

Accelerated Reader and Accelerated Math are Most Cost-Effective Methods to Improve Student Achievement

Introduction

One frequent criticism of education research is it ignores practical issues like cost. Countless studies document the impact of various programs and techniques on student learning, but very few report the cost of these programs, a factor key to making education research relevant and of practical use to budget-conscious schools.

This study compared the cost-effectiveness of 22 approaches for raising student achievement, including Renaissance Accelerated Reader® and Renaissance Accelerated Math®. Stuart Yeh characterized Accelerated Reader and Accelerated Math as rapid assessments, systems that provide non-judgmental testing feedback to students and teachers immediately after each test, multiple times per, regarding student performance. Accelerated Reader and Accelerated Math were the only two rapid assessments included in Yeh's review.

According to Yeh, many popular policy alternatives for improving school achievement have very modest gains in student achievement in comparison with implementing Accelerated Reader and Accelerated Math, and those that yield comparable achievement gains cost substantially more (see Graph 1, next page).

Summarized from

Yeh, S. S. (2010). The cost-effectiveness of 22 approaches for raising student achievement. *Journal of Education Finance*, 36(1), 38–75.
http://works.bepress.com/cgi/viewcontent.cgi?article=1002&context=stuart_yeh

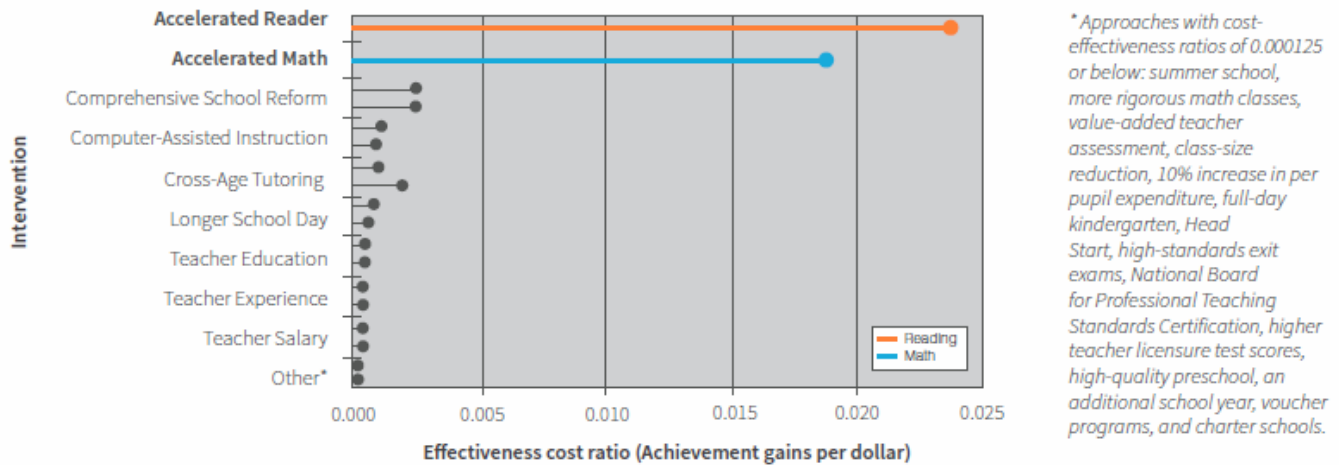
Main Findings

Accelerated Reader and Accelerated Math (characterized in this study as rapid assessment programs) were substantially more effective and less costly than alternative interventions.

Researcher

Stuart S. Yeh, Ph.D., is an associate professor of evaluation studies in the Department of Organizational Leadership, Policy, and Development in the College of Education and Human Development at the University of Minnesota, Minneapolis.

Graph 1. Accelerated Reader and Accelerated Math Yield Substantially Higher Gains in Student Achievement



Study Description

Yeh, a University of Minnesota researcher, is an expert at incorporating cost and impact on achievement to compare educational interventions. He begins to by standardizing cost and achievement data, so that the programs he reviews are placed on a level playing field.

This study, which appeared in a peer-reviewed journal, evaluated the effectiveness of using Accelerated Reader and Accelerated Math (i.e., rapid assessment programs) to improve student performance in reading and math. The goal was to determine which programs or interventions are most cost-effective in increasing student achievement.

Using best-evidence estimates drawn from available data, Yeh conducted a meta-analysis of several popular policy alternatives for improving student achievement to determine the relative cost-effectiveness of each approach, including rapid assessment; Comprehensive School Reform (CSR); cross-age tutoring; computer-assisted instruction; a longer school day; increases in teacher education, experience, and salaries; summer school; more rigorous math classes; value-added teacher assessment; class-size reduction; a 10% increase in per pupil expenditure; full-day kindergarten; Head Start; high-standards exit exams; National Board for Professional Teaching Standards (NBPTS) Certification; higher teacher licensure test scores; high-quality preschool; an additional school year; voucher programs; and charter schools.

Results

Student Achievement

Comparisons of gains in student achievement suggest that Accelerated Reader and Accelerated Math are several times more effective at raising student achievement than nearly all of the other educational interventions studied. Specifically, Accelerated Reader and Accelerated Math are twice as effective as high-quality preschool, summer school, or full-day kindergarten; 3 times as effective as class-size reduction or a 10% increase in per pupil expenditure; 5 times as effective as voucher programs or value-added teacher assessment; 6 times as effective as a longer school day; 31 times as effective as higher licensure test scores; 58 times as effective as charter schools; and 97 times as effective as NBPTS certification. Both CSR and rapid assessment had effect sizes in the moderately positive range ($d = +0.51$ compared to $d = +0.29$, respectively).

Cost-effectiveness

Because of the relatively low cost of Accelerated Reader and Accelerated Math, the programs' achievement gains per dollar are considerably higher than other interventions:

- 9 times gains from CSR
- 68 times gains from a longer school day
- 170 times gains from summer school
- 265 times gains from class-size reduction
- 283 times gains from a 10% increase in preexisting patterns of educational expenditures
- 787 times gains from Head Start
- 2,361 times gains from NBPTS certification
- 3,863 times gains from voucher programs
- 42,497 times gains from charter schools

Conclusion

Rapid assessment systems such as Accelerated Reader and Accelerated Math are dramatically more effective than all but one of the interventions studied and are considerably less costly than all of the interventions. Funding for rapid assessment is likely to be a much more productive use of scarce resources compared with the other approaches Yeh considered.