

CMRE Research Digest 2014-04 (1)

Editor: Gabriel Heller Sahlgren

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Editor's Pick

The distributional impacts of a universal school reform on mathematical achievements: a natural experiment from Canada

Economics of Education Review (in press)

(<http://www.sciencedirect.com/science/article/pii/S027277571400034X>)

(http://www.cirpee.org/fileadmin/documents/Cahiers_2011/CIRPEE11-35.pdf)

In the last couple of years, Michael Gove has urged teachers to stop using new practices in the classrooms and return to more traditional, academic teaching methods. In this respect, he is going against the tide. In many countries, the idea of progressive teaching methods has gained traction among policymakers, who have begun to introduce them en masse.

In their new paper, economists Catherine Haeck, Pierre Lefebvre, and Philip Merrigan provide strong evidence that Gove might indeed be right in emphasising traditional teaching. In the early 2000s, Quebec implemented an ambitious, universal school reform, which completely revised teaching methods in the province. The reform 'relied on a socio-constructivist teaching approach focused on problem-based and self-directed learning supported by flexible teachers. This approach moved teaching away from the traditional/academic approaches of memorization, repetition, and activity books, to a much more comprehensive approach focused on learning in a contextual setting in which children are expected to find answers for themselves'.

The study is the first to analyse a universal reform of teaching methods in this way. The authors use a so-called 'difference-in-difference' method – and a slightly different version of the method – to study the effects of the reform on maths achievement and behavioural skills. The method compares pupil achievement in Quebec with pupil achievement in other Canadian provinces, prior and after the reform, while also holding constant pupil and family characteristics. By doing so, they can partial out other effects that are just the result of other changes that have nothing to do with the reform.

The authors' findings are striking: the impact of the progressive teaching methods is strongly negative for maths achievement in most grades. As one would expect, the impact is also generally increasing the more time pupils have spent in the new teaching regime. The negative effects also accrue to pupils across the achievement distribution, so there is little evidence that progressive teaching methods are good for some pupils and bad for others. The effects on the domestic measure of achievement are also backed up by analyses of TIMSS and PISA scores.

But did the reform have any positive effects on 'soft' skills? Well, no. On the contrary, the authors find that the reform had mostly negative effects, although many estimates are not statistically significant. But in grades 5-6 and 7-8, the impact is strongly negative for hyperactivity, anxiety, physical aggression, interpersonal competencies, and emotional quotient. In grades 9-10, the impact is also negative for pro-social behaviour, physical aggression, and property offense. The evidence therefore suggests that the effect was negative both in terms of maths achievement and behavioural outcomes.

Overall, the study, which appears very strong, suggests that across-the-board moves toward progressive teaching methods may have strong negative effects on achievement. Previous studies, which do not utilise as strong a methodology, back up these findings although the effects are not as conspicuous. The fact that behavioural outcomes worsen as well suggests that these teaching methods are not good for 'soft' skills either. The policy conclusion is clear: stay away from broad-based changes in teaching methods that are not based on proper research.

Effects of Policy and Practice – Developed World

School Segregation, Educational Attainment, and Crime: Evidence from the End of Busing in Charlotte-Mecklenburg

Quarterly Journal of Economics (vol. 129:1, 2014)

(<http://qje.oxfordjournals.org/content/129/1/435.abstract>)

(http://www.econ.uconn.edu/seminars/20122013/papers/Deming_Billings_Rockoff%5B1%5D.pdf)

By: Stephen B. Billings, David J. Deming, and Jonah Rockoff

This paper studies the end of race-based bussing in Charlotte-Mecklenburg schools (CMS). In 2001, school boundaries in CMS were redrawn dramatically, and half of students received a new assignment. Using addresses measured prior to the policy change, the study compares students in the same neighbourhood that lived on opposite sides of a newly drawn boundary. It finds that both white and minority students score lower on high school exams when they are assigned to schools with more minority students. It also finds decreases in high school graduation and four-year college attendance for whites and large increases in crime for minority males. It concludes that the end of race-based bussing widened racial inequality, despite efforts by CMS to mitigate the effect of segregation through compensatory resource allocation.

Does Attending a STEM High School Improve Student Performance? Evidence from New York City

Economics of Education Review (vol. 40, June 2014)

(https://dl.dropboxusercontent.com/u/33774399/wiswall_webpage/econ_ed_wiswall.pdf)

By: Matthew Wiswall, Leanna Stiefel, Amy Ellen Schwartz, and Jessica Boccardo

This study investigates the role of specialized science, technology, engineering, and mathematics (STEM) high schools in New York City (NYC) in promoting performance in science and mathematics and in closing the gender and race gaps in STEM subjects. Using administrative data covering several recent cohorts of public school students and a rich variety of high schools including over 30 STEMs, the paper estimates the effect of attending a STEM high school on a variety of student outcomes, including test taking and performance on specialised science and mathematics examinations. While comparisons of means indicate an advantage to attending a STEM school, more thorough analysis conditioning on a rich set of covariates, including previous grade test performance, reduces or eliminates this advantage. Females and males in STEMs

do better than their counterparts in Non-STEMs, but the gender gap is also larger in these schools. The paper also finds that the black-white and Hispanic-white gaps are smaller in STEM relative to Non-STEM schools across almost all outcomes, but the Asian-white gap, in contrast, is larger in STEMs relative to Non-STEMs.

