History of mathematics for future teachers, in a nutshell

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In one of his illuminating papers on the "use" of history of mathematics in the classroom Man Keung Siu (2007) posed a problem that was meant not only to reveal the concrete problems experienced by teachers when trying to introduce history into their courses and teaching but also to address the challenge of defining of what it means for him, as a teacher trainer, to dispel the underlying misunderstanding about what is at stake in this introduction of a historical perspective in one's teaching. How can one explain, in simple terms or with simple means, that the whole point is not about *knowing* history of mathematics, but about *understanding* its value and depth for key issues about the teaching of mathematics? In other words, Siu transformed a question from teachers, into a question for teacher trainers and historians.

These traditional questions are still fully relevant. They are furthermore reinforced today by the explosion of "teaching assistants" ranging from lists of references, video clips, AI apps, and online historical documents, all designed to assist effective teaching. In many cases these "aids" ultimately come to constitute a heavy set of constraints, essentially because providing "online resources" does not amount to creating the conditions to develop true and "living" resources (Trouche et alii, 2020). Although this question has long been explored by researchers in math education (Pepin et alii, 2017) and is well known to teacher trainers, in a world in which the lack of resources is apparently no longer a problem, we still need to ask how we can help people make the best of the host of "resources" available to them, especially when those resources are presented in a form that does not always facilitate their appropriation. Online resources for integrating history of mathematics in math teaching does not escape these dilemmas.

Being confronted, like anyone else, with these old and newer questions, I recently developed a videographic project with several colleagues and institutions (Bernard et alii, to be published). The purpose was to confront the above-mentioned dilemmas and offer a rich answer to the questions posed by some of my students about the quality of some video clips on history of mathematics available during the COVID crisis: what was their historical value and pedagogical interest? What could they do with this? The decision to produce our own series of videos clips initially followed a double intention. The first was to convey, in a *nutshell* – that is, within the hard constraint of 6 or 7-minutes clips – some kind of deep meaning about history of mathematics and its interest for teaching. The second was to provoke some kind of critical thinking about the videographic support itself. Beyond these initial intentions, it soon appeared that the collective creation of such video clips had an interest by itself, either to reflect or to trigger new questions. This project will thus serve me to illustrate the underlying issues related to the development of such "teaching aids", taking the form of a "nutshell", and meant to convey a sense of history about their chosen subjects.

References
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