



CENTRE FOR EDUCATION ECONOMICS

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Editor's Pick

High-Dosage Tutoring and Reading Achievement: Evidence from New York City

By: Roland G. Fryer and Meghan Howard Noveck

NBER Working Paper 23792

[Published version](#)

[Working paper version \(free\)](#)

Does tutoring work? As English parents spend ever-increasing amounts on private tutors for their children, one would assume the benefits of tutoring are self-evident. However, as children aren't randomly assigned to receive tutoring, it's difficult to know whether or not they would have performed worse without receiving it.

In the past decade, an increasing number of rigorous studies have shown that disadvantaged pupils, particularly from ethnic minorities, benefit from high-dosage tutoring in mathematics. Still, it's an open question whether or not this improvement also applies to reading performance. In fact, there's much less evidence of interventions that successfully raise performance in reading in general, at least among secondary school pupils.

In this study, the authors investigate whether a high-dosage tutoring after-school programme in New York City state schools benefited year 6-8 pupils. The programme meant that a subset of pupils in treatment schools, which were randomly selected, received 45-60 minutes daily after-school tutoring in reading. The experiment targeted pupils with basic fluency, but who were lagging behind peers in the same year, using a detailed tutoring curriculum developed by literacy experts and teachers.

Since pupils were randomly assigned to the programme, the authors solve the problem that certain children are more or less likely to receive tutoring. In this way, they can retrieve the causal impact of tutoring on reading achievement of the programme.

Treatment increased the amount of tutoring received by 38 percentage points, which translates into 67 days of tutoring per year – during which children read on average 403 pages a year. The experiment therefore increased the level of tutoring received.

But while the experiment increased attendance by 1.2 percentage points, it had no statistically significant effects on pupil performance in English Language Art (or mathematics) tests on average. Furthermore, the effect is essentially the same among pupils from different economic backgrounds and neighbourhoods – and does not differ depending on the level of English proficiency or language spoken at home either. There’s further little evidence that tutor characteristics explain differences in effectiveness on average.

The only exception to this story appears to be pupils’ ethnicity: whereas African-American pupils benefit from tutoring, Hispanic pupils do not.¹ For example, the impact on reading achievement among the former amounts to the equivalent to 9 PISA points per year, whereas it amounts to a statistically insignificant impact of 1 PISA points per year among the latter. Similarly, the impact on attendance was 2 percentage points among African-American pupils, compared with 0.8 percentage points among Hispanic pupils.

Also, unlike in the analysis of average differences in tutoring effectiveness, the authors find tentative evidence that the differences between African-American and Hispanic pupils can be explained by tutor characteristics, such as ethnicity and quality scores obtained in the initial screening process.

Overall, therefore, the paper indicates that the effects of high-dosage tutoring in reading are likely to depend on both the background of pupils as well as tutors. As tutoring is labour intensive and therefore costly – the intervention discussed here cost \$2,200 per pupil per year – it’s crucial that policymakers and schools, through similar trials, identify and target pupils who are most likely to benefit from it, and tutors who are most likely to raise these pupils’ performance, rather than viewing tutoring as a blanket panacea to raise reading comprehension among all low-performing children.

¹ There are too few White and Asian pupils for estimates to be reliable for these sub-groups.

Effects of Policy and Practice – Developed World

Education Technology: An Evidence-Based Review

By: Maya Escueta, Vincent Quan, Andre Joshua Nickow, and Philip Oreopoulos

NBER Working Paper No. 23638

[Published version \(free\)](#)

In recent years, there has been widespread excitement around the potential for technology to transform learning. As investments in education technology continue to grow, students, parents, and teachers face a seemingly endless array of education technologies from which to choose – from digital personalized learning platforms to educational games to online courses. Amidst the excitement, it is important to step back and understand how technology can help – or in some cases hinder – how students learn. This review paper synthesizes and discusses experimental evidence on the effectiveness of technology-based approaches in education and outlines areas for future inquiry. In particular, the authors examine RCTs across the following categories of education technology: (1) access to technology, (2) computer-assisted learning, (3) technology-enabled behavioural interventions in education, and (4) online learning. While this review focuses on literature from developed countries, it also draws upon extensive research from developing countries. The authors hope this literature review will advance the knowledge base of how technology can be used to support education, outline key areas for new experimental research, and help drive improvements to the policies, programs, and structures that contribute to successful teaching and learning.

School Boards and Student Segregation

By: Hugh Macartney and John D. Singleton

NBER Working Paper No. 23619

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This paper provides the first causal evidence about how elected local school boards affect student segregation across schools. The key identification challenge is that the composition of a school board is potentially correlated with unobserved determinants of school segregation, such as the pattern of household sorting and the degree to which boards are geographically constrained in

defining zones of attendance. The authors overcome this issue using a regression discontinuity design at the electoral contest level, exploiting quasi-random variation from narrowly-decided elections. Such an approach is made possible by a unique dataset, which combines matched information about North Carolina school board candidates (including vote shares and political affiliation) with time-varying district-level racial and economic segregation outcomes. Focusing on the political composition of school board members, two-stage least squares estimates reveal that (relative to their non-Democrat counterparts) Democrat board members decrease racial segregation across schools. These estimates significantly differ from their ordinary least squares counterparts, indicating that the latter are biased upward (understating the effects). The authors' findings suggest that school boards realise such reductions in segregation by shifting attendance zones, a novel measure of which we construct without the need for exact geocoded boundaries. While the effect of adjusting boundaries does not appear to be offset by within-district neighbourhood re-sorting in the short run, we uncover causal evidence of 'white flight' out of public schools in districts in which boards have acted to reduce segregation.

