The typical American city has become one big lab for education experiments. Charter schools compete with public schools. There are voucher programs in Milwaukee and teacher evaluations in Los Angeles (and in scores of communities in between). The stakes are high—the country’s global standing depends on the quality of its human capital and its capacity for innovation and economic growth.

Just as every industry requires effective R&D to prosper, so too does the education system. But ideas need to be tested. New programs change lives— for teachers, parents, and, most importantly, for children. We are still in the learning stage for many new efforts.

As educators and policymakers try out new approaches, economists make progress on the all-important question of what works. Earlier this year, the Federal Reserve Bank of Cleveland and the University of Kentucky hosted a two-day workshop, the Economics of Education. A panel of economists presented analyses of a cross section of some promising reform efforts.

The upshot of these studies is that figuring out what works is complicated. Sometimes, ideas that seem so intuitively sensible can have unintended results. For example, some efforts to create smaller schools have drawn controversy in recent years. Everything else being equal, smaller schools might seem like a perfect solution, but changing the size of schools might also change the caliber of the teaching staff and the composition of the student body; forced moves might also have disruptive effects on students. The fact is that many factors are at play in determining educational outcomes.

Education reforms are serious business and important to get right. The research summarized here only hints at some of the pitfalls reformers may encounter.

—Doug Campbell

The University of Kentucky’s Tom Ahn asks how school systems can keep a good mix of teachers in every school, instead of concentrating too many high-quality teachers in some schools to the detriment of others.

Ahn tried to figure out how mobile teachers really are in the relatively rigid, seniority-based labor market for teachers, and how much discretion principals have in hiring the best ones. Another way of thinking about it: How can policymakers slow the hemorrhaging of good young teachers who accrue human capital at underperforming schools and transfer to high-performing schools when their skills would most benefit the students they taught earlier?

Ahn concludes that keeping “good” teachers at “bad” schools means changing the characteristics that make schools bad. That may involve the mix of teachers, of course, but it also may depend on the mix of students as well as the building, resources, and curriculums. To keep “good” teachers, you have to give them a reason to stay.
Tying teacher compensation to student outcomes (particularly test scores) is a proven technique for improving teachers’ performance, but it is no panacea. Teachers could have incentives to game the system to their benefit.

Hugh Macartney of Duke University gets at this conundrum by investigating how fifth-grade teachers in K-5 schools perform compared with their counterparts in K-6 and K-8 schools. According to the theory of rational economic behavior, fifth-grade teachers in K-5 schools will put no lid on their effort to help students achieve high test scores. After all, they needn’t worry that the high bar they’ve set will matter in their school the following year, when their students will have moved on to a new school. The result is known as the “ratchet effect.”

By contrast, fifth-grade teachers in K-8 schools will respond (again, in theory) by putting in less effort so that the continuing students won’t have set as hard a target for the upper-grade teachers. As Macartney puts it, “a strong performance today makes it more difficult to reap a bonus tomorrow.”

Macartney found some evidence that this theory is validated in practice—with distortions from average test scores of between 12 percent and 22 percent. Granted, there are plenty of other reasons that might explain what the data show. The lesson is that whatever structure is in place, it’s important to think through how people might respond. What works in a K-5 school might not in a K-8.

The prevailing wisdom in the economics of education is that teachers matter quite a bit. A body of literature points to teachers as the most important factor in determining students’ success. But Jackson noted that this conclusion is based on studies of elementary school teachers, while high school students are exposed to different teachers, tracks, and classmates. So “students who take Algebra 1 with Mr. Smith may take physics with Mr. Black, whose teaching has a direct effect on algebra scores.” The consequence of this and other sources of bias is that student outcomes depend on more than one teacher or factor. Jackson’s methodology tries to account for “track treatment effects.” He looks at Algebra 1 and English 1 students in North Carolina and finds that the teacher makes only a slight difference in algebra test scores and almost none in English scores. The nettlesome implication for policymakers is that it is very hard to distinguish between the effects of teachers and those of the tracks or peer groups to which students are assigned. If high school teachers are compensated according to the same evaluation formula as elementary school teachers, then Jackson’s research suggests that someone will be mismeasured. In the end, we all pay for that misappropriation.
Underlying Reasons for Dropping Out

We don’t want students giving up on college because of money problems, social difficulties, or lack of encouragement from parents or mentors.

The University of Western Ontario’s Todd Stinebrickner homes in on one of the leading non-financial explanations for dropouts—that students discover how well they are likely to perform only after entering college and studying for a while. Some may find their courses harder than they’d expected. Stinebrickner’s major contribution is disentangling whether students drop out because they find out about low future wages or because a school is really unpleasant. As it happens, 60 percent of dropouts are associated with the unpleasantness factor.

A big policy implication is that schools could and should do more to help students bounce back from a bad semester, because many students could do substantially better just by toughing it out. We want students to drop out only for sound reasons, and finding out that college is hard does not qualify.

Neighborhood Effects

Where people live affects a whole range of outcomes, including educational attainment. In the mid-1990s, five cities participated in Moving to Opportunity, a major effort to improve people’s living situations by giving housing vouchers to low-income families. The goal was to help them move to better neighborhoods, and it was assumed that better education outcomes would be among the many improvements for these families’ children.

Unfortunately, the results did not bear that out. In fact, the program had neither very positive nor very negative effects on learning performance.

Building on their previous work, the Cleveland Fed’s Dionissi Aliprantis and Francisca Richter argue that it’s not that “moving” programs don’t work; it’s that Moving to Opportunity, in particular, mainly succeeded in letting some people move from very bad neighborhoods into only slightly better ones. It’s still plausible that a more even distribution of students (measured by their families’ incomes) among schools would lead to better outcomes. Bottom line: Neighborhood effects exist and are still worth studying.

It’s Not Whether to Go to College—it’s Where

On average, college graduates earn more than non-graduates, and graduates of elite schools make more than graduates of non-elite ones. But that’s not the end of the story. Where students of different abilities decide to attend is really important. Would it be sensible for a student of relatively low ability to attend an elite school if accepted? There’s no straightforward answer.

A sophisticated examination of how college quality affects post-graduate earnings is provided by Rodney Andrews, of the University of Texas–Dallas, and his co-authors. Instead of examining the average effect of college quality on earnings, the authors look at the distribution of returns, drawing some compelling results from data on public colleges in Texas.

For example, a student in the bottom 10 percent of their class at University of Texas–Austin enjoyed a college premium of about 2.7 percent, but the premium was almost 32 percent for someone in the 97th percentile. This suggests that the lower-ability student might have made better use of college and earned more by attending a different school.

The policy implications apply mainly to guidance professionals. It’s important to consider a student’s background and likely career path before advising which school to attend.

Recommended reading

For the full text of papers presented at the UK–FRBC workshop, go to http://gatton.uky.edu/Economics/2012Workshop/