School entrance recommendation: a question of age or development?

Education Economics (vol.22:3, 2014)

(<http://www.tandfonline.com/doi/full/10.1080/09645292.2011.645126#.U1f2asfrYo8>)

(<http://econstor.eu/bitstream/10419/37079/1/632110880.pdf>)

By: Julia Horstschräer and Grit Muehler

Fixed cut-off dates regulating school entry create disadvantages for children who are young relative to their classmates. Early and late school enrolment, though, might mitigate these disadvantages. This paper analyses in a first step the factors that determine school entry, if entrance screenings allow for early and late enrolment. Second, the study looks at whether children benefit from a delayed school entry. Using data on a compulsory school entrance screening of a German federal state, it shows that children with impairments in cognitive, socio-emotional, and motor development as well as health but also young children are less likely to be recommended to start school. Delaying school entry allows the delayed children to improve, although their developmental status remains below average. School entrance screenings, thus, induce more flexible school entry rules that attenuate performance differences within a class and, as a result, mitigate disadvantages for children being young compared with their classmates.

Public expenditures, educational outcomes and grade inflation: Theory and evidence from a policy intervention in the Netherlands

Economics of Education Review (vol. 40, June 2014)

(<http://www.sciencedirect.com/science/article/pii/S0272775714000211>)

(<http://www.econstor.eu/bitstream/10419/68254/1/734671911.pdf>)

By: Kristof De Witte, Benny Geys, and Catharina Solondze

This article argues that resource expansion can fail to improve actual student performance because it might cause educators to soften grading standards (i.e., induce grade inflation). The authors' theoretical model shows that, depending on schools' and students' reactions to resource changes, the overall effect of resources on education outcomes is ambiguous. Schools, however, have an

incentive to adjust their grading structure following resource shifts, such that grade inflation is likely to accompany resource-driven policies. Exploiting a quasi-experimental policy intervention in the Netherlands, the paper finds that additional resources may indeed induce grade inflation, particularly when the resource increase is limited.

Does Choice Increase Information? Evidence from Online School Search Behaviour

Conference paper April 2014

[http://www.bus.umich.edu/ConferenceFiles/Subnational-Government-Competition/files/Lovenheim Walsh Does%20Choice%20Increase%20Information%20-%204-14.pdf](http://www.bus.umich.edu/ConferenceFiles/Subnational-Government-Competition/files/Lovenheim%20Walsh%20Does%20Choice%20Increase%20Information%20-%204-14.pdf)

By: Michael F. Lovenheim and Patrick Walsh

This paper examines whether changes in the local school choice environment affect the amount of information parents collect about local school quality, using data on over 100 million searches from greatschools.org. The study links monthly data on search frequency for over 800 geographic areas to information on changes in open enrolment policies, tuition vouchers, charitable scholarship tax credits, tuition tax credits, and local choice opportunities driven by No Child Left Behind sanctions. The results indicate that expansions in school choice rules and opportunities in a given area have large, positive effects on the frequency of searches done for schools in that area. These estimates suggest that the market for local schools is characterised by incomplete information and that the information parents have about the quality of local schools is endogenous to the choice environment they face.

The (Surprising) Efficacy of Academic and Behavioral Intervention with Disadvantaged Youth: Results from a Randomized Experiment in Chicago

NBER Working Paper No. 19862

http://scholar.harvard.edu/files/fryer/files/efficacy_of_academic_and_behavioral_intervention_with_disadvantaged_youth_w19862_jan_2014.pdf

By: Philip J. Cook, Kenneth Dodge, George Farkas, Roland G. Fryer, Jr, Jonathan Guryan, Jens Ludwig, Susan Mayer, Harold Pollack, Laurence Steinberg

There is growing concern that improving the academic skills of disadvantaged youth is too difficult and costly, so policymakers should instead focus either on vocationally oriented instruction for teens or else on early childhood education. Yet this conclusion may be premature given that so few previous interventions have targeted a potential fundamental barrier to school success: “mismatch” between what schools deliver and the needs of disadvantaged youth who have

fallen behind in their academic or non-academic development. This paper reports on a randomized controlled trial of a two-pronged intervention that provides disadvantaged youth with non-academic supports that try to teach youth social-cognitive skills based on the principles of cognitive behavioural therapy (CBT), and intensive individualized academic remediation. The study sample consists of 106 male 9th and 10th graders in a public high school on the south side of Chicago, of whom 95% are black and 99% are free or reduced price lunch eligible. Participation increased math test scores by 0.65 of a control group standard deviation (SD) and 0.48 SD in the national distribution, increased math grades by 0.67 SD, and seems to have increased expected graduation rates by 14 percentage points (46%). While some questions remain about the intervention, given these effects and a cost per participant of around \$4,400 (with a range of \$3,000 to \$6,000), this intervention seems to yield larger gains in adolescent outcomes per dollar spent than many other intervention strategies.

