

# spotlight

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## **HONEY, I SHRUNK THE CLASS!** *How Reducing Class Size Fails to Raise Student Achievement*

**S U M M A R Y :** In November, the State Board of Education released the final report of the High Priority Schools Initiative, a four-year, \$23 million class-size reduction program targeting low-performing and low-income elementary schools. The report offered no statistical evidence that smaller class sizes raised student achievement. Between the first and final year of the program, fewer schools met their state ABC growth targets and even fewer made Adequate Yearly Progress under the federal No Child Left Behind law. Reduced class sizes failed to significantly increase student performance on state reading assessments. In the future, legislators and policymakers should not fund class-size initiatives because of their expediency or popularity but because they produce measurable gains in student achievement.

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**I**t received no media coverage. It did not make it on to the Department of Public Instruction website. Members of the State Board of Education spent little time talking about it.

Nevertheless, the final report of the High Priority Schools Initiative assessed one of the state's most important educational initiatives, a four-year (2001-05), \$23 million class-size reduction program targeting low-performing and low-income elementary schools.<sup>1</sup> The report's findings are even more important as the North Carolina Lottery Commission will distribute part of an estimated \$213 million in lottery revenue for class-size reductions in early grades.<sup>2</sup> Is this a good investment?

The answer is "no." By the final year of the program, the performance of students in high priority (HP) schools declined significantly. From the first to the fourth year of the program, fewer schools met their ABC growth targets and even fewer made Adequate Yearly Progress (AYP). In addition, small class sizes failed to produce significant gains in reading performance. In brief, there is no statistical evidence that smaller class sizes in high priority schools raised student achievement.

### **Class Size Reduction**

The General Assembly increased funding by an average of \$640,000 per school to reduce class size from an average of 17 students in 2001-02 to an

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average of 14 students in 2004-05 (Figure 1). Schools used the additional funding to add an instructional support position and extend teacher contracts for ten additional days of professional development and instruction. School districts also financed additional full-time teaching positions by reducing the number of teacher assistants. Not only did HP schools have average class sizes that were well below the state average, they were lower than the 15:1 student-teacher ratio planned for the initiative.<sup>3</sup>

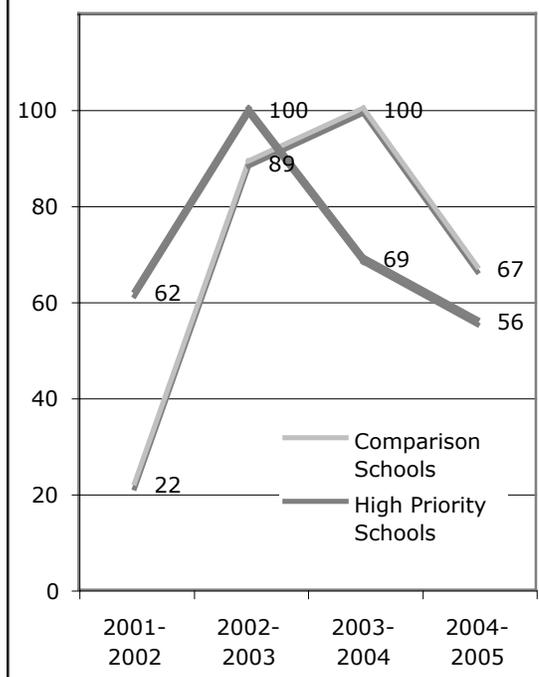
### Schoolwide Performance

The High Priority Schools Initiative report compared HP schools to a group of comparison schools. The 9 comparison and 36 HP schools had very similar student demographics and performance on ABC tests, but none of the comparison schools received funds to reduce class sizes. When all things are equal, one can determine the effect of class size on student performance without attributing it to other factors. This type of “experimental” research design is one of the best ways to observe the effect of a new educational program on students.

