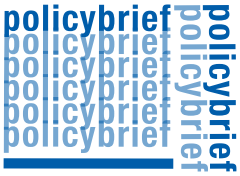
Class Size Reduction: A Proven Reform Strategy

Meaningful reductions in class sizes have been difficult to achieve because of tight school budgets and competing priorities, but we must continue towards this goal. The proven long-term benefits of reducing class sizes—achievement gains and higher graduation rates—should help determine our priorities. The long-term consequences of not reducing class sizes will have a negative impact on our children's futures.

—NEA President Dennis Van Roekel

Common sense tells us—and research confirms it—that the number of students in a class can make a real difference for students and teachers alike.



With policymakers, administrators, parents, researchers, and classroom educators all looking for ways to improve the academic performance of America's public school students, it is time to look more seriously at the costs, benefits, and feasibility of hiring enough teachers to effectively reduce class sizes. In high poverty and low-achieving schools especially, where resources and personnel are always stretched thin, hiring additional teachers and creating space for smaller classes may seem out of reach. But, with the deluge of research documenting the benefits of smaller classes, especially at the earliest grades, it is time to take another look at this important education reform strategy.

STAR studies go back 20 years

Twenty years have passed since the first large-scale experiment on small class size was conducted—the Tennessee Student/Teacher Achievement Ratio (STAR) program. [1] Several follow-up studies on the STAR program and other similar class reduction programs confirm substantial academic gains for K–3 students in smaller classes compared to students in larger classes. In the STAR study, those in kindergarten classes of 13-17 students were about one month ahead of their counterparts in classes of 22-25 students at the end of the year and, by the end of second grade, those in the smaller classes were about two months ahead. [2] Even when instructional aides were present in the larger classes, the students did not perform as well as those in the smaller classes. The results were the same for boys and girls, but for Black students, the results were much more dramatic. Black students in the smaller classes outperformed Black students in larger classes at a rate two to three times higher than the white students did over their white counterparts.

The effect of smaller classes on student achievement extends far beyond the early grades. Follow-up studies of STAR students through grade 7 show higher achievement levels in reading, language, math, science, and social studies. [3] Additionally, students in smaller classes showed more positive behaviors towards engagement and learning than did the students in larger classes.

Twenty years after the STAR experiment, researchers are still examining the massive data collected on the students and are finding even more evidence of long-term benefits. The high school transcripts of former STAR students showed that those who had been in smaller classes for at least three years—particularly students from low-income backgrounds—were significantly more likely to graduate from high school. [4] Also, Black students who had been in smaller classes were significantly more likely to take the ACT

or SAT college entrance exams, and the gap between Black students and white students in taking college entrance tests was reduced by 60 percent. [5]

Class size reduction projects in other states further document the positive effects of smaller classes. The California program, initiated in 1996, showed that class size effects held up across a wide spectrum of students of different ethnic, economic, and language backgrounds. [6] In Wisconsin, the Student Achievement Guarantee in Education (SAGE) program evaluations confirm that smaller classes have significant positive effects on Black students across all income levels. There also is evidence that poor school attendance is likely to have less significant impact on achievement when those students are in smaller classes.

To date, there has been only one noteworthy research attempt to refute the research on small class size, [8] but even that effort has been criticized for faulty methods, and it has not gained much ground in shaping the debate. [9] Overall, the issue that has most hampered efforts to reduce class sizes is the concern over cost. The costs associated with hiring new teachers and restructuring school space to accommodate more classrooms is a major issue for education administrators and policymakers who constantly seek ways to cut costs and get more out of the limited dollars that are available to their schools.

The costs of reducing class size

Proposals to reduce class sizes often hinge on the up-front costs for districts to hire more teachers and restructure classroom space. What's less often mentioned in the debate are the costs associated with *not* reducing class sizes, such as the cost to society in higher dropout rates and the reduced earning potential of poorly educated citizens. While the cost of reducing class size can be considerable, the cost of not doing so is even greater.

With the benefits of class size reduction well documented, Congress has made some attempts to fund such efforts. School districts have received close to $1.5 billion annually through the 1998 Class Size Reduction Program [10, 11] (before it was eliminated) and, later, through the Title II grant program of the No Child Left Behind (NCLB) Act.

