

**CfEE Research Digest
2017/18 (7)**

Editor: Gabriel Heller-Sahlgren



Table of Contents

Editor's Pick.....	3
Effects of Policy and Practice – Developed World.....	5
Effects of Policy and Practice – Developing World	7
General Education.....	8



Editor's Pick

The 'Pupil' Factory: Specialisation and the Production of Human Capital in Schools

By: Roland G. Fryer Jr.

American Economic Review (March 2018)

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

The idea that the division of labour increases productivity was popularised by Adam Smith in the 18th century and has been a cornerstone of economic theory ever since. The intuition is quite simple: specialisation increases efficiency – since it allows workers to attain additional skills in those tasks in which they specialise, reduces the transition times in the production process, and increases the probability of technological innovation – and therefore raises total output.

In most industries, the effects of exploiting comparative advantage to maximise productivity are indeed also positive. Perhaps the most canonical example can be found in automobile production, which Henry Ford revolutionised through sequential organisation in the form of an assembly line. The result was to decrease production time manifold. Overall, there is no question that the division of labour has brought huge productivity gains in most sectors of the economy.

Yet we know little of how specialisation works in education. One way schools could exploit the advantages of specialisation is by assigning teachers to those subjects in which they are most effective. In secondary schools, specialisation is standard but it is generally not commonplace in primary schools, where the same teacher instead teaches different types of subjects.

In this paper, Roland Fryer reports results from a randomised experiment conducted in 46 state primary schools in Houston, which aimed to study the effects on school productivity of allocating teachers to subjects based on their strengths. Treatment schools changed their schedules so that teachers specialised in their strongest subjects, as determined by the headteachers at the schools. The headteachers allocated teachers to subjects based on each their comparative advantage, using value-added metrics, observations, or recommendations.

The findings show that schools allocated to the treatment group increased teacher specialisation considerably. Yet in sharp contrast to the positive effects of specialisation found in most parts of the economy, the effects on pupil performance in both high- and low-stakes tests were in fact negative: the results suggest that teacher specialisation decreases pupil performance by the equivalent of about 11-12 PISA points in mathematics and reading. Specialisation also had negative effects in science and social studies, and appears to increase the number of absences and suspensions.

Furthermore, the negative effects are especially pronounced among disadvantaged pupils. Indeed, special-education pupils performed the equivalent of 22-30 PISA points lower as a result of teacher specialisation. Also, pupils taught by less experienced teachers (and teachers of a different race) were more negatively affected in mathematics than pupils



taught by more experienced teachers (and teachers of the same race). At the same time, there is no evidence that any type of pupils actually benefited from specialisation.

One reason why specialisation does not seem to work is that it increases the total number of pupils – while decreasing the number of subjects – each teacher has to teach. This means that specialisation reduces teachers' familiarity with pupils, thereby decreasing the potential for tailored instruction. Indeed, a survey indicated that teachers in treatment schools were less likely to tailor instruction, while also reporting lower job satisfaction and performance.

Certainly, it is important to note that the experiment focused solely on disadvantaged, urban schools with initially relatively low-performing teachers, measured by their value-added, and it is not possible to extrapolate the effects to other types of schools. In fact, while not statistically significant at conventional levels, there are also indications that teachers in treatment schools performed worse at baseline than teachers in control schools – which may also partly explain the results. If so, the effect of low-quality teachers as such may be partly conflated with the impact of specialisation.

Nevertheless, overall, the research provides no evidence to suggest that allocating primary-school teachers to teach subjects based on their strengths – at least as it was done in this experiment – is a good way to raise school productivity. Future research will have to investigate whether this finding is replicable in other settings.

Effects of Policy and Practice – Developed World**Levelling the Playing Field for High School Choice: Results from a Field Experiment of Informational Interventions**

By: Sean P. Corcoran, Jennifer L. Jennings, Sarah R. Cohodes, and Carolyn Sattin-Bajaj

NBER Working Paper No. 24471

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

The authors conducted a field experiment in 165 high-poverty New York City middle schools to help students navigate a complex high school choice process and access higher-performing schools. Students in treatment schools were given a customised one-page list of proximate high schools with a graduation rate at or above the city median (70%). Some also received a supplemental list highlighting academically non-selective schools or high schools organised by academic interest area. The interventions changed student application behaviour in ways that led to more matches to higher-performing schools. While treatment students did not apply to higher graduation rate schools, they applied to schools where their odds of admission were higher, were more likely to receive their first-choice high school, and were less likely to match to a school with a low graduation rate. The findings also suggest that informational interventions may not reduce inequality, since both disadvantaged and comparatively advantaged students used our materials, and in some cases the latter benefited more from them by applying and matching to more schools on our lists. Students in non-English speaking households, who were particularly responsive to the intervention and were much less likely to match to a low-performing school, were one notable exception to this pattern.

