Reducing Class Size: Promises and Perils

by Nina Bascia & Eric Fredua-Kwarteng

What's not to like about small classes? This policy idea – reducing the ratio of students to teachers – has been a point of discussion in educational circles since the 1970s. It has been taken up in school districts in several parts of Canada, including Edmonton, Toronto, and the entire province of Ontario, as well as in many other jurisdictions in North America and beyond. School districts and governments know that the idea that students will get more – and more individualized – attention from teachers is popular with parents (and thus with voters). Teachers, too, believe that reduced classes will help them address the range of different academic and social needs of students in their classrooms, and – given an ever-escalating number of curricular expectations – better manage a demanding teaching workload.

As a popular but expensive educational strategy idea, class size reduction has received a great amount of attention from educational researchers. Teachers' salaries are the costliest item in educational budgets, and educational decision makers want to know that the investment will be worth the expense. Does reducing class size really make a difference in how well students learn? In addition to their academic achievement, does it have a positive impact on children's social development? Is it particularly helpful or, conversely, less effective with students facing academic and social challenges? Is it more cost-effective than other policy choices, such as new kinds of training for teachers or special supports for students? *How* does small class size work: what are teachers actually doing in their interactions with students that might be different from what they are able to do in larger classes? And how small is small enough to make a difference in student learning: 25 students to one teacher? Twenty? Fifteen?

Ontario's most recent Primary Class Size Reduction initiative, announced by the Province in 2004, mandated a 20-student 'cap' on classes in Kindergarten and Grades 1-3, beginning in the school year 2007-08. In beginning to study the impact this initiative has had on students' and teachers' classroom experiences, as well as on school and school district activities more broadly, we read through the large body of available research on class size reduction. Some of the research we reviewed focused on the costs and benefits of reducing class size by analyzing students' test scores in relation to the cost of the initiative. There were also a number of studies on other related consequences when jurisdictions introduced class size reductions – focusing, in particular, on the initiatives undertaken in Edmonton, Wisconsin, Tennessee, California, and the U.K., which have been very well-documented.

We found much support for small classes as an educational strategy, but we also found many contradictions across studies, and sometimes researchers' enthusiasm for small classes as an educational strategy did not seem well supported by the actual evidence they reported.

The enthusiasm for class size reduction is, we argue, an example of the kind of 'magical thinking' that is unfortunately common among educators, policy makers, and researchers alike, representing a belief that a single ingredient can make a profound positive difference in teacher effectiveness and student learning. Not unlike the old alchemists, who undertook a quest for the elixir that could cure all illnesses, governments often look for the one powerful policy 'lever' that could make a dramatic difference in educational practice. When research reports focus on the impact of a single factor, like class size, without examining or reporting on other conditions that might be influential, they reinforce 'magical thinking'. This 'one aspect at a time' tendency of research is like the fable of the blind men and the elephant; each

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study focuses on one small part of the whole without understanding how the parts fit together.

Reducing class size does seem to have a positive effect on student learning, particularly in primary grades and among students who do less well academically in larger classes. But class size reduction is not a 'magic bullet'; if not undertaken thoughtfully and in combination with other kinds of educational supports, it can potentially result in some troubling outcomes that actually inhibit good teaching and effective learning.

What's good about smaller classes

All else being equal, smaller classes provide more optimal environments than larger classes for both students and teachers. When class sizes are reduced, students tend to learn more (at least by a modest amount), as measured by standardized test results, and their engagement in learning is enhanced, as demonstrated by classroom behaviour, attitude, and effort; some studies suggest that students expend more academic effort and initiate more of their own learning activities in smaller classes. There are also reports that, when compared with students in larger classes, students in smaller classes interact more with their peers and are more active in initiating contact with their teachers.

