Thinking Maths lessons on the interactive whiteboard

Introduction

Interactive whiteboard technology has enhanced the classroom practice of CAME. The essence of the approach is teacher mediation of collaborative classroom interactions, which involves successive re-focusing of pupils' attention and their ability to reflect back on the ideas generated in the class. The whiteboard versions of each of the 30 CAME materials included here are designed to serve this purpose and to allow teachers greater scope for developing their own styles with the TM lessons.

There are many reasons why the Thinking Maths approach can benefit from the use of the interactive whiteboard:

Planning around key questions and challenges

- A Thinking Maths lesson's agenda and worksheets are structured around key conceptual questions interspersed with supplementary ones that either prepare for, or elaborate on the concepts developed. The key questions are allocated to main frames, while the supplementary ones are placed in the guidance for the teacher since they can be more flexible with them and free to leave them out.
- Often the teacher needs to change supplementary questions once a specific focus emerges in a particular class, so as to use pupils' own ideas and wording. This responsive nature of TM lessons is assisted by the IWB so that what the class focuses on at any one time can be formulated and stored in their own terms.
- Once the teacher is familiar with a particular lesson the planned whiteboard slides can easily be edited and adapted to local conditions and resources, keeping to lesson main agenda. The use of planned slides serves to keep teachers on track as they progress through the lesson agenda.

Resources and tools

- The IWB drawing and other tools assist on class focus upon the key cognitive challenges rather than upon time consuming tasks that require minimal discussion and thinking. Features such as 'hide and reveal' allow teachers to selectively focus the attention of the class upon specific questions or groups of numbers etc.
- The technology allows teachers to produce dynamic results, e.g. plotting points on the graph each time a new value is calculated. Hence the link between different representations of concept such as words, symbols, table, and graph is immediately visible.
- The use of the tools (and their speed of application) allows the teacher to be more responsive to the thinking of the pupils. Pupils ideas can be illustrated and linked to others and to the mathematics and other contexts in real time.
- There is the facility to enable multiple inputs from pupils during times of sharing and reflection i.e. drawing many coloured lines to show their ideas on functions. This is an important aspect of collaborative development of thinking, termed social construction, and an extension of individual effort.

Storage

- Outcomes from lessons, including pupil work, can be easily stored and used at a later time with the same class. That is convenient where the planned activity takes more than one session, and the teacher refreshes the class memory with displays of what they had done previously.
- Such outcomes are also important for teachers' own reflection and development, and have value for formative assessment, and for action research on teaching and learning.