

ZMATH 2008a.00185

Hook, William; Bishop, Wayne; Hook, John

A quality math curriculum in support of effective teaching for elementary schools.

Educ. Stud. Math. 65, No. 2, 125-148 (2007).

Summary: This paper presents a curriculum, textbook and test result analysis for the new (to California) elementary school “Key Standard” mathematics curriculum, transplanted in 1998 from its foreign roots in Asia and Europe, locations with far different cultural and economic backgrounds. Based on topic analysis methods developed by Michigan State University, this curriculum is a “quality” curriculum, since it is closely aligned with the curriculum of the six leading TIMSS math countries. Five-year test results are presented for two cohorts totaling over 13,000 students, all from four “early adoption” urban districts where 68% of the students were economically disadvantaged. Included are two cohorts of English learning immigrants totaling over 4,400 students. Performance was found to be statistically superior to similar (control) districts which continued with the old 1991 curriculum and textbooks ($0.003 < p < 0.015$). The focus of this paper is on the transition from far-below to above average learning performance of these students over the 1998-2002 period.

Classification: D32 D33 D20

Keywords: elementary school math; international math; TIMSS topics analysis methods; TIMSS quality math curricula; California math curriculum; California math 5 year test results; performance rate improvement analysis; independent sample t -test; effective math teaching; disadvantaged students; English learning immigrant students; urban elementary schools; suburban elementary schools; transition to a rigorous curriculum

doi:10.1007/s10649-006-9050-4