Studies on the continued effect of smaller classes on quality of life in the years after the small class experience have found that students with small-class experience continue to do better, both academically and socially, than their peers. In some research, students whose progress was tracked for a number of years after their participation in small class initiatives demonstrated higher high school graduation rates, and some research suggests that students who have spent time in small classes demonstrate greater civic and democratic values, as measured by their scores on paper and pencil tests of attitudes and beliefs before and after their attendance in small classes. Lower pregnancy and incarceration rates also suggest that those who have been students in smaller classes continue to experience a higher quality of life.

Such findings have encouraged educational decision makers in many jurisdictions to focus class size reduction efforts on the primary grades, arguing that these are the years when children develop the fundamental skills, dispositions and socialization patterns necessary for successful educational outcomes. Their argument is particularly forceful when applied to students in populations that traditionally have not done as well in school, such as high-poverty and visible minority groups, immigrants, and students attending inner-city schools. The potential for improvement in learning is even greater for these students than for those whose socio-economic profiles suggest they are likely to do well.

In fact, observations of teachers' work in small classes does reveal that, under certain conditions, they are able to change the way they teach, individualizing their teaching to better match different students' academic and social conditions. Even when students show no greater gains in academic achievement, teachers manage student behaviour differently in smaller classes. In interviews and on written survey responses, teachers of small classes report that they are more confident about their ability to identify and meet students' learning needs, and they express greater job satisfaction than teachers with larger classes. They report that they spend more time teaching and have more interactions with parents than they had with larger classes, and that students' behaviour improves, as does their engagement with classroom activities.

Parents of children attending smaller classes rate their children's educational experience more highly than do those of children enrolled in classes where size has not been reduced. They also report more contact with teachers and higher satisfaction with schools.

Because studies on the effects of small classes have tended to focus on students in one or a few sequential grades and to measure student learning in specified skill areas, such as math or reading, it is not appropriate to assert that small classes are better across all grades and subjects. And the research suggests that school-level

factors, especially the resources available to support teaching and learning, matter in terms of how much difference reducing class size can achieve. In other words, we are still learning about the pedagogical and organizational nuances that shape the effectiveness of small classes and cannot claim that they are universally and uniformly useful.

Why caution is needed

Although most studies on small classes emphasize positive results for students and teachers, a few studies report different degrees of success and, in some cases, actual negative consequences. There are indications that class size reduction is not a 'magic solution': the great enthusiasm of some researchers has been challenged by others. How can we account for such differences, and what are the implications for practice? One answer is that the research has tended to be relatively silent on the contextual factors that shape how any particular small class initiative plays out. Studies of California's small class initiative are among the only reports that examine actual implementation factors. Beyond this, there are several important differences in how research on small classes has been carried out, as well as what the initiatives themselves include.

Varying assumptions

To some extent, the differences seem to be the result of different assumptions on the part of researchers. Some have focused on pupil-teacher ratio, the actual number of students with a teacher, rather than the average class size (for a school or a school district), since averages can conceal large differences in actual class sizes. Others emphasize the pupil-adult ratio, which might include administrators, librarians, counselors, parent volunteers and others, as well as classroom teachers. Some studies take into account classroom educational assistants, but they do not always describe what roles such adults provide in the teaching-learning process. Although these other adult roles may be important in supporting student learning, their inclusion confuses the class size issue, since it is not clear what is being measured. This confusion may partially explain why different results have been reported across different studies. What, for example, can we learn about the effects of additional teaching support staff in classrooms if we don't know what they contribute to students' learning?

Teaching quality

Teacher preparation and quality matter; in fact, many researchers believe that teacher effectiveness is more critical than class size for students' academic achievement.

Small classes provide the opportunity for better teaching and learning environments, but they don't guarantee them. Teaching effectively in small classes is not just a matter of applying the same strategies to fewer students; it requires new strategies. However, without support, teachers will not automatically change teaching strategies when class size is reduced. They need training in differentiated instruction – sustained professional development, not just one-day workshops. They need opportunities to observe other teachers and receive mentoring from skilled colleagues over time in order to bring about significant changes in how they work in their classrooms. Professional development, therefore, is a substantial cost factor if small classes are to bring about improvements in student learning.