No Student Left behind? Evidence from the Programme for School Guidance in Spain

By: J. Ignacio García-Pérez and Marisa Hidalgo-Hidalgo

Economics of Education Review (October 2017)

[Published version](#)

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This paper evaluates the effects of a remedial education programme implemented in Spain between 2005 and 2012 that offered after-school classes for underperforming students from poor socioeconomic backgrounds. The authors use two different estimation strategies, re-weighting estimators and propensity score matching, and address the existence of selection bias. They find that this programme had a substantial positive effect on children's academic achievement: the probability of falling behind the general progress of the group declined by between 3.5 and 6.4 percentage points and mean reading scores increased by between 8.5 and 17.4% of one standard deviation. They also find that a larger exposure to the programme improves students' scores: whereas students in schools that participated in the programme for at most two years do not experience any significant positive effect, those in schools that participated for at least three years did. The programme significantly reduced the probability of belonging to the bottom part of the distribution (by between 3.2 and 7.7 percentage points) and improved mean scores (by between 8 and 21.5% of one standard deviation). Finally, the authors find that the impact of the programme is much stronger for students in rural schools than for students in urban schools.

Effects of Policy and Practice – Developing World

Can Outsourcing Improve Liberia's Schools? Preliminary Results from Year One of a Three-Year Randomized Evaluation of Partnership Schools for Liberia

By: Mauricio Romero, Justin Sandefur, and Wayne Aaron Sandholtz

Center for Glocal Development Working Paper 462

[Published version \(free\)](#)

Liberia's education system lags behind most of the world in both access and quality. Net primary enrolment was only 38% in 2015, and in 2013, among adult women who finished elementary school, only 25% could read a complete sentence. Under the new Partnership Schools for Liberia (PSL) program, the Liberian government delegated management of 93 public schools to eight contractors. Teachers in PSL schools remained on government payroll; schools remained free to students and the property of the government; and contractors were prohibited from screening students based on ability or other characteristics. In addition to new management, PSL brought extra resources. While the government runs ordinary public schools on a budget of approximately \$50 per pupil, PSL contractors received an additional \$50 per pupil, as the total of \$100 was deemed a realistic medium-term goal for public expenditure on primary education nationwide. While teachers are in short supply in Liberia's public schools, the Ministry of Education made special staffing arrangements for PSL. Because assignment to the PSL and comparison groups was random, differences between the two groups can be attributed to the program. Students in partnership schools scored 0.18 standard deviations higher in English and 0.18 standard deviations higher in mathematics than students in regular public schools. While starting from a very low level by international standards, this is the equivalent of 0.56 additional years of schooling for English and 0.66 additional years of schooling for math. Yet costs were high, in terms of government staffing and private subsidies. Budget estimates for some contractors' in year 1 exceeded the program's long-term target.

The Importance of Information Targeting for School Choice

By: Kehinde F. Ajayi, Willa F. Friedman, and Adrienne M. Lucas

American Economic Review (May 2017)

[Published version](#)

[Working paper slides \(free\)](#)

Although school choice programs are common, we know little about the underlying decision-making processes. In this study, the authors randomly assigned 900 junior high schools in Ghana, a country with universal secondary school choice, to 1 of 3 treatment arms: (1) information to students, (2) information to students and guardians, and (3) control group. They observe changes in beliefs, behaviours, and the decision maker's identity through a survey of guardians. The intervention increased the likelihood that guardians were involved with and informed about the school selection process. Moreover, specifically targeting guardians led to significantly larger changes for most outcomes.



General Education

The Rising Return to Non-Cognitive Skill

By: Per-Anders Edin, Peter Fredriksson, Martin Nybom, and Björn Öckert

IZA Discussion Paper No. 10914

[Published version \(free\)](#)

The authors examine the changes in the relative rewards to cognitive and non-cognitive skill during the time period 1992–2013. Using unique administrative data for Sweden, they document a secular increase in the returns to non-cognitive skill, which is particularly pronounced in the private sector and at the upper-end of the wage distribution. Workers with an abundance of non-cognitive skill were increasingly sorted into occupations that were intensive in: cognitive skill; as well as abstract, non-routine, social, non-automatable and offshorable tasks. Such occupations were also the types of occupations which saw greater increases in the relative return to non-cognitive skill. Moreover, they show that greater emphasis is placed on non-cognitive skills in the promotion to leadership positions over time. These pieces of evidence are consistent with a framework where non-cognitive, inter-personal, skills are increasingly required to coordinate production within and across workplaces.

The Teacher Labour Market, Teacher Turnover and Disadvantaged Schools: New Evidence for England

By: Rebecca Allen, Simon Burgess, and Jennifer Mayo

Education Economics (forthcoming)

[Published version](#)

[Working paper version \(free\)](#)

The authors study the market for teachers in England, in particular teacher turnover. They show that there is a positive raw association between the level of school disadvantage and the turnover rate of its teachers. This association diminishes as they control for school, pupil, and local teacher labour market characteristics, but is not eliminated. The remaining association is largely accounted for by teacher characteristics, with the poorer schools hiring much younger teachers on average. They interpret this market equilibrium allocation as either deriving from the preferences of young teachers, or as reflecting the low market attractiveness of disadvantaged schools.