

MME Seminar 2019

Session 7

Date: 3rd May 2019 (Friday)
Time: 3.30 p.m.
Venue: MME Math Lab 5 (NIE7-B1-10)

Treatment of ratio, rate, and proportional reasoning in Japanese mathematics textbooks

By Tad Watanabe



Abstract

Ratio, rate and proportional relationships are arguably the most important topics in middle grades mathematics curriculum before algebra. However, at least in the US, many teachers find these topics challenging to teach and students find these topics difficult to understand. Because textbooks are important for providing students opportunities to learn, understanding how Japanese standards and textbooks treat these topics may be of interest to mathematics educators outside of Japan. In an on-going study, a widely used mathematics textbook series—the Japanese National Course of Study—is examined to answer the following 2 questions:

(1) What specific topics related to ratio, rate and proportional relationships are discussed in the Japanese curriculum and in which grade, or grades? and (2) How are the ideas related to ratio, rate and proportional relationships introduced and developed, both within and across grades, in the Japanese textbooks? I will share the preliminary findings and discuss their implications (mostly to the US mathematics education but perhaps to Singapore and elsewhere).

Tad Watanabe is a Professor of Mathematics Education and an Assistant Chair of the Department of Mathematics at Kennesaw State University, Kennesaw, Georgia, USA. Tad's research interests include teaching and learning of multiplicative concepts such as fractions and proportional reasoning, Japanese lesson study, and elementary and middle school mathematics curricula. He has published many articles on these topics, both in Japan and in the United States.

All are welcome!