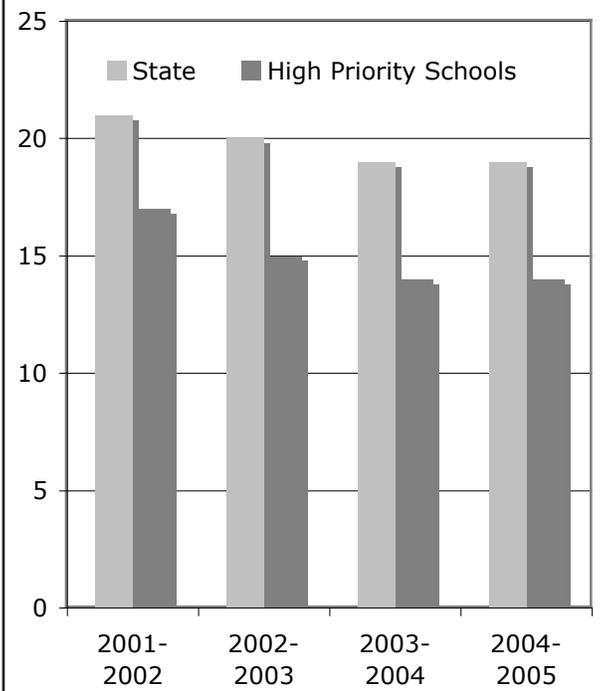
On schoolwide measures of performance, comparison schools with larger class sizes performed better than the HP schools. Between years one and four, 7 percent fewer HP schools met their expected ABC growth target — i.e., state-established expectations of the educational growth of the same groups of students from one year to the next. The comparison schools posted a nearly 45 percent increase (Figure 2). Although it appears that HP schools made dramatic gains in 2002-03, this improvement is exaggerated by low standards on state tests for that year.<sup>5</sup> After four years of reduced class sizes, small class sizes failed to improve the overall student performance at HP schools.

The most dramatic decline among HP schools occurred during the final two years of the program. The percentage of schools meeting their ABC growth targets plunged by 31 percent between years two and three and fell an additional 13 percent between years three and four.

**Figure 2. Percentage of Schools that Met Expected Growth Targets<sup>6</sup>**



**Figure 1. Average K-3 Class Size in North Carolina, 2001-05<sup>4</sup>**



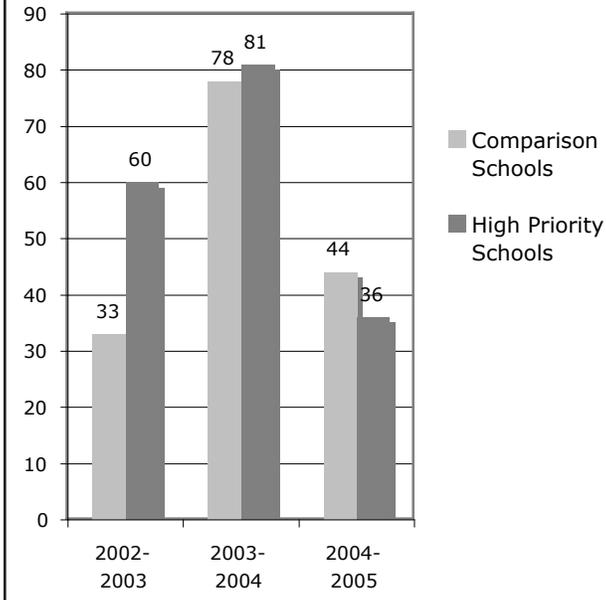
In addition, the percentage of HP schools meeting the requirements for making Adequate Yearly Progress (AYP) under the federal No Child Left Behind law declined from 60 percent in AYP’s first reporting year to 36 percent in year four. The comparison school percentage rose from 33 percent to 44 percent during the same period (Figure 3). Both schools followed a statewide trend in 2004 by making significant gains in attaining AYP. Between 2004 and 2005, HP schools had a more severe decline (-44.5 percent) than comparison schools did (-33.4 percent).

We would expect that as class size decreases, schoolwide achievement would increase. In fact, however, the opposite was true. As class size decreased, so did achievement. Additional years of class-size reductions failed to improve schoolwide performance.

### Student Reading Performance

According to conventional wisdom, smaller class sizes should provide the greatest gains in reading. Teachers should be able to provide more individualized reading instruction when there are fewer students in the class. Nevertheless, the independent consultants hired to assess

**Figure 3. Percentage of Schools Attaining Adequate Yearly Progress<sup>7</sup>**



the High Priority Schools Initiative admitted that there is no statistical evidence to suggest gains in reading, only anecdotal evidence:

Taken together, these findings suggest that there *may have been some* reading improvement at the HP (High Priority) school attributable to smaller class size. At the end of Year 4, many of the district- and school-level stakeholders *believed this to be true*, continuing to provide *anecdotal evidence* that increases in students' academic achievement can ascribed to the initiatives components, particularly reduced class size.<sup>8</sup> (Emphasis added)

Relative to the comparison schools, HP schools had a higher percentage of students that scored at or above proficient in reading in the final year of the program. However, they did not outpace the comparison schools in percentage change over the four years of the initiative. Between the first and last year of the program, 9 percent more HP students earned a reading score that was at or above proficient. On the other hand, 12 percent more students

from comparison schools scored at or above proficient during the same period. Therefore, over the course of four years, comparison schools had a greater improvement in reading, despite the fact that HP schools had lower class sizes.