In addition, teachers need time to develop and practice their new teaching skills. Observations of teachers working in schools where class size reduction initiatives were implemented have shown that it takes more than one school year to become adept in using new teaching strategies, and closer to three years to demonstrate real competence.

The importance of teacher quality and preparation become clear when initiatives to reduce class size are introduced and a jurisdiction is forced to increase its teaching pool quickly and substantially. For example, the state of California's primary class size reduction initiative, instituted in the late 1990s, resulted in a 38 percent increase in the teaching force. School districts competed for teachers, and many had to hire unqualified teachers on an emergency basis. As new positions opened up, some qualified teachers working in schools serving poor children took the opportunity to transfer to more affluent schools. As a result, schools serving racial minorities and English language learners saw a more than 16 percent drop in the number of qualified teachers. Because so many teachers were inexperienced and lacked training, there was a great need for professional development, but such professional development had not been factored into school district budgets.

In fact, research into the California initiative demonstrated that poor children and racial and linguistic minority students – those most in need of the benefits of small classes – tended to lose out disproportionately.

Space for learning

Reducing class size means increasing the number of classes in a school, and that means additional space must be found or invented. The timing of the implementation of class size reduction must take into account the time and resources required to build or acquire new classroom space. Principals and other decision makers need to think seriously about the consequences for programs when classes are redistributed around a school; for example, are some children segregated from the main activities of the school because their classrooms are across the play yard? Is this a good thing or a bad thing? Might the need to reconfigure space be an opportunity for reconfiguring how students are allocated to classes and, perhaps, result in greater inclusion? If teachers have fewer opportunities to run into each other in the halls and staff rooms, are there consequences for how they share information and work together?

In some places where class size reduction has been attempted, the result has been a reduction of rooms for non-classroom activities such as auditoriums, libraries, childcare spaces, and resource rooms. Such developments result in a loss of children's access to resources and activities such as whole school gatherings and quiet places where staff may work one-on-one or with small groups of students.

Other logistical factors and unintended consequences

There are other costs and issues that must be taken into account when implementing class size reduction. Nitty-gritty details like bus schedules may be affected. Beyond professional development and space reconfiguration costs, there may be a need to fund the purchase of additional textbooks and other teaching materials.

When resources are scarce or necessary factors haven't been thought through adequately, reducing class size may lead to troubling consequences. As the California experience shows, reforms that are specifically intended to help educationally disadvantaged students might actually lead to greater inequality. Merely tinkering with a structural change – without thinking about teachers' skills, values and working conditions – can actually be counterproductive.

Studies of other educational innovations involving only one segment of a school have shown that new programs often claim a disproportionate share of resources, to the detriment of students, teachers, and programs in the rest of the school. In places where class size reduction focuses exclusively on primary grades, a competition for resources may result, with fewer resources available for other parts of the school program.

When the costs of reducing class size are not taken into account, school districts may discover budget shortfalls and have to pull money from other programs to support implementation. California saw serious consequences for facility maintenance, administrative services, teacher professional development, and computer and library programs. Is it worth sacrificing such supports for smaller classes?

Given the wide-ranging impact of class size reductions, decision makers must think more comprehensively about possible impacts when planning implementation.

Conclusion

Reducing class size, especially in primary grades, can have tremendous academic and social benefits for children – benefits that endure well beyond those first years of school. But smaller class sizes are not a cure-all. Beyond the hoopla of enthusiasm for this seemingly simple change in educational practice lie serious consequences for students and their teachers, especially for those who need extra resources the most.

The wealth of information we have about the necessary conditions for such innovations to succeed suggests that jurisdictions interested in class size reduction must also invest in professional development support for teachers to help them develop appropriate new teaching skills, and that the resource implications for both the targeted student population and school programs overall must be seriously considered. These include the availability of adequately trained teachers, appropriate space that does not compromise the availability of school rooms for other essential activities, and a resource base sufficient to ensure that the quality of teaching and learning is enhanced, not diminished.

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