

Learning algebra too early may harm some students, study says

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(Phys.org) -- Learning about all those x's, y's and quadratic equations too early in life may do more harm than good for some students, a new University of California, Davis, study says.

The study will be presented at the annual conference of the American Educational Research Association in Vancouver, Canada.

In the study, UC Davis School of [Education](#) professors Michal Kurlaendar and Heather Rose, together with education programs consultant Don Taylor, found that the lowest-performing eighth-grade math students — who are least likely to be prepared for algebra — may be academically harmed by a policy that requires all eighth graders to take the course.

Such a universal policy, first proposed by the California Board of Education, does not take into account the skills and needs of individual students, the researchers argue.

Much of current education policy — including proposed policy by the California state Board of Education — bears out that, overall, students who complete algebra earlier are more likely to take advanced math courses in high school, graduate from college and earn more money in their lifetimes.

The study is the first of its kind to focus solely on the impact of placing the lowest-performing students in eighth-grade algebra.

“The ‘algebra for all’ argument is that taking algebra in the eighth grade will benefit minorities and low-income groups,” said Rose. “But our study found that the lowest-performing students, composed significantly of low-income students of color, did not benefit on standardized tests and had significantly lower GPAs than their peers, which may be a result of unfavorable comparisons to higher-performing students in the same courses.”

Low-performing students more often fail algebra in the eighth grade because they have not received the additional support they need to succeed, requiring them to take the course again in ninth grade, the study reported.

“Although placement in algebra courses as soon as possible should remain a goal to ensure students are not tracked out of college placement, we believe that a universal eighth-grade [algebra](#) policy has not been proven to benefit all and requires more research to better understand potential issues,” said Rose. “We have an obligation as educators to ensure that the lowest-performing [students](#) do not see school as a punishment in the form of lower grades, social embarrassment and parental ire.”

This paper will be presented at the AERA Conference at the Vancouver Convention Center Sunday, April 15, East Ballroom C, from 8:15 a.m. to 9:45 a.m.

Provided by UC Davis

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