

Research We're Reading: Curriculum Implementation



We know that instructional materials play a major role in students' educational experiences, and robust research demonstrates they have profound impact on achievement. However, high-quality curricula and supplemental materials are often missing from classrooms, especially those occupied by low-income and minority students. **We've curated these resources to bring you a deeper understanding about what high-quality materials look like, the cost-effective impact they have on academic outcomes, and what auxiliary supports are necessary to capitalize on curricular resources.**

The Opportunity Myth (TNTP)

The Opportunity Myth highlights the dearth of quality instructional resources (grade-appropriate assignments, rigorous instruction, engagement with material, and high expectations from teachers) in American classrooms. Though most students lack these resources – which equate to wasting over six months of classroom time – the problem is most pronounced for students of color, low-income students, English language learners, and students with disabilities. TNTP provides recommendations to improve access to these key resources to support student achievement and more equitably distribute opportunity among students.

Are Math Assignments Measuring Up? (Ed Trust West)

Are Math Assignments Measuring Up? analyzes 1,800 middle school math assignments and finds that the great majority encourage practicing basic, rote skills. In fact, only 9% of assignments require a high cognitive demand from students with half as many cognitively demanding assignments at high-poverty as compared to low-poverty schools.

How Teachers Judge the Quality of Instructional Materials (Hewlett/WestEd)

How Teachers Judge the Quality of Instructional Materials finds that teachers rarely have access to pre-defined criteria for choosing materials or guidance from school or district leadership. Instead, they self-identify criteria falling into four main areas: accuracy & visual appeal, alignment to standards & depth of knowledge, ease of use & support, and engagement & ability to meet student needs. Teachers rely on their own experience and that of their colleagues to judge materials against these criteria.

Aligned Curricula and Implementation of Common Core State Mathematics Standards (Rand)

Aligned Curricula and Implementation of Common Core State Mathematics Standards offers analysis about Common Core alignment among math teachers. Survey results suggest that most math materials used in 2015-16 were not aligned to state standards even though most teachers are aware of Common Core grade-level topics. This widespread misalignment of materials means that students, especially highly vulnerable student populations, are less engaged in grade-appropriate work.

Successful Implementation of High-Quality Materials (Center for American Progress)

Successful Implementation of High-Quality Materials presents five case studies to identify approaches to rigorous implementation of high-quality materials. Importantly, high-quality materials do not produce positive student results unless paired with equally high-quality professional learning. Authors find that this professional learning should be job-embedded, purposefully aligned to standards, and built around high-quality materials.

Achievement Effects of Four Early Elementary School Math Curricula (Mathematica & SRI)

Achievement Effects of Four Early Elementary School Math Curricula investigates elementary math curricula (Investigations in Number, Data, and Space; Math Expressions; Saxon Math; and Scott Foresman–Addition Wesley Mathematics) for effectiveness in 1st and 2nd grade classrooms. The study finds significant differences among the curricula in terms of student achievement, suggesting that curriculum is an impactful input for student success.

The Window of Assignments (The Education Trust)

The Window of Assignments demonstrates the dire need to analyze and improve assignments, which serve as students' most impactful point of connection with learning. The Education Trust reviewed 1,800 middle school assignments, finding that only 13% facilitated high cognitive demand, 9% required writing multiple paragraphs, and just 11% of assignments at high-poverty schools included topics relevant for middle schools. Authors suggest that in order to ensure that all students – particularly low-income, English language learners, and students of color – are ready for college and career, school systems have to engage in assignment analysis to understand current inequities and choose materials that are both engaging and rigorous.

Choosing Blindly: Instructional Materials, Teacher Effectiveness, and the Common Core (Chingos & Whitehurst)

Choosing Blindly: Instructional Materials, Teacher Effectiveness, and the Common Core chronicles the positive impact that choosing higher quality materials can have on student achievement. However, while high-quality material selection is both influential and relatively cost-effective, as of 2012, little information existed about material efficacy to help schools and districts make good choices. The report concludes by offering specific recommendations around collecting and using data to select instructional materials.

The Effects of Research-Based Curriculum Materials and Curriculum-Based Professional Development on High School Science Achievement (Taylor, Kowalski, Getty, Wilson, and Carlson)

The Effects of Research-Based Curriculum Materials and Curriculum-Based Professional Development on High School Science Achievement focuses on the interaction between science materials with aligned professional development and student achievement. The authors' criteria for high-quality science materials include connecting core concepts to other content areas, allowing students to engage with previous understandings, encouraging students to think about their own learning, and providing opportunities to question assumptions. The study finds that research-based materials paired with professional development have a strong positive effective on classroom instructional practices and a modest but positive effect on student achievement.

The Hidden Value of Curriculum Reform (Center for American Progress)

The Hidden Value of Curriculum Reform examines curriculum selection processes by state and the relationship between material cost and quality. Authors find that elementary school math is particularly primed for curriculum adjustments as the return on investment for higher quality curricula is far higher than other potential reforms – up to 40 times the return on class-size reduction. As a high-impact, low-cost lever for student achievement gains, curricula improvements should garner more research funding and attention.

Mathematics Curriculum Effects on Student Achievement in California (Koedel, Li, Polikoff, Hardaway, Wrabel)

Mathematics Curriculum Effects on Student Achievement in California compares student achievement effects for four popular elementary school math curricula in California (2008 and 2009 school years): enVision Math California; California Math; California Mathematics: Concepts, Skills, and Problem Solving; and California HSP Math. Authors found that California Math was the most effective, boosting test scores 0.05 to 0.08 standard deviations on a 3rd grade standardized test. This difference is highly meaningful since there is effectively no cost to choosing a more effective curriculum over a less effective choice.

Large-Scale Evaluations of Curricular Effectiveness: The Case of Elementary Mathematics in Indiana (Bhatt & Koedel)

Large-Scale Evaluations of Curricular Effectiveness: The Case of Elementary Mathematics in Indiana evaluates the effectiveness of three elementary school math curricula in Indiana. As measured by the state standardized test, one curriculum performs worse than the other two, demonstrating that curricular differences can impact student achievement. In addition, the least effective curriculum did not lose market share after the adoption cycle, leading authors to conclude that curriculum decision-makers have little information about material effectiveness.