

# IMAGERY AND VISUALIZATION WITHIN PRE-SCHOOL AND ELEMENTARY NUMBER: A 2-YEAR CASE STUDY OF 11 SCHOOLS

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For two school years from Autumn 1998, 11 schools teaching 4-9 year old students adopted and pursued a number curriculum with a strong emphasis on progressively building imagery and visualization. Both authors studied this by visiting the schools, discussing developments with teachers, and observing lessons.

Research questions identified were:

- will the initial commitment of teachers to the more visual curriculum be sustained? (1. we assert that there is not a culture of persistence in English elementary education; 2. the 2-year period included, from Autumn 1999, the introduction of the English *National Numeracy Strategy*);
- will the students show themselves as in a different relationship to numbers – e.g. as having a greater ‘at-homeness’ with numbers – after 1 year, after 2 years of the visual curriculum;
- will the students’ achievements with numbers be enhanced: *specifically* their number location, ordering, counting, complement-finding, calculating and calculation-adjustment abilities.

The oral presentation will:

- identify key features of the responses of teachers and their students, including gains in ‘at-homeness’ with numbers;
- illustrate these with respect to *one* of the teachers and her class;
- present evidence of increased abilities to use imagery and to visualize when dealing with number problems;
- present evidence of increased achievement levels within the aspects specified above;
- outline how these schools reacted to the English *National Numeracy Strategy*;
- relate this study to the ideas of Freudenthal, Gattegno, Wittmann and others.

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