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Why bother with original sources?

Abstract

The workshop reports on a teaching experiment which was carried out in May 2017 in France, in the final year of elementary school (year 5) and in the first year of middle school (year 6). Its starting point is the most famous passage of Plato's *Meno* (Plato, 1967, sections 82a-85b), in which Socrates challenges a slave to construct a square twice as large (in area) as a given square.

From a purely mathematical viewpoint, working on this *problem* involves mathematical topics which are central – at least in the French curriculum – in the transition from primary to secondary education: characterization of standard quadrilaterals (through lists of properties to be checked with drawing/measuring instruments), distinction between length and area of plane shapes, measuring length and area either with *ad hoc* or with conventional units, recognizing situations where proportionality holds (or not).

However rich Socrates' problem may be from a mathematical viewpoint, its study does not require any explicit use of original sources. In our experiment, the challenge was not to make students work on Socrates' *problem*, but to work on Plato's *text*. In terms of task design, this alters the parameters dramatically, since it affects the nature of the tasks entrusted to students, the nature of the teaching goals, and the nature of the indicators to be used in order to assess the extent to which these goals were achieved. In this respect, this experiment contributes to the general research program outlined in (Chorlay, 2016), on the specificities of the tasks involved when working with original sources. In the case of Plato's *Meno*, in addition to *meta*-tasks in a mathematical context (such as: to reformulate, to assess, to criticize), non-mathematical tasks have to be taken into account as well. Hence, our theoretical background will include recent research on literacy, with an emphasis on text comprehension (Cèbe & Goigoux, 2009).

In the workshop, after a short presentation of the design of the teaching session and a brief *excursus* on the didactics of text comprehension, the participants will be given the opportunity to study documents gathered during the experiment: students' drawings, students' written arguments, and transcripts from classroom debates.

References:

- Cèbe, S., Goigoux, R. (2009). *Lector & Lectrix. Apprendre à comprendre les textes narratifs. CM1-CM2-6^e-Segpa*. Paris : Retz.
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- Plato (1967). *Laches – Protagoras – Meno – Euthydemus* (trans. by W.R.M. Lamb). Cambridge (Mas.): Loeb Classical Library. Available online at: <http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0178%3Atext%3DMeno>
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