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Transformation of Japanese elementary mathematics textbooks: 1958–2012.

Li, Yeping (ed.) et al., Transforming mathematics instruction. Multiple approaches and practices. Cham: Springer (ISBN 978-3-319-04992-2/hbk; 978-3-319-04993-9/ebook). Advances in Mathematics Education, 199-215 (2014).

Summary: Quality of teaching is a major factor in students' mathematics learning. *J. W. Stigler* and *J. Hiebert* [The teaching gap. Best ideas from the world's teacher for improving education in the classroom. New York: The Free Press (1999)] showed that mathematics teaching in Japanese schools is significantly different from what is typically observed in US classrooms. However, Japanese mathematics educators claim that Japanese mathematics teaching has transformed significantly over the last 50 years. Although teaching is influenced by a variety of factors, textbooks play a significant role in what mathematics is taught and how it is taught. In other words, textbooks may significantly influence students' opportunities to learn. Thus, six editions of a Japanese elementary school mathematics series since 1958 were analyzed to identify any change that might indicate the transformation of mathematics instruction in Japan. The analysis revealed that the features included in the series have changed over the years to support more explicitly the problem-solving-based mathematics instruction described by Stigler and Hiebert [loc. cit.].

Classification: U22 U23 A30 D32 D33

Keywords: elementary school mathematics; historical analysis; textbook analysis; problem-solving-based instruction

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