in 700 schools. Those appointed as Numbers Count teachers undertake one year of professional development to support their role. Whilst completing their professional development, Numbers Count teachers provide individual intensive numeracy support to low attainers in mathematics. Numbers Count Teachers have been providing this support to the lowest attaining 6 and 7 year old children in mathematics from October 2008 onwards.

A paper was presented by these authors at BERA 2009. That paper reported on a pilot study into teachers own beliefs about mathematics education and the ways in which these had been affected by their professional development. The authors reported that whilst teachers declared during interviews that their beliefs had not changed, survey data revealed the contrary. This led to the conclusion that the methodology and methods employed for this pilot study were amiss. Nevertheless, it is very important for both the professional development and the intervention itself to know what effects the beliefs of teachers and what really happens in Numbers Count lessons. This year therefore, the authors have tried again with different methods and a different approach to the research questions.

Research Questions

The aims of this paper are twofold:

- 1. To explore how teachers justify the decisions they make and what that tells us about their beliefs by investigating the following research questions:
- a. How teachers are teaching and how and why they make decisions about the maths they teach each child?
- b. How do teachers decide what maths is important?
- c. How do teachers prioritise the children's need?
- 2. To also explore whether this approach is more appropriate than the previous study in determining the answers to the teachers' development.

Methods

A mixed methodology approach was taken whereby both qualitative and quantitative methods were employed to collect the data. A selection of 30 schools in the North West agreed to a researcher

periodically coming into school to interview selected personnel linked to the Numbers Count intervention. Head Teachers, Numbers Count teachers, Year 2 class teachers, parents and children were all interviewed during the period January-April 2010. In addition to this qualitative data, Numbers Count teachers also kept a weekly log of the mathematics content taught during that week. In addition, a survey to all 700 Numbers Count Teachers was sent out containing items relating to beliefs.

The adoption of this research design enabled both quantitative and qualitative data to be collected allowing for general and specific findings to be determined. The weekly logs data allowed for a measurable picture of the maths content teachers were mostly working on (i.e. counting forwards, place value or ordinal numbers). The data obtained via interviews produced not only specific case studies but also provided a deeper understanding of what teachers are thinking and why they are thinking it.

Frame

A triangulation method was employed within an interpretivist methodology. Interpretivist methodology posits that meanings and understandings are supreme and therefore derives meanings and understandings of the world from its actors. Therefore this triangulation approach investigated the data from different actors i.e. the children, their teachers and class teachers, in the analysis of the phenomenon in question; teachers beliefs and actions (Cohen, Manion & Morrison 2008).

Research findings

Preliminary findings indicate that

- The teachers feel that building a child's confidence is paramount
- Teachers learning has come more from their first hand experiences with the children rather than from the Professional Development events
- Teachers have no problems in identifying children's needs but experience difficulty in justifying the choice of one competing need over another
- Counting is seen as extremely important and teachers are able to justify this in relation to a child's needs, however, teachers find it harder to justify their choices with respect to an overall framework of what is to be achieved in the long run
- A lot of teachers decisions are based on their perceptions of the needs of the child. Due to the nature of the one-to-one programme, this both allow and requires teachers to take account of this and work in this way
- This research and methods employed have been useful, but it is only a small step. More research is needed