The Best Bang for Our Buck

Money spent on class size reductions might be better spent on other reforms.

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Experimental psychologists have long distinguished between the internal validity and the external validity of an experiment.

Internal validity refers to whether one can logically infer a cause-and-effect relationship from an experiment.

External validity refers to whether it can be generalized to other populations, other times, and other scales of treatment. An experiment should have external validity before one considers basing wide-spread public policy on it.

Suppose that we take at face value the findings from a Tennessee experiment that appear to indicate that class-size reductions in the early grades have a long-lasting impact and that this impact is greatest for students from disadvantaged backgrounds.

Our review of findings from large-scale quasi-experimental studies from other countries tends to support the Tennessee results. What are the implications of these findings for public policy?

When we say we take the findings of the Tennessee experiment at face value, this means we believe the experiment had internal validity. However, there are a number of factors that lead us to question whether the external validity of the Tennessee experiment has been established sufficiently to warrant generalizing across different populations and settings.

Class-size reductions presuppose the availability of teachers who are equivalent in quality to existing teachers to staff the extra classrooms.

Leaving aside for a moment how one might measure teacher quality, if students' learning is related to the quality of their teachers and if the teachers hired to staff the new classrooms are of lower quality than existing teachers, student learning is unlikely to increase by as much as the experimental evidence predicts it will.

Many school districts are facing great difficulty in finding qualified teachers to staff their schools, and a large-scale class-size reduction policy would exacerbate this problem. The evidence from California, which has implemented class-size reduction statewide, suggests this issue should be a serious concern of policymakers.

Although one might instead try to provide teachers with more support in their classrooms, for example by providing the teachers with more aides, the Tennessee experiment suggests that having more teacher aides in classrooms does little to improve student learning.

Even if qualified teachers could be found, institution of a large-scale class-size reduction program presupposes the existence of vacant classrooms into which the new classes could be placed. If schools were operating at or near capacity, class-size reductions would require the construction of new facilities, which would add to the cost of the program.

Even if one were sure about the impact of a class-size reduction policy on student learning, the desirability of implementing such a policy would depend on a careful weighing of its benefits and costs and of alternative policies designed to accomplish the same goal.

For example, the evidence suggests that teachers with higher verbal ability and (at the secondary level) with greater subject matter knowledge are associated with greater student learning. In spite of this evidence, however, school districts do not systematically hire the applicants with the strongest academic backgrounds, who come from the better academic institutions, or who score the highest on tests of academic aptitude.

Placing more weight on the academic aptitude of subject matter competencies of applicants in hiring decisions would be a relatively no-cost way of improving student learning.

To increase the flow of high-aptitude college graduates into the teaching profession will likely require higher compensation for teachers. However, no comparative study of the relative costs of improving student learning through attracting higher-quality teachers versus reducing class size has been undertaken.

Similarly, any given expenditure on class-size reductions could instead be used to increase teacher compensation in ways that potentially might improve student learning even more. Given the importance of teacher subject matter competence, consideration might be given to teacher compensation systems that provide extra compensation for enhanced subject matter knowledge. Consideration might also be given to providing financial incentives to a school's teachers, as a group, for improving their students' academic performance.

In the private sector, companies regularly tie their CEO's compensation to measures of company performance. Consideration might be given to tying school board directors' compensation directly to their students' educational gains. Given the key role of principals as educational leaders, similar incentive compensation programs might be developed for them.

Our point is that reductions in class size are but one of a number of policy options that could be pursued to improve student learning. Careful evaluations of the impacts of other options, along with an analysis of the costs of each option, need to be done.

To date there are relatively few studies that even compute the true costs of large class-size reduction programs, let alone ask whether the benefits in terms of improved student learning merit incurring the costs.

(Adapted with permission from "Class Size and Student Achievement," in the May 2001 magazine of the American Psychological Society, www.psychologicalscience.org)