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Editor: Gabriel Heller-Sahlgren

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Editor's Pick

Measuring Success in Education: The Role of Effort on the Test Itself

By: Uri Gneezy, John A. List, Jeffrey A. Livingston, Sally Sadoff, Xiangdong Qin, and Yang Xu

NBER Working Paper No. 24004

[Published version](#)

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

Since the Programme for International Student Assessment (PISA) was carried out for the first time in 2000, international assessments have come to dominate education policy worldwide. Every three years, as new scores are released, huge media attention gives way to naming and shaming of countries that perform surprisingly well or poorly in the different league tables.

However, some have raised concerns about the low-stakes nature of the tests, which is likely to affect children differently depending on their culture. If so, it is not at all clear that differences in international test scores just reflect differences in ability and learning – but may instead also pick up variances in intrinsic motivation to do well on the test.

While there is anecdotal evidence to suggest intrinsic motivation may play a role in explaining differences in performance, there is no rigorous research showing to what extent, if any, such cultural differences may causally explain test score differences across countries.

In this paper, the authors examine to what extent differences in motivation explain differences in performance between America and Shanghai. They do so by carrying out a randomised experiment in which groups of pupils in each country were given a surprise financial incentive to do well on a test constructed from previous mathematics PISA questions, comparing their performance with groups of pupils in each country who were not given such incentives. Since pupils learn about the incentives just before they take the test, any effect observed operates through effort on the test rather than preparation.

If there are cross-country differences in intrinsic motivation to take a low-stakes test, we would assume that pupils would respond differently to the additional incentive: pupils who are already intrinsically motivated to take the test may be little affected by the extrinsic incentives, if they are already working at maximum capacity, while pupils who lack intrinsic motivation should respond stronger to extrinsic incentives – and, if so, test-score differences between the two groups should decline.

The results show that pupil performance in Shanghai is not affected by the surprise financial incentives – but that results among American pupils increase dramatically as a result of such incentives. The incentives make American pupils attempt more questions, especially at the end of the test, and they are also more likely to answer these questions correctly.

The results imply that American pupils perform about 22 PISA points better when they are offered the surprise financial incentives – whereas the impact among Shanghai pupils is close to zero and far from statistically significant. The difference in effect among American and Shanghai pupils is also statistically significant.

Finally, the authors use the data to simulate the impact the intervention is likely to have on America's aggregate PISA scores, finding it would be enough to raise its performance by fully 22-24 PISA points and consequently move the country from 36th place to 19th place in PISA 2012 mathematics.



Overall, the results therefore provide striking evidence that international tests such as PISA are unlikely to merely pick up differences in ability and learning across countries. Instead, they probably also reflect cultural differences in intrinsic motivation. While such motivation is important, it is not necessarily what international assessments are supposed to measure.

Certainly, we need more research from other countries to better understand how different countries are affected by the low-stakes nature of the tests. One way would be to carry out a similar experiment as part of the international tests themselves, by allowing half of the sample in each country to receive surprise incentives. This would enable us to analyse to what extent cross-national differences in intrinsic motivation, rather than cognitive skills, affect countries' position in the league tables – and ultimately provide better information to policymakers seeking to improve pupil performance.



Effects of Policy and Practice – Developed World

The Effects of Accountability Incentives in Early Childhood Education

By: Daphna Bassok, Thomas Dee, and Scott Latham

CEPA Working Paper No. 17-10 (September 2017)

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

In an effort to enhance the quality of early childhood education (ECE) at scale, nearly all U.S. states have recently adopted Quality Rating and Improvement Systems (QRIS). These accountability systems give providers and parents information on program quality and create both reputational and financial incentives for program improvement. However, we know little about whether these accountability reforms operate as theorized. This study provides the first empirical evidence on this question using data from North Carolina, a state with a mature QRIS. Using a regression discontinuity design, the authors examine how quasi-random assignment to a lower quality rating influenced subsequent outcomes of ECE programs. They find that programs responded to a lower quality rating with comparative performance gains, including improvement on a multi-faceted measure of classroom quality. Programs quasi-randomly assigned to a lower star rating also experienced enrolment declines, which is consistent with the hypothesis that parents responded to information about program quality by selectively enrolling away from programs with lower ratings. These effects were concentrated among programs that faced higher levels of competition from nearby providers.

