

**CMRE Research Digest  
2016-05 (4)**

*Editor: Gabriel Heller-Sahlgren*

**Table of Contents**

<b>Editor's Pick.....</b>	<b>1</b>
<b>Effects of Policy and Practice - Developed World.....</b>	<b>3</b>
<b>Effects of Policy and Practice - Developing World.....</b>	<b>6</b>
<b>General Education .....</b>	<b>8</b>

## Editor's Pick

### **What Do Test Scores Miss? The Importance of Teacher Effects on Non-Test Score Outcomes**

*By: C. Kirabo Jackson*

**NBER Working Paper No. 22226 (May 2016)**

[Published version](#)

[Free version](#)

Everybody agrees that teachers are important for improving academic outcomes. But how important are they for improving non-cognitive outcomes? There's surprisingly little research analysing this issue. This is a significant gap since research indicates that test scores do not pick up such outcomes – such as adaptability, self-restraint, and motivation – which have been found to be important for longer-term life outcomes. This implies that measures of teacher effectiveness likely to function better if they could also isolate teachers' impact on non-cognitive outcomes, rather than merely on academic results.

In this paper, Kirabo Jackson sheds new evidence on this issue. Exploiting administrative data from secondary-school pupils in North Carolina, he uses a number of behavioural outcomes as proxies for pupils' non-cognitive skills – suspensions, absences, course marks in ninth grade, and whether they enrolled in tenth grade on time. By isolating the variation in these measures that is unrelated to test scores, he is then able to create a teacher-effectiveness index that solely measures non-cognitive outcomes.

The author then also creates a regular value-added metric based on test scores. Importantly, there is only a weak correlation between the different measures of teacher effectiveness, suggesting that they indeed capture different skills. He then sets out to analyse how the different metrics predict future pupil outcomes.

The results are fascinating. When using the regular value-added metric, a one standard deviation increase in teacher effectiveness predicts a 0.14 percentage-point higher likelihood of graduating from high school. However, when including teacher effectiveness in raising behavioural outcomes, this impact decreases slightly to 0.11 percentage points – while a one standard deviation increase in non-cognitive teacher effectiveness boosts this likelihood by 0.78 percentage points further. The full predictive value of teacher effectiveness on the likelihood of graduating increases by fully 249% when also including the non-cognitive measure. Results are similar when analysing the likelihood of dropping out, that pupils take the SAT university admissions test, their high-school GPA, and their self-proclaimed plans to attend four-year colleges.

Certainly, more research is necessary, especially to verify that these effects are similar in other institutional contexts. It is also worth noting that many of the behavioural outcomes can be manipulated, suggesting it may be difficult to use them in accountability systems. Other alternative metrics must therefore have to be developed and tested for this purpose.

Furthermore, while the research shows that teachers have important effects on non-cognitive outcomes, which in turn affect pupils' futures, it is silent on what teacher characteristics that predict their effectiveness in this respect. Previous research searching for observable characteristics explaining test-score based value added has been relatively futile – but it is possible that researchers may be more successful when it comes to predicting teachers' non-cognitive effectiveness.

Regardless, the paper strongly suggests that teachers' contribution to the future of pupils go far beyond their improving academic outcomes, which is something many people have believed but no one has thus far been able to show rigorously. This makes it an interesting and important contribution – both to the literature and to policymakers worldwide.

## **Effects of Policy and Practice – Developed World**

### **Charters Without Lotteries: Testing Takeovers in New Orleans and Boston**

*By: Atila Abdulkadiroglu, Joshua D. Angrist, Peter D. Hull, and Parag A. Pathak*

**American Economic Review (forthcoming)**

[Published version](#)

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

Charter takeovers are traditional public schools restarted as charter schools. The authors develop a grandfathering instrument for takeover attendance that compares students at schools designated for takeover with a matched sample of students attending similar schools not yet taken over. Grandfathering estimates from New Orleans show substantial gains from takeover enrolment. In Boston, grandfathered students see achievement gains at least as large as the gains for students assigned charter seats in lotteries. A non-charter Boston turnaround intervention that had much in common with the takeover strategy generated gains as large as those seen for takeovers, while other more modest turnaround interventions yielded smaller effects.

### **Promise and Paradox: Measuring Students' Non-Cognitive Skills and the Impact of Schooling**

*By: Martin R. West, Matthew A. Kraft, Amy S. Finn, Rebecca E. Martin, Angela L. Duckworth, Christopher F. O. Gabrieli, and John D. E. Gabrieli*

**Educational Evaluation and Policy Analysis (March 2016)**

[Published version](#)

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

The authors use self-report surveys to gather information on a broad set of non-cognitive skills from 1,368 eighth graders. At the student level, scales measuring conscientiousness, self-control, grit, and growth mind-set are positively correlated with attendance, behaviour, and test-score gains between fourth grade and eighth grade. Conscientiousness, self-control, and grit are unrelated to test-score gains at the school level, however, and students attending over-subscribed charter schools score lower on these scales than do students attending district schools. Exploiting admissions lotteries, the authors find positive impacts of charter school attendance on achievement and attendance but negative impacts on these non-cognitive skills. They provide suggestive

evidence that these paradoxical results are driven by reference bias or the tendency for survey responses to be influenced by social context.