If class-size reductions worked, there should have been a notable increase in reading performance during the final year of the initiative. HP schools would have had reduced class sizes for three years prior, allowing them ample time to correct problems found in the initial implementation of the program. In the final year of the initiative, however, the reading performance of HP schools was no better than the performance of comparison schools (Figure 4).

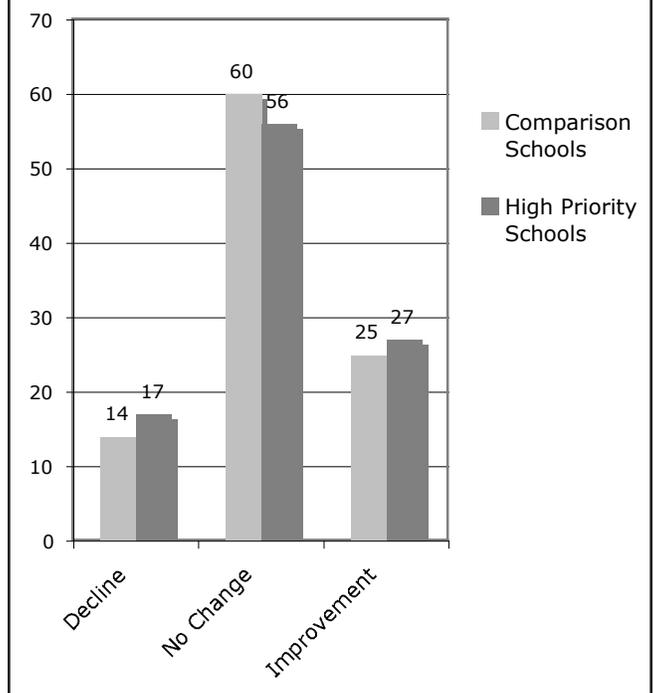
For both schools, most of the students showed no change. A slightly higher percentage of students at HP schools showed an improvement in reading scores, but HP schools also had a higher percentage of students with a decline in reading scores. In the final year of the program, smaller class sizes produced no significant gains in student reading performance.

### Conclusion

A noted education scholar points out that class-size initiatives tend to be convenient political instruments rather than proven educational reforms.<sup>10</sup> Support for reducing class size usually cuts across political and ideological divides, garnering accolades from legislators, policymakers, and parents alike. This political capital makes class-size initiatives a convenient centerpiece for campaigns for public office and school boards. After all, it seems to make sense that smaller classes let teachers give more individualized attention to students, leading to higher student achievement. The failure of the High Priority Schools Initiative to raise student achievement, however, shows that smaller classes are not the “magic bullet” that many believe it to be.

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**Figure 4. Percentage Change of Reading Scores for Grades 3-5, 2004-05 (All Levels)<sup>9</sup>**



## Notes

1. Metis Associates, "Third Annual Evaluation Report, High Priority Schools Initiative: 2004 – 2005," October 17, 2005.
2. North Carolina Education Lottery Commission, "Education Lottery Proceeds," <http://lottery.nc.gov/index.htm>
3. General Assembly of North Carolina, "The Appropriations Act, Session Law 2001-424, Sections 29.1 – 29.7," 2001, <http://www.ncga.state.nc.us/gascripts/BillLookUp/BillLookUp.pl?Session=2001&BillID=S1005>
4. North Carolina Education Research Council, First in America Annual Reports, 2001 – 2004, <http://erc.northcarolina.edu/content.php/system/fia.htm>
5. For the 2002-2003 school year, 94 percent of schools met or exceeded their growth target, compared to 75 percent in the year before (2001-2002) and after (2003-2004).
6. Metis Assoc., p. 39. Statewide figures from Department of Public Instruction, "State Testing Results," <http://www.dpi.state.nc.us/accountability/testing/shared/statetestsresults>
7. Metis Assoc., p. 40. Statewide figures from Department of Public Instruction, "AYP Subgroup Results," <http://ayp.ncpublicschools.org>
8. Metis Assoc., p. 62.
9. Metis Assoc., p. 49. Since no test of statistical significance was provided in the report, it cannot be determined if there is any meaningful difference between the percentages. In other words, did the class size reduction produce the differences between HP schools and comparison schools or are the differences a product of chance?
10. Eric A. Hanushek, "The Evidence on Class Size," *Occasional Paper* Number 98-1, W. Allen Wallis Institute of Political Economy, University of Rochester, February 1998.