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Editor's Pick

Do Financial Incentives Crowd Out Intrinsic Motivation to Perform on Standardised Tests?

By: John A. List, Jeffrey A. Livingston, and Susanne Neckermann

Economics of Education Review (October 2018)

[Published version](#)

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

There is considerable debate in the education research and policy communities regarding the extent to which the use of extrinsic incentives, such as financial rewards, could induce higher pupil performance. One of the arguments in favour of providing such incentives is that they could help increase pupils' motivation to perform and in this way help them reach their true potential. Normally, the returns to education take time to materialise, which may have negative consequences for pupil motivation, either because pupils do not possess accurate information regarding the long-term returns or because they have high discount rates – that is, they may discount future rewards in their decision making regarding the level of effort they choose to exert on tasks today. By providing external incentives to do well on certain tasks, pupils are given more immediate rewards to their effort and the returns to higher performance are made more salient. If incentives instead are provided to other actors, such as parents and teachers, these actors will have more motivation to help pupils improve their performance (potentially by improving pupil motivation).

Yet others argue that external incentives may very well backfire. This is because such incentives could crowd out actors' internal motivation, thereby either having no impact or even a net negative effect on performance, both on the incentivised task and similar future tasks. If this holds true, once the external incentives are removed, the actors may well very well have lower motivation to perform than had been the case without the introduction of incentives in the first place.

In this paper, the authors analyse the results of a randomised experiment conducted among pre-school, primary, and lower-secondary pupils in Chicago, testing the impact of financial incentives on pupil performance in an otherwise low-stakes test. Simultaneously, the pupils also take another high-stakes test designed to measure the same content but without any financial incentives attached. Importantly, the pupils sit the second, non-incentivised test twice, first in conjunction with the test to which the incentives are attached, and then again one year afterwards. This allows the authors to test whether or not the incentives attached to the low-stakes test

decrease performance on the non-incentivised test in a short-term and longer-term perspective.

In the experiment, pupils were allocated to either a control group or to one of five separate treatment groups. In the first three treatments, either the pupil, their parents, or their tutor were paid \$90 if the pupil improved their performance on the low-stakes test relative to their baseline performance, maintained their course grade in the subject, as well as avoided unexcused absences and suspensions. In the fourth treatment, both pupils and parents were given \$45 each if the pupils reached these targets, and in the fifth treatment, pupils, parents, and the tutor were paid \$30 to do so.

The authors find a large positive impact on the low-stakes test to which incentives were attached, with similar effect sizes regardless of the specific treatment group to which pupils were assigned. The results indicate that pupils performed the equivalent of about 30-37 PISA points better on this test as a result of the financial incentives. At the same time, there is no impact at all on the high-stakes test to which there were no financial incentives attached in the short term. If anything, the estimates are mostly negative, although they are not statistically significant. This suggests that the financial incentives may in fact have decreased the actors' internal motivation to do well.

Yet when analysing the effects on the high-stakes test in the follow up a year later, the authors find large positive gains. In other words, the incentives attached to the otherwise low-stakes test appear to have had a long-term impact on learning without incentives, indicating that the negative impact on internal motivation was only temporary. In the longer-term perspective, the financial incentives provided a net gain in terms of performance on tests to which no incentives were attached.

In addition, the authors find suggestive evidence that the effect of incentives differs depending on whether or not pupils have high or low internal motivation at baseline. While financial incentives appear to have no or even negative effects on internal motivation among all pupils in the short term, the long-term benefits appear concentrated among pupils with high performance at baseline. Still, there is no negative impact among pupils with lower performance at baseline in the longer-term perspective, indicating that the negative effect on their internal motivation was temporary as well.

Overall, the paper is an important contribution to an expanding literature on the effects of financial incentives in the education system. Certainly, as other research is mixed and tends to suggest that the effects of external incentives depend on how they are framed and structured, more research is necessary before drawing strong specific conclusions for policy and practice. Nevertheless, the paper does suggest that such incentives at least are likely to have *some* role to play, a finding that also chimes well with recent randomised [research](#) in English schools.

Effects of Policy and Practice – Developed World

The Long-Run Effects of Disruptive Peers

By: Scott E. Carrell, Mark Hoekstra, and Elira Kuka

American Economic Review (November 2018)

[Published version](#)

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

A large and growing literature has documented the importance of peer effects in education. However, there is relatively little evidence on the long-run educational and labour market consequences of childhood peers. The authors examine this question by linking administrative data on elementary school students to subsequent test scores, college attendance and completion, and earnings. To distinguish the effect of peers from confounding factors, they exploit the population variation in the proportion of children from families linked to domestic violence, who have been shown to disrupt contemporaneous behaviour and learning. Results show that exposure to a disruptive peer in classes of 25 during elementary school reduces earnings at age 24 to 28 by 3 percent. They estimate that differential exposure to children linked to domestic violence explains 5 per cent of the rich-poor earnings gap in our data, and that each year of exposure to a disruptive peer reduces the present discounted value of classmates' future earnings by \$80,000.

