

Teaching arithmetic in the Habsburg Empire at the end of the 18th century—A textbook example

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Abstract

The paper describes F. Steindl's textbook *Institutiones Arithmeticae* [1778], the first official mathematics textbook of the Hungarian part of the Habsburg Empire after the reforms of the education system in the 1770s. The textbook includes a detailed description of reckoning methods and their practical applications, illustrated exclusively by “problems in context”. It also includes many instructions for the teacher, making it an early example of a mathematics textbook paying attention to pedagogy.

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Zusammenfassung

In dem Artikel beschreiben wir F. Steindls Lehrbuch *Institutiones Arithmeticae* [1778], das erste offizielle Lehrbuch für Gymnasien im ungarischen Teil des Habsburger Reiches nach den Reformen des Unterrichtswesens in den 1770-ern. Das Lehrbuch enthält eine detaillierte Beschreibung der Rechenmethoden und deren praktischer Anwendungen, welche ausschliesslich durch Sachaufgaben illustriert sind. Enthalten sind auch viele Anweisungen für den Lehrer, was es zu einem der frühen auf die Pädagogik achtenden mathematischen Lehrbücher macht.

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1. Introduction

The idea that knowledge and education are the basis of general prosperity in Europe appeared during the 17th century, and evolved particularly during the 18th century. Inspired by the philosophy of enlightenment, governments of European states began reforming their respective educational systems, which were found to be inadequate. Education had to become general, accessible to large parts of the population, rather than

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only to young noblemen, and instead of focusing solely on religious and classical studies, subjects such as history, sciences and mathematics were also introduced. The doctrine of enlightenment, however, was not the only reason for the introduction of general education. A centralized general education system allowed the state (the monarch) a direct control over the education of the population, which was in turn highly beneficial for the establishment of central and absolute authority. Consequently, in most European states educational reforms were conducted in the second half of the 18th century. And not only were the previously ecclesiastically dominated school systems (at least in territories of the Holy German Empire of the German Nation) renewed, but they were also made an integral part of state territorial politics.¹

The Habsburg Empire was no exception to this trend. After the peace of Westphalia (1648), the Habsburgs (although still nominally Holy German Emperors) lost much of their influence over German states. Consequently, from that time they turned their attention to their hereditary lands (which later became known as the Austro-Hungarian empire, and spanned the modern Austria, Hungary, Czech Republic, Slovakia, Croatia, Slovenia, and parts of Poland, Bavaria, Italy, Romania and Serbia) [Valla, 1900]. One of the most successful monarchs in her attempts to unify these countries into one centralized empire was Maria Theresa.² In order to unify the education system under the monarchy, she introduced several school reforms. The most important of them was the *Allgemeine Schulordnung für die deutschen Normal-, Haupt- und Trivialschulen in sämtlichen Kayserl. Königl. Erbländern* (*Allgemeine Schulordnung*, 1774).³ This ordinance concerned the Austrian part of the Empire, i.e. modern Austria, Czech Republic, Slovenia, parts of Poland and Bavaria. This document provided a basis for a unified state primary education system, and included several important novelties, such as the introduction of obligatory schooling for children of age 6 to 12, the specification of the subjects to be taught and the specification of textbooks. For arithmetic, the prescribed textbooks were the first and second part of *Anleitung zur Rechenkunst zum Gebrauche der deutschen Schulen in den k. k. Staaten* (*Anleitung zur Rechenkunst*),⁴ published in Vienna in 1776, and a summary of both parts. The *Allgemeine Schulordnung* also defined the sorts of primary schools (normal schools, *Deutsche Hauptschulen*—general schools, and elementary schools) and their locations; prescribed that the method of teaching in public schools should not be individual (as in earlier times); that exams should be held at end of each semester; and promoted the German language as the language of basic education.⁵

Although the idea of a state school system in Austria appeared some time before the dissolution of the Jesuit order, the educational reforms were greatly facilitated by the Order's dissolution in 1773. Until then the Jesuits had dominated the secondary part of the education system, and the teaching content concentrated on religion and Latin. Since the reign of Ferdinand I (1521–1564) most of the education in the Habsburg lands had been entrusted to the Jesuit order, although alternatives existed.⁶ Still, the other orders modeled their gymnasias after the Jesuit example. Upon the Jesuits' suppression, the majority of their educational facilities were taken over by other orders.⁷ However, the State took over most of the rest of the properties belonging to the Jesuit order and thus obtained a large number of buildings in almost all large cities of the Empire, which enabled the housing of many new schools and gymnasias independent of the Church. After

¹ For more information regarding the changes in educational systems in the European countries in the 18th century and their historical context see [Lee, 1984; Csáky, 1978; Stachel, 2002; Cuvaj, 1910b; Schubring, 2005b; Hammerstein and Hermann, 2005; Bartholome, 1911].

² Maria Theresa Walburga Amalia Christina (1717–1780), from 1740 the sovereign of the Habsburg monarchy. From 1775 she was co-regent with her son Joseph II (1741–1790). Both are mentioned in problems in the textbook under discussion.

³ General school ordinance for German normal, general and elementary schools in all imperial–royal hereditary lands, published by Johann Ignaz von Felbiger.

⁴ Short tutorial on reckoning for use in German schools of the imperial–royal states.

⁵ For more information regarding the educational reforms of Maria Theresa see [Cuvaj, 1910a, 402–444; Pacher, 2008, 50–75].

⁶ In 1773, in Austria and Bohemia there were 38 gymnasias belonging to Jesuits, 24 to Scolopians and 18 to other orders [Polenghi, 2007].

⁷ As late as 1864, 89 gymnasias (out of 235) in the Empire were run by ecclesiastic orders [Matković, 1866].

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