

ANSWER PATTERNS OF JAPANESE SECONDARY SCHOOL STUDENTS IN TIMSS 2015 MATHEMATICS SURVEY

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Suzukawa et al. (2008) analysed the PISA 2003 mathematical literacy survey data, to reveal the Japanese students' answer patterns through comparison with data from 13 countries and areas. Their results indicated that Japanese students had peculiar answer patterns, while being especially good at solving questions in the 'educational' context of the PISA framework. In the secondary analysis of TIMSS mathematics survey data, Watanabe and Watanabe (2021) identified the answer patterns of Japanese fourth-grade students in TIMSS 2015, to show that Japanese primary school students had a peculiar answer pattern, and in particular, the items of calculations were found to be easier than for students from the 12 countries and areas. However, previous studies analysed the PISA and TIMSS data and examined the answer patterns of 15-year-old students completing compulsory education, and fourth-grade primary school education.

This study aimed to reveal the answer patterns of Japanese secondary school students. Since Watanabe and Watanabe (2021) analysed TIMSS 2015 data, this study followed their approach and targeted the TIMSS 2015 data. Some of the 13 countries and areas targeted by Watanabe and Watanabe (2021), did not participate in the TIMSS 2015 eighth-grade mathematical survey. Instead, 15 countries and areas, including Australia, Canada, Hong Kong, Hungary, Ireland, Italy, Japan, Korea, New Zealand, Russia, Singapore, Sweden, Taiwan, the United Kingdom, and the United States were targeted in this study.

The results show that Japanese secondary school students had a peculiar answer pattern in comparison to these 15 countries and areas, and in particular, the items of Number, especially the ones learnt at the primary school level, were found to be more difficult than they are for students from these other countries.

References

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