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A study of the performance of 5th graders in number sense and its relationship to achievement in mathematics.

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Summary: In order to investigate the performance of number sense and its relationships with mathematics achievement of Taiwanese students who had just completed the 5th-grade mathematics curriculum, a computerized number sense scale has been developed. This number sense scale includes four factors which are recognizing relative number size, using multiple representations of numbers and operations, judging the reasonableness of estimates of computed results and recognizing the relative effect of operations on numbers. A total of 1,212 students in Taiwan participated in this study. The main findings of this study are summarized as follows. First, the students perform best on “recognizing relative number size” and perform worst on “judging the reasonableness of estimates of computed results”. This finding is consistent with previous studies. It shows that students in Taiwan seem quite poor on judging the reasonableness of estimates of computed results. Second, female students, on average, have higher scores on recognizing the relative number size than male students, even though only a small effect size is found. And, third, the achievements of the students in mathematics are significantly correlated with their number sense, as measured by the average grade for the academic year of 5th-grade students.

Classification: F22 F23 D62 D63 C32 C33

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