Effects of policy and Practice – Developing World

Incentives to teach badly: After-school tutoring in developing countries

Journal of Development Economics (vol. 108, May 2014)

(<http://faculty.wcas.northwestern.edu/~sjv340/tutoring.pdf>)

By: Seema Jayachandran

Schools in developing countries frequently offer for-profit tutoring to their own students. This potentially gives teachers a perverse incentive to teach less during school to increase demand for their tutoring. Through this mechanism, the market for tutoring can adversely affect student learning, especially for students who do not participate in tutoring. This paper models and presents empirical evidence on these effects, using survey and test score data from Nepal. The evidence suggests that when schools offer for-profit tutoring, teachers teach less during the regular school day. As a consequence, performance on the national secondary-school exam appears to suffer among students with a low propensity to enrol in tutoring. An implication is that discouraging teachers from tutoring their own students or reducing entry barriers for third-party tutors could increase student achievement.

The impact of a Caribbean home-visiting child development program on cognitive skills

Economics of Education Review (vol 39, April 2014)

(<http://www.sciencedirect.com/science/article/pii/S0272775713001702>)

(<http://www.aiid.org/conference/uploads/File/ImpactPaper2008.pdf?PHPSESSID=9264c9ef627dcd7a1526cbc8940814b4>)

By: Wendy Janssens and Christina Rosemberg

This paper provides a short-term impact evaluation of a home-visiting Early Child Development (ECD) program in the Caribbean aimed at vulnerable children from birth to three years. The analysis is based on a quasi-experimental research design including approximately four hundred children in treatment and comparable control communities. The differences-in-differences methodology estimates intention-to-treat effects. One year after implementation, the authors find no significant effects on the cognitive development of the average child, but pronounced differences by birth cohort. The program has significantly improved Fine Motor Skills and Visual Reception scores, related to early reading and writing abilities, of the youngest children aged below 18 months at program start. There is no program impact on the older cohort, whose cognitive development appears to be more strongly correlated with centre-based ECD

services. Language development has not improved for either cohort. The findings suggest that an early window of opportunities may exist for home-based programs.

General education

The kid's speech: The effect of stuttering on human capital acquisition

Economics of Education Review (vol.38, February 2014)

(<http://www.sciencedirect.com/science/article/pii/S027277571300099X>)

(<http://ftp.iza.org/dp5781.pdf>)

By: Daniel I. Rees and Joseph J. Sabia

A number of studies have shown that childhood speech disorders such as stuttering are associated with lower test scores and educational attainment. However, it is unclear whether these associations are causal in nature or whether they can be explained by difficult-to-measure heterogeneity at the community, family, or individual level. Using data from the National Longitudinal Study of Adolescent Health and ordinary least squares, this paper shows that stuttering is negatively associated with high school grades, the probability of high school graduation, and the probability of college attendance. However, empirical specifications with family fixed effects or controls for learning disabilities such as Attention Deficit Hyperactivity Disorder suggest that these associations can, in large part, be explained by difficult-to-measure heterogeneity.

The Effect of Early Noncognitive Skills on Social Outcomes in Adolescence

Education Economics (vol. 22:2 2014)

(<http://www.tandfonline.com/doi/abs/10.1080/09645292.2010.547720#.U1fyGsfrYo8>)

(<http://www.sole-jole.org/9029.pdf>)

By: Katja Coneus and Manfred Laucht

This paper investigates the impact of early non-cognitive skills on social outcomes in adolescence. The child's attention span, approach, prevailing mood and distractibility in early childhood may be crucial predictors for school achievements, health risk behaviour, delinquency and autonomy as adolescent. The study investigates this issue using a longitudinal epidemiological cohort study of 384 children at risk from the Rhine-Neckar region in Germany. The authors' results indicate that non-cognitive skills in early childhood are important predictors of educational success, tobacco and alcohol use, delinquency and autonomy in adolescence. In particular, the attention span has emerged as a dominant factor among non-cognitive skills regarding educational performance, health behaviour and delinquency in our study. Further, we find

that boys with low non-cognitive skills have significantly lower social outcomes compared with girls.