Does Choice Increase Information? Evidence from Online School Search Behaviour

By: Michael F. Lovenheim and Patrick Walsh

Economics of Education Review (February 2018)

[Published version](#)

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

The authors examine 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. They link monthly data on search frequency in local “Search Units” to information on changes in local open enrolment options driven by No Child Left Behind (NCLB) sanctions as well as state school choice policies including open enrolment, tuition vouchers, charitable scholarship tax credits, and tuition tax credits. Their results indicate that NCLB-driven expansions in school choice have large, positive effects on the frequency of searches done for schools in that area. They find less evidence that state choice policies affect online search behaviour, however search frequency also increases when charter school penetration in a given area rises. These estimates suggest that the information parents have about local schools is endogenous to the choice environment they face, and that parental information depends not just on the availability of data but also the incentive to seek and use it.



Do School Budgets Matter? The Effect of Budget Referenda on Student Performance

By: Kyung-Gon Lee and Solomon W. Polachek

Education Economics (January 2018)

[Published version](#)

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

This paper analyses how changes in school expenditures affect dropout rates based on data from 466 school districts in New York during the 2003/04 to the 2007/08 school years. Past traditional regression approaches show mixed results in part because school expenditures are likely endogenous, so that one cannot disentangle cause and effect. The regression discontinuity design used in this study isolates exogenous variation in school expenditures per pupil by comparing school districts where budget referenda passed and failed by narrow margins. The results indicate that increases in school expenditures reduce New York State dropout rates.

Effects of Policy and Practice – Developing World

Books or Laptops? The Cost-Effectiveness of Shifting from Printed to Digital Delivery of Educational Content

By: Rosangela Bando, Francisco Gallego, Paul Gertler, and Dario Romero Fonseca

Economics of Education Review (December 2017)

[Published version](#)

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

Information and communication technologies can be used for educational purposes, but these devices may also pose as distractors that may tamper with the learning process. This paper presents results from a randomized controlled trial in which laptops replaced traditional textbook provision in elementary schools in high poverty communities in Honduras. We show that at the end of one school year, we fail to reject that there were no differences between laptop and textbook provision on mathematics and Spanish test scores and in non-academic outcomes related to coding and verbal fluency.

Ethnic Favouritism in Primary Education in Kenya: Effects of Coethnicity with the president

By: Jia Li

Education Economics (January 2018)

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

This study measures the effect of ethnic favouritism on primary education using data from the Kenya Demographic and Health Survey. In line with previous studies, this study confirms that having a co-ethnic president is expected to improve the likelihood of completing primary education. This study demonstrates that ethnic favouritism operates at the district level but not in the ethnic dimension, as only co-ethnics living in co-ethnic districts can benefit from it. Ethnic favouritism in the job market influences a demand-side mechanism of education by increasing the expectation of educational returns among co-ethnics in co-ethnic districts.



General Education

The Growing Importance of Social Skills in the Labour Market

By: David J. Deming

Quarterly Journal of Economics (November 2017)

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

The labour market increasingly rewards social skills. Between 1980 and 2012, jobs requiring high levels of social interaction grew by nearly 12 percentage points as a share of the US labour force. Math-intensive but less social jobs—including many STEM occupations—shrank by 3.3 percentage points over the same period. Employment and wage growth were particularly strong for jobs requiring high levels of both math skill and social skills. To understand these patterns, the author develops a model of team production where workers “trade tasks” to exploit their comparative advantage. In the model, social skills reduce coordination costs, allowing workers to specialize and work together more efficiently. The model generates predictions about sorting and the relative returns to skill across occupations, which he investigates using data from the NLSY79 and the NLSY97. Using a comparable set of skill measures and covariates across survey waves, he finds that the labour market return to social skills was much greater in the 2000s than in the mid-1980s and 1990s.

A Classroom Experiment on Effort Allocation under Relative Grading

By: Andy Brownback

Economics of Education Review (February 2018)

[Published version](#)

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

Grading on the curve is a form of relative evaluation similar to an all-pay auction or rank-order tournament. When students are drawn from a population distribution into a class, their realized distribution of abilities is predictably linked to the size of the class. Increasing the class size draws students’ percentile ranks closer to their population percentiles. Since grades are awarded based on percentile ranks in the class, this reallocates incentives for effort between students with different abilities. The predicted aggregate effort and the predicted effort from high-ability students increases while the predicted effort from low-ability students decreases. Andreoni and Brownback (2017) find that the size of a contest has a causal impact on the aggregate effort from participants and the distribution of effort among heterogeneous agents. In this paper, the author randomly assigns “class sizes” to quizzes in an economics course to test these predictions in a real-stakes environment. The author’s within-subjects design controls for student, classroom, and time confounds and finds that the lower variance of larger classes elicits greater effort from all but the lowest-ability students, significantly increasing aggregate effort.