**ZMATH 2009e.00348**

**Yang, Der-Ching; Li, Mao-neng Fred; Li, Wei-Jin**

**Development of a computerized number sense scale for third graders: reliability and validity analysis.**

Int. Electron. J. Math. Educ. 3, No. 2, 110-124 (2008).

Summary: This study was to develop a computerized number sense scale (CNST) to assess the performance of students who had already completed the 3rd-grade mathematics curriculum. In total, 808 students from representative elementary schools, including cities, country and rural areas of Taiwan, participated in this study. The results of statistical analyses and content analysis indicated that this computerized number sense scale demonstrates good reliability and validity. Cronbach's $\alpha$ coefficient of the scale was .8526 and its construct reliability was .805. In addition, the 5-factor number sense model was empirically and theoretically supported via confirmatory factor analysis and literature review.

*Classification:* F22 D62 R30 C80
*Keywords:* computerized testing; confirmatory factor analysis; number sense; reliability; validity