Two influential studies have shown that smaller classes do improve learning, especially for students from low-income families. But whether Singapore should go with it depends on the current situation facing schools and asking if the projected benefits outweigh the costs. ST PHOTO: KEVIN LIM

ASK: NUS Economists

Reducing class size is good, but mind the costs

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For The Straits Times

Q *Does class size matter?*
A Earlier this year, the issue of whether to implement smaller class sizes in Singapore schools was hotly debated in Parliament. Some felt that the current class size of about 33 to 34 in schools was too large and called for studies to evaluate whether a reduction might be beneficial, while others argued that there were other ways to improve student learning.

How might class size influence student learning?

Having fewer students in a class reduces the stress on teachers, freeing them to engage in higher value teaching activities that can encourage critical thinking. Having fewer students also reduces the likelihood of disruptive activities in class, creating a better learning environment.

Typically, economists try to measure the impact of class size by comparing how well students from different class sizes perform. They ask: "Do students from larger classes perform differently from those from smaller ones?"

These comparisons would provide a reliable indication of the causal effect of class size if students attending the classes were, on average, similar in all respects (innate ability, parents' education, family income, and so on), so that the only thing that differs is their class size.

More often than not, however,

the data collected by researchers for this purpose is problematic because it is based on observations. In such settings, students are not randomly assigned to different classes. So students from larger classes and those from smaller ones tend to be dissimilar.

For instance, in Singapore schools, less able students may be assigned to smaller classes (students enrolled in learning support programmes, for instance) while more able students are assigned to the regular larger classes.

Any difference in student performance in such a case cannot be attributed to class size, but may be due to innate student ability. The problem arises because we are not comparing apples with apples.

Of course, statistical methods such as regression can be used to control for differences in measurable characteristics such as family income. But other characteristics, like innate ability, are not easy to observe or measure.

To date, there have been numerous empirical studies investigating the effects of class size. An early review of these studies by Stanford University economist Eric Hanushek in 1997 suggests that there is no consistent relationship between class size and student learning. In the 277 estimates obtained from 90 published studies, he found that only 15 per cent showed that reducing class size had a positive impact on student learning. In fact, 14 per cent of them showed that reducing class size had a negative impact. Mr Hanushek therefore concluded that there was no conclusive evidence on the impact of class size.

Other scholars later found that Mr Hanushek's conclusions might have been misguided because not all the estimates included in his meta-analysis were equally reliable. Many of the estimates were based on research designs – like regressions – which would not have allowed for credible estimation of the class size effect.

More recent reviews of the literature, conducted for instance, by Northwestern University's Professor Diane Schanzenbach, focused on studies based on experimental and quasi-experimental techniques – which are the gold standards for identifying the causal impact of class size on student learning.

These had conclusions quite different from those of the earlier review by Mr Hanushek. They found that the bulk of studies which rely on these improved techniques show that class size reductions do improve student learning.

In such experimental and quasi-experimental studies, students are either randomly assigned to classes of different sizes or come close to being randomly assigned. The make-up of students, whether they are in larger or smaller classes, would tend to be similar. This makes possible an apples-to-apples comparison. Any difference in performance may thus be attributed to class size.

Two influential studies covered in Prof Schanzenbach's review are the Project Student Teacher Achievement Ratio experiment (which was incidentally mentioned in the parliamentary debates) and a quasi-experimental study conducted by Professor

Joshua Angrist and co-researcher Victor Lavy.

Both studies show that smaller classes are effective in raising student achievement, and that the benefits of attending a smaller class are greater for students from low-income families.

Even though reducing class size may improve student learning, it does not mean that Singapore should necessarily go ahead with it. Reducing class size comes at a substantial cost. More teachers need to be hired. And if schools are already functioning at full capacity, more classrooms need to be built.

It is important to ask if the projected benefits of reducing class size outweigh the costs. The answer depends on the current situation facing schools. How conducive are students' current learning experiences? Do they really need further improvements to their learning experiences? Do we have many disadvantaged students? Are there superior methods to improve student learning other than reducing class size? Answering these questions will allow policymakers to better assess what they should do.

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