



**class size matters**

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## **In California, class size reduction led to significant improvements in student achievement, parental involvement, and teacher retention**

Many myths have been put forward that the statewide effort in California to reduce class sizes in the early grades that began in 1996 had disappointing or null results. Actually, all the controlled studies -- and there have been at least eight -- showed significant achievement gains from smaller classes.

Since nearly all elementary schools in the state reduced class size at once, especially in grades K-2, it was difficult for researchers to find a control group with which to compare outcomes. Also, the state exam was new, making it difficult to compare achievement gains to past trends.

Yet given these limitations, the results were striking: even when analyzing the achievement of third graders who had the benefits of a smaller class for only one year, the gains were substantial, especially for disadvantaged students in inner-city schools.

Also, contrary to the urban legend conveyed by its opponents, there was no evidence that the gains from smaller classes were undermined by a flood of ineffective teachers. In fact, studies suggest that after a few years, smaller classes led to a more effective, experienced teaching force, by lowering teacher attrition, and, especially in high-poverty schools, lowering the rates of teachers who left to work in wealthier schools.

### ***Here are some findings from the relevant research on the impact of class size reduction in California:***

- Parents were more involved in schools where class size reduction occurred, and more apt to volunteer in the classroom. <sup>1</sup>
- Teachers reported that students in reduced size classes were less disruptive and more often "on task."<sup>2</sup>
- Fourth grade students who were in reduced class sizes in grades K-3 had substantially higher scores in math on the national assessments known as the NAEPs, of between 0.2 and 0.3 of

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<sup>1</sup> Cathleen Stasz, et.al., "Teaching Mathematics and Language Arts," p. 67 in: Brian M. Stecher and George W. Bohrnstedt eds., *Class Size Reduction in California: Findings from 1999-00 and 2000-01*, February 2002, Sacramento, CA: California Department of Education

<sup>2</sup> Ibid., p.66.

a standard deviation, compared to closely matched students who were not in smaller classes.<sup>3</sup> These gains are what would be expected from the experimental Tennessee STAR studies.

- Students who were in smaller classes only in third grade also performed better significantly compared to those who remained in a large class in 1997–98 and in 1998–99. The differences in scores were equivalent to effect sizes of about 0.04 to 0.1 standard deviation, about the same size as students placed in small classes for only year in the Tennessee STAR studies.<sup>4</sup>
- Multiple analyses show that even greater gains were experienced by poor and minority students. One study showed that in the five largest school districts in California other than Los Angeles, that is, San Diego, San Francisco, Long Beach, Oakland and Fresno, class size reduction raised the proportion of third graders who exceeded the national median score by 10.5 % in math, and 8.4 % in reading, after controlling for all other factors.<sup>5</sup>
- In the above study, the more black students in the school, the greater the gains —14.7% more students exceeding the national median in math, 18.4% more in reading in schools with 100% black student enrollment (again, in urban districts aside from Los Angeles.) These are stunning figures, especially considering that the researchers analyzed the results for those 3rd graders who had been in smaller classes for only one year. Substantial benefits were also found in schools with high percentages of poor students.<sup>6</sup>
- Several controlled studies showed substantial gains also from class size reduction in Los Angeles public schools. One study found that smaller classes increased reading scores in the SAT-9 exams by 9.5%, math scores by 13.9% and language scores by 14.5%, with approximately double these gains for “high need” students. No major changes in either curriculum or instruction had taken place over this time period that might have led to these improvements.<sup>7</sup>
- Two other controlled studies also show significant gains in Los Angeles, with effect sizes that increased the longer the child remained in smaller classes. Some of these gains were shown to persist into the fourth and fifth grades.<sup>8</sup>

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<sup>3</sup> See Fatih Unlu, “*California Class Size Reduction Reform: New Findings from the NAEP*,” Princeton University, Nov. 2005; which found that California 4th graders’ NAEP test scores in Mathematics increased by between 0.2 and 0.3 of a standard deviation compared to the increase for closely matched students who were not in reduced class sizes.

<sup>4</sup> Brian Stecher and George Borhnstedt eds., “*Class Size Reduction in California: Findings from 1999–00 and 2000–01*,” 2002, p. 72. The authors conclude that “in those selected cases where the California and Tennessee results can be directly compared, the findings are similar.” [http://www.classsize.org/techreport/year3\\_technicalreport.pdf](http://www.classsize.org/techreport/year3_technicalreport.pdf) ..

<sup>5</sup> Christopher Jepsen and Steven Rivkin, “*Class Size Reduction, Teacher Quality, and Academic Achievement in California Public Elementary Schools*,” Public Policy Institute of California, 2002; see p.48, figure 4.3; [http://www.ppic.org/publications/PPIC161/05\\_ppic161ch4.pdf](http://www.ppic.org/publications/PPIC161/05_ppic161ch4.pdf)

<sup>6</sup>Ibid., figure 4.9, p.55 and figure 4.6, p.52.

<sup>7</sup>Harold Urman, “*The Effects of Class Size Reduction on Students’ Achievement, English Proficiency Designation, Retention in Grade, and Attendance*,” Vital Research, July 2000.

<sup>8</sup> Penny Fidler, “*The Impact of Class Size Reduction on Student Achievement*,” Los Angeles Unified School District, Publication No. 109, September 7, 2001. Also see Penny Fidler, “*The Relationship Between Teacher Instructional Techniques and Characteristics and Student Achievement in Reduced Size Classes*,” Los Angeles Unified School District, Publication No. 120, March 2002.

- Contrary to earlier anecdotal reports that the benefits of reducing class size were undercut by a flood of ineffective teachers, researchers found “little or no support for the hypotheses that the need to hire large numbers of teachers following the adoption of CSR [class-size reduction] led to a lasting reduction in the quality of instruction...Overall, the findings suggest that CSR increased achievement in the early grades for all demographic groups....”<sup>9</sup>
- Another study found that “When the Los Angeles Unified School District needed to triple its hiring of elementary teachers following the state’s class-size reduction initiative in 1997, the district was able to do so without experiencing a reduction in mean teacher effectiveness, even though a disproportionate share of the new recruits were not certified.”<sup>10</sup>
- Follow-up studies showed that class size reduction in California led to higher rates of teacher retention, especially among novice teachers, which would be expected to result in a more effective, experienced teaching force over all.<sup>11</sup>
- Over time, class size reduction also led to less teacher migration, particularly in districts with large numbers of poor children. Within a few years, the rate of teachers who left high-poverty schools to work in more affluent areas was much lower than before class sizes were reduced.<sup>12</sup>

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<sup>9</sup> Christopher Jenson and Steven Rivkin, “[\*Potential Tradeoff between Teacher Quality and Class Size\*](#),” Journal of Human Resources 44.1, 2009.

<sup>10</sup> Thomas J. Kane and Douglas O. Staiger. 2005. “*Using imperfect information to identify effective teachers. Unpublished Paper.*” School of Public Affairs, University of California–Los Angeles, Cited in Robert Gordon, Thomas J. Kane and Douglas O. Staiger, “*Identifying Effective Teachers Using Performance on the Job*,” Hamilton Project, April 2006.

<sup>11</sup> Lawrence P. Gallagher, “*Class Size Reduction and Teacher Migration, 1995–2000*,” CSR Research Consortium Capstone Report, 2002, see pp. C16-C17, esp. figure C 11, [http://www.classsize.org/techreport/CSRYear4\\_appxfin.pdf](http://www.classsize.org/techreport/CSRYear4_appxfin.pdf)

<sup>12</sup> *Ibid.*, see esp. figure C20, on C-29.