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**History of mathematics: illuminating understanding of school mathematics concepts for prospective mathematics teachers.**

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Summary: The use of the history of mathematics in teaching has long been considered a tool for enriching students' mathematical learning. However, in the USA few, if any, research efforts have investigated how the study of history of mathematics contributes to a person's mathematical knowledge for teaching. In this article, the author presents the results of research conducted over four semesters in which she sought to characterize what prospective mathematics teachers (PMTs) understand about the topics that they will be called upon to teach in the future and how that teaching might include an historical component. In particular, the author focuses on how the study and application of the history of solving quadratic equations illuminates what PMTs know (or do not know) about this essential secondary school algebraic topic. Additionally, she discusses how the results signal important considerations for mathematics teacher preparation programs with regard to connecting PMTs' mathematical and pedagogical knowledge, and their ability to engage in historical perspectives to improve their own and their future students' understanding of solving quadratic equations.

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