



**class size matters**

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## Benefits of Class Size Reduction

Reducing class size is one of the few educational strategies shown to increase learning for all students, yielding a host of cognitive and non-cognitive benefits. Throughout the nation, schools have seen sharp increases in class size in recent years.

Since lowering class size is one of the few education reforms that have been proven to work and to narrow the achievement gap, as well as yield economic benefits twice the cost, investing in smaller classes should be a top priority for all schools.

- The Institute of Education Sciences, the research arm of the US Department of Education, concludes that class size reduction is one of only four, evidence-based reforms that have been proven to increase student achievement through rigorous, randomized experiments -- the "gold standard" of research.<sup>1</sup>
- The STAR experiment in Tennessee, as well as studies from Wisconsin and elsewhere, demonstrate that students who are assigned to smaller classes in the early grades do better in every way that can be measured: they score higher on tests, receive better grades, and exhibit improved attendance.<sup>2</sup>
- Those students whose performance improves when class sizes are reduced are those who need the most help: children from poor and minority backgrounds, who experience twice the gains as the average student. Estimates are that reducing class size in the early grades shrinks the achievement gap by about 38%.<sup>3</sup>
- In addition, smaller classes enhance the development of "non-cognitive" skills not captured by tests, like persistence, motivation and self-esteem, which are also linked to success in school and in life.<sup>4</sup>

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<sup>1</sup> U.S. Department of Education Institute of Education Sciences, "Identifying and Implementing Educational Practices Supported by Rigorous Evidence: a User Friendly Guide," December 2003. The other three reforms are one-on-one tutoring by qualified tutors for at-risk readers in grades 1-3rd ; life-skills training for junior high students, and instruction for early readers in phonics.

<sup>2</sup> Jeremy Finn, "Class Size Reduction, Grades K-3," in: School Reform Proposals: The Research Evidence, ed. A. Molnar, 2002 . See also Ivor Pritchard, Reducing Class Size: What Do We Know? US Department of Education, 1999. Alex Molnar, et.al. 1999-2000 Results of the Student Achievement Guarantee In Education (SAGE) Program Evaluation, December 2000, Center for Education Research, Analysis, and Innovation, University of Wisconsin-Milwaukee.

<sup>3</sup> Alan B. Krueger and Diane M. Whitmore, January 2001. "Would Smaller Classes Help Close the Black-White Achievement Gap?" in John E. Chubb and Tom Loveless, eds., Bridging the Achievement Gap, Brookings Institution Press 2002.

<sup>4</sup> Thomas Dee and Martin West, "The Non-Cognitive Returns to Class Size," Educational Evaluation And Policy Analysis, March 2011; see also Philip Babcock and Julian R. Betts, "Reduced-class Distinctions: Effort, Ability and the Education Production Function," Journal of Urban Economics, May 2009; J. Heckman and Y. Rubinstein, "The Importance of Noncognitive Skills: Lessons from the GED testing program," The American Economic Review, May 2001.

- Alan Krueger, Chairman of the Council on Economic Advisers, has estimated that every dollar invested in reducing class size yields about \$2 in benefits.<sup>5</sup> This does not take into account savings from lower rates of grade retention or special education referrals, both of which fall when class sizes are lowered.<sup>6</sup>
- Class size reduction is likely to have large public health benefits – with medical savings comparable to spending on antibiotics or even vaccines-- with nearly two more years of life projected for students who are in smaller classes in the early grades.<sup>7</sup>
- The benefits of class size reduction in the early grades last throughout a student's educational career. Tennessee students who attended smaller classes in the early grades were significantly ahead of their regular-class peers in all subjects in later grades.<sup>8</sup>
- These students also had significantly lower drop-out rates, higher grades, and received better results on their college entrance exams. The graduation rate for free-lunch students more than doubled, and their likelihood of graduating closed the gap with non-poor students.<sup>9</sup>
- National surveys of educators believe that class size reduction is the most effective method to improve the quality of teaching. In a 2008 survey, 76% of teachers said that reducing class size would be "a very effective" way of improving teacher quality, and 21% responding that it would be an "effective" method, far outstripping every other reform cited.<sup>10</sup>
- A study commissioned by the US Department of Education analyzed at the achievement levels of students in 2,561 schools across the nation, as measured by their performance on the national NAEP exams. The sample included at least 50 schools in each state, including large and small, urban and rural, affluent and poor areas. After controlling for student background, the only objective factor that correlated with higher test scores was class size, and the gains in the upper grades associated with smaller classes surpassed the gains from smaller classes in the lower grades.<sup>11</sup>

*Prepared by Leonie Haimson, Executive Director, Class Size Matters, June 4, 2013.*

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<sup>5</sup> Alan B. Krueger, "Economic Considerations and Class Size," *The Economic Journal*, February 2003.

<sup>6</sup> See for example, only 16.7% of Nashville students who were in smaller classes in the early grades were held back through 10th grade, compared to 43.5% of those who had been in regular-size classes. Jayne Boyd-Zaharias et al, "The Student/Teacher Achievement Ratio (STAR) Project, STAR Follow-up Studies, 1996-1997, HEROS Inc., September 1997.

<sup>7</sup> Peter Muennig and Steven H. Woolf, "Health and Economic Benefits of Reducing the Number of Students per Classroom in US Primary Schools," *American Journal of Public Health*, September 27, 2007.

<sup>9</sup> Helen Pate-Bain, 1999, "Effects of Class-Size Reduction in the Early Grades (K-3) on High School Performance," HEROS Inc., Jeremy D. Finn, Susan B. Gerber, Jayne Boyd Zaharias, "Small Classes in the Early Grades, Academic Achievement, and Graduating From High School," *Journal of Educational Psychology*, 2005.

<sup>10</sup> Public Agenda, "Lessons Learned, Issue No. 3: New Teachers Talk About Their Jobs, Challenges and Long-Range Plans," May 26, 2008.

<sup>11</sup> Donald McLaughlin and Gili Drori, *School-Level Correlates of Academic Achievement: Student Assessment Scores in SASS Public Schools*. Washington, DC: U.S. Department of Education, 2000. See also David Grissmer, et.al. *Improving Student Achievement: What State NAEP Test Scores Tell Us*. Santa Monica, CA: RAND, 2000, which had similar results from analyzing national test score data from 44 states to look at the effect of different educational factors on student achievement. The study showed that, controlling for students' family backgrounds, states with the lowest class size in the early grades had the highest NAEP scores.