Do High School Sports Build or Reveal Character? Bounding causal estimates of sports participation

By: Michael R. Ransom and Tyler Ransom

Economics of Education Review (June 2018)

[Published version](#)

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

The authors examine the extent to which participation in high school athletics in the United States has beneficial effects on future education, labour market, and health outcomes. Due to the absence of plausible instruments in observational data, they use recently developed methods that relate selection on observables with selection on unobservable characteristics to estimate bounds on the causal effect of athletics participation. The authors do not find consistent evidence of individual education or labour market benefits. However, they do find that male (but not female) athletes are more likely to exercise regularly as adults, but are no less likely to be obese.



Does Remediation Work for All Students? How the Effects of Postsecondary Remedial and Developmental Courses Vary by Level of Academic Preparation

By: Angela Boatman and Bridget Terry Long

Educational Evaluation and Policy Analysis (March 2018)

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

The authors examine the impact of remedial and developmental courses on college students with varying levels of academic preparedness, thus focusing on a wider range of students than previous studies. Using a regression discontinuity design, they provide causal estimates of the effects of placement in different levels of remedial courses on short-, intermediate-, and long-term outcomes at both 2- and 4-year colleges. Similar to other research, they find that remediation has negative effects for students on the margin of needing one developmental course. However, for students with lower levels of academic preparation, the effects of remediation are estimated to be positive in some subjects. These results suggest that remedial courses can help or hinder students differently depending on their incoming levels of academic preparedness. Moreover, the conclusions are largely driven by positive and negative effects observed for students at 2-year institutions, and we discuss several hypotheses that may explain these findings.



Effects of Policy and Practice – Developing World

Teacher-Led Math Inquiry: A Cluster Randomised Trial in Belize

By: Darrell M. Hull, Krystal M. Hinerman, Sarah L. Ferguson, Qi Chen, and Emma I. Näslund-Hadley

Educational Evaluation and Policy Analysis (forthcoming)

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

Teacher professional development and in-class mentors were used to support structured inquiry with math manipulatives. Twenty-four primary schools (n = 6,628 students) were randomly assigned to treatment and control groups as an experimental field trial to examine the effectiveness of this instructional approach in a scaled-up application in Belize for the duration of a school year. Implementation fidelity measures were collected permitting evaluation of two separate multilevel models: intention-to-treat and test-of-treatment. Both quantitative and qualitative evidence suggest students within this culture respond well to this relatively simple and inexpensive intervention that departs from traditional, expository math instruction in many developing countries. Policy implications are discussed that supported nationwide rollout of the intervention.

Commuting to Educational Opportunity? School Choice Effects of Mass Transit Expansion in Mexico City

By: Ofer Malamud, Andreea Mitrut, and Cristian Pop-Eleches

Economics of Education Review (April 2018)

[Published version](#)

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

School choice policies aim to increase educational access by weakening the link between a student's residence and his choice set, but long commutes and other barriers may constrain families from selecting otherwise-desirable schools. Leveraging a mass transit expansion in Mexico City's suburbs as a natural experiment, the authors find that a new train raised demand for elite and more distant schools, but only among high-achieving students with highly-educated parents. These students were also more likely to be assigned to elite and more distant schools under the test-based assignment mechanism. In contrast, they find little effect on the choices or assignments of low-achievers or those with lower-education parents. These results highlight the complementarities between transit access and school choice as well as the potential limitations of choice policies in large urban areas.



General Education

Admission to Higher Education Programmes and Student Educational Outcomes and Earnings—Evidence from Denmark

By: Eskil Heinesen

Economics of Education Review (April 2018)

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

This paper uses data from the central admission system for Danish post-secondary education merged with other administrative data. Applicants for admission may rank up to eight educational programmes, and the author focuses on first-time applicants whose first-choice are bachelor's degree university programmes with restricted admission, i.e. with an admission threshold defined in terms of the grade point average obtained from upper secondary school. Using threshold crossing as an instrument for admission in a regression discontinuity design, he finds that being admitted to the first-choice programme increases the probability of completing a master's degree in that subject by about 20 percentage points. There is no clear evidence that being admitted to one of the higher degree programmes listed on the application has an effect on years of education or the probability of completing a master's degree (although point estimates indicate small positive effects). There is no robust statistically significant effect on earnings 11 years after application.

Human Capital Accumulation of Children in Cameroon: Does

Disability Really Matter?

By: Arlette Simo Fotsoa, Anne Solaz, Mbaye Diene, and Roger Tsafack Nanfossae

Education Economics (Issue 3, 2018)

[Published version](#)

[Accepted manuscript \(free\)](#)

Although most of the world's disabled people live in developing countries, little is known about the consequences of disability in this part of the world. Using the DHS-MICS 2011 data of Cameroon, this paper contributes to the literature by providing new robust estimates of the effect of child disability on education in a developing country context. It controls for unobserved heterogeneity within the households by using a 'true' sibling fixed effect model and also accounts for the severity of disability. The results show that moderate and severe disabilities reduce the probability that a child attends school and diminish school progress.