**When You Say Nothing at All: The Predictive Power of Student Effort on Surveys**

*By: Colin Hitt, Julie Trivitt, and Albert Cheng*

**Economics of Education Review (June 2016)**

[Published version](#)

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

Character traits and non-cognitive skills are important for human capital development and long-run life outcomes. Research in economics and psychology now shows this convincingly. But research into the exact determinants of non-cognitive skills has been slowed by a common data limitation: most large-scale datasets do not contain adequate measures of non-cognitive skills. This is particularly problematic in education policy evaluation. The authors demonstrate that within any survey dataset, there is important latent information that can be used as a proxy measure of non-cognitive skills. Specifically, they examine the amount of conscientious effort that students exhibit on surveys, as measured by their item response rates. They use six nationally-representative, longitudinal surveys of American youth. They find that the percentage of questions skipped during the baseline year when respondents were adolescents is a significant predictor of later-life educational attainment, net of cognitive ability. Insofar as item response rates affect employment and income, they do so through their effect on educational attainment. The pattern of findings gives compelling reasons to view item response rates as a promising behavioural measure of non-cognitive skills for use in future research. They posit that response rates are a measure of conscientiousness, though additional research is required to determine what exact non-cognitive skills are being captured by item response rates.

**Does Early Educational Tracking Increase Migrant-Native Achievement Gaps? Differences-In-Differences Evidence Across Countries**

*By: Jens Ruhose and Guido Schwerdt*

**Economics of Education Review (June 2016)**

[Published version](#)

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

The authors study whether early tracking of students based on ability increases migrant-native achievement gaps. To eliminate confounding impacts of unobserved country traits, we employ a differences-in-differences strategy that exploits international variation in the age of tracking as well as student achievement before and after potential tracking. Based on pooled data from 12 large-scale international student assessments, they show that cross-sectional estimates are likely to be downward-biased. Our differences-in-differences estimates suggest that early tracking does not significantly affect overall migrant-native achievement gaps, but they find evidence for a detrimental impact for less integrated migrants.

## Effects of Policy and Practice – Developing World

### **The Effect of Single-Sex Education on Academic Outcomes and Crime: Fresh Evidence from Low-Performing Schools in Trinidad and Tobago**

*By: C. Kirabo Jackson*

**NBER Working Paper No. 22222**

[Published version](#)

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

In 2010, the Ministry of Education in Trinidad and Tobago converted 20 low-performing pilot secondary schools from co-ed to single-sex. The author exploits these conversions to identify the causal effect of single-sex schooling holding other school inputs (such as teacher quality and leadership quality) constant. After also accounting for student selection, both boys and girls in single-sex cohorts at pilot schools score 0.14 standard deviations higher in the academic subjects on national exams. There is no robust effect on non-academic subjects. Additionally, treated students are more likely to earn the secondary-school leaving credential, and the all-boys cohorts have fewer arrests. Survey evidence reveals that these single-sex effects reflect both direct gender peer effects due to interactions between classmates, and also indirect effects generated through changes in teacher behaviour. Importantly, these benefits are achieved at zero financial cost.

### **The Long-run Effects of Treated Water on Education: The Rural Drinking Water Program in China**

*By: Jing Zhang and Lixin Colin Xu*

**Journal of Development Economics (September 2016)**

[Published version](#)

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

Since little is known about the long-run effect of treated water, the authors examine the educational benefit to rural youth in China from a major water treatment program started in the 1980s. By employing a data set covering two decades and encompassing more than 4,700 individuals between ages 18 and 25, they find that, on average, the programme increased the completed grades of

education of rural youth by 1.1 years. Moreover, the effect was highly heterogeneous across gender and age of exposure. Rural girls benefited from water treatment more than rural boys such that the water treatment program completely eliminated the gender gap in education in treated villages. Young rural people with access to treated water in early childhood experienced significantly higher gains in schooling attainment (i.e., by more than a year) than those that gained access at later stages of life. The analysis suggests that this program was cost-effective.

## General Education

### **The Impact of Maternal Depression on Child Academic and Socioemotional Outcomes**

*By: Heather M. Dahlen*

**Economics of Education Review (June 2016)**

[Published version](#)

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

This paper examines how maternal depression affects children's test scores and socio-emotional outcomes. An empirical challenge surrounding this research is to address the omission of unobserved factors affecting both maternal depression and child outcomes. By implementing bounding, an underutilized estimation technique not previously applied to maternal depression studies, the authors are able to generate ranges of the causal impact of maternal depression on child test scores and socio-emotional outcomes. Primary findings include moderately-sized reductions in children's socio-emotional measures and slight reductions in children's test scores when a mother reported any level of depression in single-period analyses, an increase in magnitude of the findings for kindergarten students as severity of depression increased, and larger impacts on reading scores of third graders when their mother was depressed in multiple time periods.

### **What About Certificates? Evidence on the Labor Market Returns to Non-degree Community College Awards in Two States**

*By: Di Xu and Madeline Trumble*

**Educational Evaluation and Policy Analysis (June 2016)**

[Published version](#)

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

The annual number of certificates awarded by community colleges has increased dramatically, but relatively little research has been conducted on the economic benefits of certificates in the labour market. Based on detailed student-level information from matched college transcript and employment data in two states, this article estimates the relationship between earning a certificate and student

earnings and employment status after exiting college. The authors' results indicate that certificates have positive impacts on earnings in both states overall, and in cases where there is no impact on earnings, certificates may nonetheless lead to increased probability of employment. In addition, they find substantial variation in the returns across fields of study and, more importantly, across specific programs within a particular field. Finally, in-depth analysis of the industry of employment before and after college enrolment indicates that many adult learners use certificate programs to switch to a new industry, which may not necessarily boost their earnings, at least in the short run. The results therefore point to the importance of including multiple measures to evaluate the benefits of a certificate program, rather than merely evaluating its impact on overall earnings.