Workshop
TOOLS AND PROCEDURES FOR USING HISTORICAL MATERIALS IN THE CLASSROOM.

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This workshop was based on some ideas in my paper (Rogers 2011) where I developed the principles of using concept maps of 'significant' items pertaining to the *history* of mathematics and building a narrative of relevant *heritage* content (Grattan-Guinness 2004) from where we can develop particular orientations relevant to specific classroom contexts. (Rogers 2011: 7-13)

A number of examples were presented from workshops used with teachers and secondary pupils (ages 11-18) where problems adapted from historical contexts were offered for criticism to participants. The main objective of the workshop was to discuss the manner in which these problems or others like them may be introduced in the classroom *to foster the pupil's own epistemological process* in building up their personal mathematical knowledge.

Colleagues attending this workshop who have used historical material with students were invited to bring their own examples of classroom problems for discussion.

A particular focus was the research-based evidence for attending to the ideas of Ratio and Proportion, Spatial and Geometrical Reasoning, Introduction to Functions and the Development of Algorithms and Algebraic notation. (Watson, Jones & Prat 2013)

Some questions to consider about affordances (Gibson 1997, Heft 2003) and constraints were offered when using historical materials as classroom problems:

- Can this material be used (or adapted) with pupils at any age
- What mathematics (if any) do pupils need to know in order to address the problem
- What kinds of problem-situations is this material designed to raise
- What is its potential for developing conceptual knowledge
- Does it have relevance for building a knowledge of mathematics as a science
- Do the ideas involved appear in different areas and at different levels of mathematics
- Does this material encourage mathematical communication
- Does this material encourage teachers' own reflection processes

About 25 colleagues attended, and a useful and provocative discussion ensued. I thank those colleagues for their contributions and encouragement.

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