SUMMARY OF CONTRIBUTION TO PANEL DISCUSSION ON THE PLACE OF THE HISTORY OF MATHEMATICS IN MATHEMATICS TEACHING AND CURRICULUM

HEIEDE Torkil
Royal Danish Scholl of Educational Studies
DK - 2400 Copenhagen NV, Denmark.

In the Garden of Eden Adam and Eve were told to give names to all the animas, and that was the beginning of language and of science. No doubt they were also told to count on their fingers, and that was the beginning of mathematics. So mathematics has a very long history, and its history is an integral part of it, that is : mathematics is a living subject. Therefore the history of mathematics should appear in some form everywhere in the teaching of mathematics, from primary school to university. And it should appear not as an "educational tool" in the teacher's hand to make things easier or more colourful or more fun; it should appear in its own right to give the learner a better and truer understanding of what mathematics is - and this would then in its turn make everything more colourful and more fun, not always easier to grasp but maybe easier to appreciate.

In Denmark there is a long tradition for studying and teaching history of mathematics at the universities, and this tradition has in some measure also been present at the upper secondary level, since the teachers at this level are all university educated. The same tradition has also been felt at the lower secondary level and even a little at the primary level, partly because of the influence of an elementary mathematics textbook in which the exposition was wholly historical; it was written for the so-called folkn high schools in 1888 and has been reprinted many times, also as late as in 1962.

All this was given a new impetus in 1988 when history of mathematics was made obligatory at the upper secondary level : all the topics on the mathematics curriculum should now be taught with du respect to what the ministry of education called the three aspects of mathematics, namely the structural (or deductive) aspect, the model aspect (or the aspect of applicability), and the historical aspect (which was even mentionned first in the new regulations). The most immediate impact of this has of course been on the textbooks, since the market is completely free. Old textbooks have appeared in new editions with history added, sometimes in whole chapters written by historians of mathematics, and also quite new textbooks and smaller books on single topics have been written in which the history has been totally integrated in the text. Also in new textbooks for the other school levels one can detect more history than before, often in the form of very short biographies and portraits of mathematicians connected with the different topics, e.g. Descartes, Fermat, Chebychev. For use at the upper secondary level (and in the education and in-service education of teachers) there have also appeared collections of sources to the history of mathematics.

Référence

Torkil Heiede, "Why Teach History of Mathematics?". The Mathematical Gazette 76 (1992) pp. 151-157. This paper contains my personal answer to the question in the title; the list of references contains 48 other answers, all in English. The Danish version of the paper is "Hvorfor undervise i matematikkens historie?" Normat (Nordisk Matematisk Tidskrift) 39 (1991) pp. 153-161 & 192; here the list of references is longer, since it also contains 31 answers to the same question in French, German and other languages.