

MENTAL CALCULATION: INTERPRETATIONS AND IMPLEMENTATION

Mike Askew, Tamara Bibby, Margaret Brown, Jeremy Hodgen
King's College London

ENGLAND'S NATIONAL NUMERACY STRATEGY

In 1999 the Labour government set up a large scale programme for reform of the content and pedagogy of primary mathematics: the National Numeracy Strategy (NNS). Although not legally imposed, the Strategy has been almost universally implemented in England's state primary schools. Key features of the Strategy include:

- *an increased emphasis on number and on calculation*, especially mental calculation, with pupils being encouraged to select from a repertoire of mental strategies. Informal and later standard written procedures were to be introduced later than was then common.
- *a three-part template for daily mathematics lessons*, starting with 10-15 minutes of oral/mental work, then direct interactive teaching of the whole class and groups, and finally 10 minutes of plenary review
- *detailed planning using a suggested week-by-week set of objectives*, specified for each year group. The objectives were listed, with detailed examples to explain them in a key document 'The Framework for Teaching Mathematics from Reception to Year 6' (Department for Education and Employment (DFEE), 1999) (hereafter referred to as the Framework).
- *a systematic national training programme* based on standard packages of training materials, to encourage 'best practice', especially in the domain of mental calculations.

RESEARCH AIMS, OBJECTIVES AND FINDINGS

At the time of the introduction of the Strategy, the encouragement of strategic mental methods was flagged up as a major change from previous teaching. Our project set out to further our understanding, both practical and theoretical, of a number of key issues and questions in the teaching of mental calculation as advocated by the NNS. Substantial objectives included examining:

4. the understandings and interpretations of mental calculation that teachers were developing and that underpin the range of practices that they were developing
5. the balance teachers attempt to achieve between children recalling number facts and developing strategies for effective mental calculation
6. what 'best practice' in mental calculation might look like
7. the policy implications from all the above for developing training packages.

In this short oral we present evidence suggesting that whilst teachers are spending time on what they consider to be mental calculation, the nature of the teaching focuses more on rapid recall and procedural methods, than strategic methods. This raises issues about the nature of large scale reform and professional development.