Districts themselves have taken the initiative to reduce class sizes by creatively combining state and local funding sources, as well as reallocating resources and personnel to hire additional teachers. One example is Rochester, New York, where class sizes were reduced in grades K–4 without any additional cost by reallocating personnel and phasing in the program over four years. [12] Similar efforts have been made in North Carolina, Michigan, Wisconsin, and South Carolina, where administrators have reassigned personnel, consolidated jobs, and reduced school projects in order to reap the benefits of small class sizes. [13] The problem is that the kind of flexibility needed to reallocate personnel and resources frequently depends on the level of existing resources and the need for remedial programs and services. From this perspective, low-income districts, which one could argue have the greatest need for class size reductions, are likely to be the most restricted in their ability to reallocate resources on their own.

Returns on the investment

In calculating the costs to society, a cost-benefit analysis of the famous STAR project estimates that reducing class sizes from 22 to 15 in grades K–3 results in a $2 return on every $1 spent. [14] This calculation is based on the assumption that an increase in achievement scores is associated with higher earnings later in life. Other analyses have focused on the economic benefits of increasing high school graduation rates as a result of smaller class sizes.

A group of leading education and economics researchers have calculated that it costs $143,600 to produce one additional high school graduate, if you factor in both the cost of smaller class sizes in the early grades and the cost of education up to graduation. [15] However, this per-pupil cost could be significantly lowered if the class size reduction were targeted to the students more at risk of dropping out. The lifetime economic benefit of the graduate to the public would be $209,100. Since each age cohort

includes approximately 700,000 dropouts, the researchers estimate that reducing this number by half would result in an economic benefit of $45 billion.

Yet, the benefits of smaller classes go much further than simply higher tax revenues on future earnings. They also include some less obvious lifetime benefits to students and the community, such as improved health, less Medicaid coverage, lower crime rates, and fewer welfare recipients. [16] Class size reduction is perceived to be costly only if the expenses are considered without also taking into account the benefits to individuals and to society.

Pupil-teacher ratios and class size are not the same measure

A key issue in class size discussions is how to measure it. Most districts and states rely on the calculation of a pupil-teacher ratio (PTR) that is often confused with average class size.

The two numbers are not synonymous and should not be used interchangeably. The PTR is usually derived from the number of students in a school divided by the number of professional staff (not only teachers), while class size should be the actual number of students who regularly appear in a teacher's classroom. Quantitative estimates put the difference between the PTR and actual class size at about 10 students, [17] with the commonly used PTR designation making classes appear smaller than they really are.

How the PTR is used creates confusion about teacher workloads. In addition, it undermines education research in that studies using actual class size or class size limits tend to show positive effects of reduced class size, and those using PTRs tend to show marginal effects at best. Yet, since there is not a central system or standardized method for collecting data on actual class sizes across districts and states, the calculations of pupil-teacher ratios are the only approximate measures available at this time.

NEA supports reducing class size

The National Education Association (NEA) has taken a strong position in the class size debate. NEA supports a class size of 15 students in the earliest grades of regular school programs and even smaller classes in programs for students with exceptional needs.

Benefits of Small Class Size

- Broad economic benefit: Benefits are greater than the costs
- Closing the racial achievement gap: 38% reduction in test-score gap in grades K–3
- Early identification of learning disabilities: Fewer special education placements later on
- Improved high school graduation rates: Fewer incarcerations and higher future earnings
- Increased college entrance test-taking rates: Smaller racial gaps in taking college entrance tests
- Improved student behavior: Large reduction in discipline referrals
- No recurring annual costs: Once small classes are established, the extra costs for succeeding years are minimal

NEA also supports efforts to improve the accountability of districts and schools in monitoring and reporting class sizes. In fact, two past Association presidents, Helen Pate-Bain and Helen Wise, are working to develop a centralized database to track progress in reducing class sizes nationwide. Their National Class Size Database (NCSD) project, [18] under the management of the Health and Education Research Operative Services (HEROS), Inc., and supported by NEA, will improve the validity of research on class size effects and provide educators and policymakers with more accurate information on teacher workloads and conditions that affect student achievement. Advocates of smaller class sizes are hopeful that the database will be adopted nationally in every state and every school district as the central repository for recording and reporting class size data.

NEA also is actively monitoring state and federal legislation related to class size reduction and has strongly lobbied to have a federal mandate for class size reduction included in the reauthorization of the Elementary and Secondary Education Act of 1965 (ESEA), currently known as the No Child Left Behind Act.

References

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[17]Sharp, M.A. 2000. *An analysis of pupil-teacher ratio and class size.* Ypsilanti, MI: Eastern Michigan University. Doctoral dissertation.

[18] www.national-class-size-database.org.

Resources

Class Size Matters—Provides research on class size, analyzes and monitors class size data, and provides summaries on the benefits of smaller classes.
www.classsizematters.org

HEROS, Inc.—Provides the full text of various research reports on the effects of class size reduction.
www.heros-inc.org