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Third-year high school mathematics curriculum: effects of content organization and curriculum implementation.

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Summary: We examined the effect of curriculum organization in US high schools where students could freely choose to study mathematics from textbooks that employed one of two types of content organization, an integrated approach or a (traditional) subject-specific approach. The study involved 2,242 high school students, enrolled in either Course 3 or Algebra 2, in 10 schools in 5 geographically dispersed states. Taking account of curriculum implementation and students' prior mathematics learning, we analyzed two end-of-year outcome measures: a test of common objectives and a standardized achievement test. Our hierarchical linear models with three levels showed that students in the integrated curriculum scored significantly higher than those in the subject-specific curriculum on the common objectives test. In both outcome measures, gender and prior achievement were significant student-level predictors. In the standardized achievement test, ethnicity was a moderating factor. At the teacher-level, in addition to curriculum type, teachers' orientation and free and reduced lunch eligibility were significant moderating factors. Opportunity to learn, implementation fidelity, teacher experience, and professional development were not significant predictors.

Classification: D34 B74 U24 C34

Keywords: curriculum comparison; high schools; mathematics; mathematics curriculum; secondary curriculum; textbooks

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