Public Abstract

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Title:Examining the technical adequacy of Curriculum-Based Measurement progress monitoring in early numeracy using handheld technology

The purpose of this study was to examine the use of six early numeracy measures to monitor the mathematics progress of kindergarten and first grade students across 13 weeks. Seventy one kindergarteners were administered oral counting, number identification, missing number, and quantity discrimination measures weekly for 13 weeks. Simultaneously, seventy five first grade students were administered oral-counting, number identification, missing number, next number, number facts, and quantity discrimination measures weekly for 13 weeks. All data was collected via PDA Palm Pilot handheld technology with web-based data management supplied by Wireless Generation, Inc. (mclass:Math software). Alternate form reliability was adequate for instructional decision making on some measures, and low reliability was reported for quantity discrimination, as well as for the next number and number facts measures. Concurrent criterion validity coefficients comparing the measures with student performance on a standardized assessment resulted in weaker coefficients as compared to previous studies that have compared similar measures with the same standardized test. We used hierarchical linear modeling at each grade level to ascertain the ability of the six measures to model weekly growth trajectories over 13 weeks. All measures produced growth rates that were significant across time, for both kindergarten and first grade, with linear growth observed in all measures.