

----- The place of the history of mathematics in mathematics teaching and curriculum. The situation in Greece. -----

Athanassios Gagatsis*

What role does history play in mathematics teaching?

In Greece there is a long tradition of using short historical notes in mathematics textbooks, especially those on geometry. These notes contain profiles of the great mathematicians of ancient Greece and information about their work, in an effort to stress the Greek origin of mathematical science. This historical material serves an educational policy with a long tradition in Greek education; the roots of this tradition can be traced back to the formation of the modern Greek state, in the early 19th century, when the classical Greek civilization was viewed as the main factor in the formation of the national character of modern Greece.

The same orientation towards biographies and general information (dates of discoveries etc.) has also been the main feature of various historical notes in algebra textbooks over the last 40 years. We stress here the fact that in Greek schools there is, for every subject taught, an official textbook the use of which is compulsory to all teachers and pupils.

Since 1987 there has been a reform in mathematics of secondary education, with a clear deviation from the 'new maths' principles and oriented towards the process of problem-solving. In this context there has also been a new attitude towards the role of historical notes. Textbooks written according to the new curricula contain, at the end of various chapters, long historical notes which give emphasis to the problems related to the emergence and evolution of fundamental mathematical concepts (e.g. number, equation, logarithm, derivative, integral, matrix and determinant, probability, etc.).

Positive and negative influences

The first section seems to reveal a favourable environment for the development of an interest in the history of mathematics among teachers; however, the reality is different. Neither in Greek universities, which prepare the future teachers of mathematics, nor in in-service training schools, has history of mathematics been taught as a subject in its own right. A few recent exceptions to this rule do not make up for the fact that the overwhelming majority of secondary teachers lacks knowledge about the history of mathematics and its educational value. This lack of a historical education in mathematics may well be the reason that most teachers regard the historical notes as 'space fillers' and do not bother with their content. There is, naturally, a small number of teachers who try to use these notes to advantage in their day-to-day teaching, aiming to promote discussion in their classes. Official guidelines for teachers recommend them to employ one teaching-hour, after completing a chapter's subject matter, to the study of the respective historical note and to engage in a free discussion in the classroom.

Finally, there is a small group of secondary school teachers and university professors who try to spread the value of using history of mathematics in the classroom. They act mainly within the Group for the History of Mathematics, an affiliate of the Greek Society of History of Sciences and Technology. They publish occasional papers in a series entitled "Matters of History of Mathematics" and keep in touch with teachers interested in this area. Among their recent and most influential activities are the organization of an interdisciplinary symposium on "Didactic exploitation of history of sciences" (Thessaloniki, August 1991) and the involvement in writing the historical notes for the new official mathematics textbooks mentioned above.

* Department of Mathematics, Aristotle University of Thessaloniki, GR-54006 Thessaloniki)
Contribution to the 'table ronde' about the role of history of mathematics in mathematics teaching at the
Summer University, Montpellier July 19--23, 1993