When Investor Incentives and Consumer Interests Diverge: Private Equity in Higher Education

By: Charlie Eaton, Sabrina Howell, and Constantine Yannelis

NBER Working Paper No. 24976

[Published version](#)

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

This paper uses private equity buyouts to study a transition from lower- to higher-powered profit-maximizing incentives in higher education, a sector heavily dependent on government subsidy. Private equity owners have especially high-powered incentives to maximise profits. In a subsidised industry, this could intensify focus on capturing government aid at the expense of consumer outcomes. Employing novel data on 88 private equity deals and 994 schools with private equity ownership, the authors find that private equity buyouts lead to higher enrolment



and profits, but also to lower education inputs, higher tuition, higher per-student debt, lower graduation rates, lower student loan repayment rates, and lower earnings among graduates. Neither changes to the student body composition nor a selection mechanism fully explain the results. In a series of tests exploiting regulatory events and thresholds, the authors find that private equity-owned schools are better able to capture government aid.

One-to-One Technology and Student Outcomes: Evidence From Mooresville's Digital Conversion Initiative

By: Marie Hull and Katherine Duch

Educational Evaluation and Policy Analysis (forthcoming)

[Published version](#)

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

This article uses a difference-in-differences strategy to evaluate the impact of a one-to-one laptop program. Teaching practices changed with the introduction of the program, and the district worked to make wireless Internet more accessible in the community. The authors find that while short-term impacts of the program were statistically insignificant, math scores improved by 0.13 standard deviations in the medium term. Time spent on homework stayed constant, but students spent more of their homework time using a computer. They also investigate the impact of the program on other measures of student behaviour as well as heterogeneity in impacts. A limitation of this study is that the authors cannot distinguish which aspects of the program were most important in improving student outcomes.

Effects of Policy and Practice – Developing World

Educator Incentives and Educational Triage in Rural Primary Schools

By: Daniel O. Gilligan, Naureen Karachiwalla, Ibrahim Kasirye, Adrienne M. Lucas, and Derek Neal

NBER Working Paper No. 24911 (August 2018)

[Published version](#)

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

In low-income countries, educators often encourage weak primary students to drop out before reaching the end of primary school in order to avoid the negative attention they receive when their students perform poorly on primary leaving exams. The authors conducted an experiment in rural Uganda that sought to reduce dropout rates in grade six and seven by rewarding teachers for the performance of each of their students. Teachers responded to this Pay for Percentile (PFP) incentive system in ways that raised attendance rates two school years later from .56 to .60. These attendance gains were driven primarily by outcomes in treatment schools that provide textbooks for grade six math students, where two-year attendance rates rose from .57 to .64. In these same schools, students whose initial skills levels prepared them to use grade six math texts enjoyed significant gains in math achievement. The authors find little evidence that PFP improved attendance or achievement in schools without books even though PFP had the same impact on reported teacher effort in schools with and without books. They document several results that are consistent with the hypothesis that teacher effort and books are complements in education production.

Effects of High versus Low-quality Preschool Education: A Longitudinal Study in Mauritius

By: Christian Morabito, Dirk Van de Gaer, José Luis Figuero, and Michel Vandenbroeck

Economics of Education Review (August 2018)

[Published version](#)

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

The authors report on a randomised controlled experiment in Mauritius by the Joint Child Health Project. This longitudinal study followed a cohort of children from



different socio-economic backgrounds to examine educational outcomes among children in high and low-quality preschools. The findings show that quality of preschool education had no significant effect on children's overall educational attainment. However, academic performance of children in the experimental group was higher for children with poorly educated fathers, but lower for children with poorly educated mothers. Hence, the effects of high-quality preschool education worked in opposing directions – equalising by compensating for the effect of father's level of education, and dis-equalising by reinforcing the effect of mother's level of education.



General Education

High Times: The Effect of Medical Marijuana Laws on Student Time Use

By: Yu-Wei Luke Chu and Seth Gershenson

Economics of Education Review (October 2018)

[Published version](#)

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

Medical marijuana laws (MMLs) represent a major change of marijuana policy in the US. Previous research shows that these laws increase marijuana use among adults. In this paper, the authors estimate the effects of MMLs on secondary and post-secondary students' time use using data from the American Time Use Survey. They apply a difference-in-differences research design and estimate flexible fixed effects models that condition on state fixed effects and state-specific time trends. They find no effect of MMLs on secondary students' time use. However, they find that college students in MML states spend approximately 20% less time on education-related activities and 20% more time on leisure activities than their counterparts in non-MML states. These behavioural responses largely occur during weekends and summer when students have more spare time. Finally, the impacts of MMLs are heterogeneous and stronger among part-time college students, who are more likely to be first-generation college goers and to come from underrepresented racial and ethnic groups.

The Intergenerational Transmission of Education. A Meta-regression Analysis

By: Nicolas Fleury and Fabrice Gilles

Education Economics (November 2018)

[Published version](#)

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

In this article, the authors evaluate the extent of the causal effect of parental education on the education of their children. They review this empirical literature and propose a multivariate meta-regression analysis. Their database is composed of a large set of both published and unpublished papers written in the period 2002–2014. The articles considered differ in the data sources, explanatory variables, econometric strategy applied, and the type of publication. In spite of the large

heterogeneity of studies and evidence for publication bias, they find a transmission of education from parents to their children that amounts to 0.15.