

Research in Brief:

Does school size matter?



Does the size of a school make a difference in the achievement of the students, or the cost of their education?

Determining the “ideal” size for a school is largely determined by how you define ideal. While measuring only one dimension (such as cost per student, or student achievement on exams) results in more definite answers, building schools in the real world requires aspiring to many “ideals”.

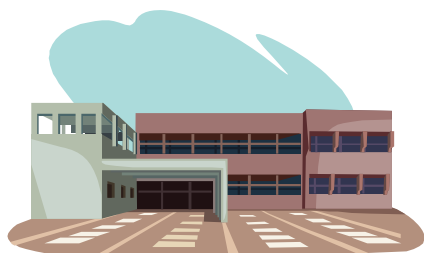
One recent systematic review examined the impact of secondary school size on a number of different outcomes. They found that larger secondary schools tend to do better on exam scores and attendance, but that there was some threshold where this result started to diminish. The estimates of this threshold are too imprecise to be useful in determining optimal secondary school size. They also found that costs per pupil appear to decrease as school size increases.

While the implications of different school sizes on student behaviours are unclear, both teachers and students at smaller schools are more likely to have a positive view of their “school environment”.

Other behaviours, such as student drop-out and attendance, student “violence”, are not clearly connected to school size, although several studies point in the direction of an optimal size between very small and very large to reduce these behaviours.

What is a systematic review?

A systematic review is a literature review focused on a research question that tries to identify, appraise, select and synthesize all high quality research evidence relevant to that question. The features that distinguish a systematic review are 1) a comprehensive search for relevant studies that match pre-determined criteria for eligibility and relevance and 2) a method for rating or ranking the strength of the evidence in the studies identified.



Why does this matter?

- ⇒ *Building new schools is a large investment by school boards. **Determining the “right” size for a school has implications for costs and student achievement over many years.***
- ⇒ *This study found that **student achievement increased with school size**, although there is probably a **threshold where achievement starts to diminish**.*
- ⇒ ***Cost per pupil decreases with the increase in school size.***
- ⇒ *Both **students and staff** are more likely to have a **positive view of their school environment as the school is smaller**.*



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What did they do?

The research team established a four-stage review process, beginning with 1) creating inclusion and exclusion criteria; 2) systematic identification of studies which were then screened against the criteria; 3) data extraction and critical appraisal; and 4) synthesis of the findings.

They used computer searching in ERIC, British Educational Index, Australian Educational Index, Social Science Citation Index, Applied Social Sciences Index and Abstracts, and PsychInfo. They included studies in which a variable for school size was a controlling variable, focused on mainstream secondary education, and contained empirical data and outcomes. The outcomes had to be one or more of the following: 1) student: attainment and progress, attitudes, behaviour; 2) teacher: morale, experience and perceptions; 3) school: organization, management, costs. The studies also had to control for socio-economic status due to the potential confounding effect of this variable.

They excluded studies targeting “schools within schools”, or studies of students who were “higher achieving” or had “special educational needs”.

What did they learn?

They found 31 studies reported in 42 papers that met their inclusion criteria. Twenty-one of the studies were from the United States, two from Canada, six from England, and one each from Finland and Australia. The studies were published between 1993 and 2004. Studies varied widely in the number of schools or students involved, from some small studies with less than 500 students to some large studies with more than 5,500 schools with more than 2.9 million students.



March 16, 2012

While some studies with more than one outcome reported conflicting results, overall results suggest that studies with a high/medium weight of evidence tended to show a quadratic relationship between size and the measured outcome. In other words, some positive outcomes increased with school size, until a tipping point was reached, and then these outcomes decreased.

Studies that controlled for prior academic achievement (4 in total) all showed a consistent quadratic relationship between school size and the outcome, while studies that did not control for prior achievement (15 studies) were more mixed in their results.

Five studies examined the relationship between school size and drop-out or absence rates. The studies that were graded as high/medium weight of evidence (2 in total) report a quadratic relationship between school size and attendance. The studies with medium or medium low weight of evidence report a positive relationship between school size and absence or dropout rates. In other words, as the school size increases, so does the absence and dropout rate, across the entire range of school sizes.

Five studies looked at the relationship between school size and student or teacher perception of their school. While they used different concepts and measures of school perception, the outcomes were consistent across all the studies. As school size increased, student and teacher perceptions of their school climate decreased.

This brief summary was prepared from:

M. Newman, Z. Garrett, D. Elbourne, S. Bradley, P. Noden, J. Taylor, A. West, Does secondary school size make a difference?: A systematic review, Educational Research Review, Volume 1, Issue 1, 2006, Pages 41-60

Please see the original document for full details. In the case of any disagreement between this summary and the original document, the original document should be seen as authoritative.