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On the main milestones in developing mathematics in Poland prior to the XIX century – through the lens of mathematics education

Abstract

The history of mathematics education in Poland dates back to the 10th century, the origins of Polish statehood. Mathematical thought was developing, as witnessed by the work of Polish scholars who were educated in the major European academic centers, to which also Cracow Academy belonged since 1364. International contacts made mathematical knowledge known to scholars, irrespective of their nationality. For example, Vitellon's (1230?-1280?) research, which he carried out in Paris, Padua and Rome after completing elementary education in Poland, was the subject of studies of Pacioli, Leonardo da Vinci, Kepler and Copernicus.

The 15th century is characterized by an even more intensive 'international exchange' of scholars - Polish adepts of the sciences were educated not only in Cracow but also in Bologna, Heidelberg, Prague, while foreign scholars were coming to Cracow Academy. Nicolaus Copernicus (1473-1543) was also trained in the walls of Cracow Academy, studying mathematics and combining mathematical knowledge with the secrets of astronomy. In his work "De Revolutionibus Orbium Coelestium" we find a section devoted to trigonometry which was an inspiration for Viete and Napier.

The 16th century brought a development of humanistic thought, the first mathematical works in Polish were written, the audience of knowledge was expanded, methods of mathematics teaching were changed, the scholars more often referred to issues drawn from everyday life. The most distinguished works of that time which seem to be known to Leibniz and Hevelius, are: "Geometry" of Marcin Grzepski, "Arithmetica Linearis" of Benedict Herbst or "Cogitata et Inventa Mathematica" of Adam Kochański.

The 18th century in Poland brought a spectacular creation of modern secular system of education (1773), comprising teachers' education and elaborating new curricula and textbooks, thus laying down the foundations for the construction of the 19th and 20th century famous mathematical centers: the Warsaw and the Lviv Mathematics School.

By considering a number of examples of authentic mathematical problems' solutions or their reconstructions, the aim of my presentation is to show the main milestones of the history of mathematical education in Poland prior to the 19th century, as a part of the historical development of mathematical education in Europe. I will also discuss some examples of the appearance of old mathematical problems in contemporary education, focusing especially on exploring how considering these problems can motivate students to learn and develop their own mathematics.

References

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