

The Content Analysis of Fraction Materials in the Elementary Mathematic Textbooks of Taiwan and Finland

Wei-Min Hsu* Huang-Yuan Huang**

The purposes of this study were to compare the similarities and differences of fraction instructional materials used at the elementary school level in Taiwan and Finland. The instructional materials reviewed in this study were the official version textbooks used in Taiwan, and the WSOY version textbooks used in Finland. The content analysis was used as methodology and mathematics problems were used as analytic units. The analytic categories of fraction instructional materials were designed and used to analyze the characteristics and differences of fraction concepts represented in the textbooks between the two countries. The findings of this study revealed that the number of fraction tasks in Finland textbooks were double that of Taiwan textbooks. Finland provided more problem-solving opportunity for students than Taiwan did. Regarding the fraction problems presenting, we found most of the problems were classified as ‘the basic definition of fraction’ in two country textbooks, and presented in a spiral way. Most fraction concepts in Taiwan were presented one year earlier than Finland. Most problems were presented in mathematics form and focused on procedure practice in the two sets of textbooks. Compared with Taiwan textbooks, more problems in Finland textbooks focused on symbol representation and procedure using. Otherwise, the example problem was presented in different ways in the two sets of textbooks: in Taiwan, the examples were usually presented in several thinking process and representations that students might have, but in Finland, they were only presented with examples in a single or a definitive way to students.

Keywords: Content analysis, Fraction instructional material, Mathematics textbook

*Wei-Min Hsu, Associate Professor, Graduate Institute of Mathematics and Science Education, National Pingtung University of Education

**Huang-Yuan Huang, Teacher, Lin-Yuan Elementary School of Kaohsiung City