

**Burcu Durmaz**  
Mehmet Akif Ersoy University, Turkey  
drburcudurmaz@gmail.com

## **Mathematics and Science History Contexts of Mathematics Textbooks in Turkey**

### **Abstract**

In the last few years in Turkey, it has been suggested and emphasized that giving details on the history of mathematics in the curriculum may help increasing students' attitude towards and success in mathematics (Ministry of Education, 2013). In addition, it is a known fact that science lessons, which are integrated with not only scientists' successes but also experiences and challenges, have a potential to increase the students' success in science (Lin-Siegler, Ahn, Chen, Fang, and Luna-Lucero, 2016). In this context, the lives and study of mathematicians and scientists may make mathematics lessons more meaningful for the students. But when we examine the mathematics curriculum from primary school to high school grades, we cannot see such an emphasis in the primary school mathematics program as well as in other grades. For this reason, the present study aims to investigate the density and effectiveness of the context and content of the history of mathematics and science in Turkish mathematics textbooks across all grades. For this purpose, two independent researchers analyzed 21 mathematics textbooks from the 1st grade to the 12th grade. All these textbooks are still used in mathematics classes even if they were published after 2013 (the revision year of the mathematics curriculum). The data in the textbooks were classified by grade, name of the mathematician/scientist, the type of information (non-historical, anecdotes, notes with daily use of/application the historical knowledge, notes without daily use of/application the historical knowledge, etc.), and the mathematical domain (geometry, numbers, algebra, etc.). By clarifying the criteria for the textbooks, the researchers discussed the conflicts of their work and opinions after working on the data separately. At the end of the study it was determined that neither the content about mathematicians and scientists, nor information about the origins of the mathematical concepts or symbols are satisfactorily given in the textbooks. It was also seen that the limited context of the history of mathematics and science was primarily given at the beginning of the new subjects and was meant only for reading and not for use along with the lesson. Scholars have noted that the weakest way of using historical content in mathematics lessons is giving them as short historical anecdotes at the beginning of new chapters (Baki & Bütüner, 2013; Erdoğan, Eşmen & Fındık, 2015). Lastly, it was found that the textbooks written collaboratively by scholars, teachers, and experts were better than those by means of history of mathematics and science. According to the findings of this research, it can be said that the history of mathematics and science contents are not enough to nurture the students' mathematical knowledge and improve their attitude towards mathematics (Ministry of Education, 2013). Thus, it is suggested that the authors of the mathematics textbooks need to be trained on how to connect the history of mathematics and science with the mathematics curriculum in effective and useful ways.

---