



College of Human Resources, Education & Public Policy

## Education Policy Brief

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# Class Size

The issue of class size is a focus of recent policy initiatives. At the national level, President Clinton's State of the Union Address and the proposed FY '99 budget both call for reduced class size in America's public schools. The President's proposal includes lowering class size in grades 1, 2, and 3 to an average of 18. In his 1998 State of the State address Governor Carper also proposed a reduction in class size in the core academic areas - capping class size at 22 students in elementary and 28 at the middle and high school levels.

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### Research Findings:

- *Student Achievement* <sup>□</sup>

A major review of education research (1978) demonstrated a relationship between class size and student achievement- students learned more in smaller classes. However, classes had to be reduced to at least 15 students to have any consequential impact on achievement as measured through standardized tests.<sup>i</sup> Later critiques of this review indicated that the effects were driven by small groups (max. 3) and one-on-one tutoring. When these were eliminated, the reduction of classes to 15 or 20 would have shown little or no impact on student achievement.

In 1986 the Educational Research Service (ERS) reviewed studies on the effects of class size on achievement in elementary and secondary schools.<sup>ii</sup> ERS concluded that reduced class size had the most promising effect on students in the early primary grades. Effects seem to decrease as grade levels increase.

Studies rather consistently find that economically disadvantaged and some ethnic minority students perform better academically in smaller classes.

In 1984, four interventions (lowering class size, peer tutoring, computer-assisted instruction, and increased instructional time) were examined for cost-effectiveness related to student achievement. Peer tutoring was found to be 4 times as effective in improving math achievement as reducing class size. Computer-assisted instruction was also more cost-

effective than reducing class size or lengthening the school day.<sup>iii</sup>

In 1996,<sup>iv</sup> a review of economic impact studies revealed that quality teacher education had greater impact on student achievement than lowering class size, increasing teacher salaries, or increased teachers' years of experience.

- *Non-Achievement Issues*

Research based on classroom observations<sup>v</sup> has shown that reduction in class size permits but does not necessarily cause a change in teachers' instructional practice.

A major review conducted in 1980 found that teachers in smaller classes reported higher levels of satisfaction, morale, and lower stress levels.

The impact of reduced class sizes on students' attitudes and behaviors, e.g., attitudes toward school, self-concept, and motivation, was greatest for students under the age of 12.

- *Research examining State Initiatives on Class-Size Reduction (organized chronologically)*

**Indiana-Project Prime Time:** Some 20 years ago, Indiana reduced its student-teacher ratio to 14:1 in nine K-2 schools. Studies showed that students in smaller classes scored higher on standardized reading and mathematics tests. However, these achievement gains largely disappeared by the end of 3<sup>rd</sup> grade. Teachers reported fewer discipline problems and judged themselves as more effective.

**Tennessee:** An extensive study of the impact of K-3 class size reduction began in 1985 in response to legislative action. The 1<sup>st</sup> phase, Project STAR, revealed that students in classes of 15 showed substantial improvement in early learning of reading and mathematics as compared to those children in classes of 23. In the smaller classes there were fewer grade retentions and earlier identification of students with special needs. The 2<sup>nd</sup> phase, the Lasting Benefits Study, followed those children into regular sized classes in grades 4, 5, and 6. Students who started in smaller classes continued to outperform their peers who started in larger classes. The 3<sup>rd</sup> phase, Project Challenge, found that children in smaller classes from at-risk districts were performing better on tests than children in the same districts in previous years. Evaluators of STAR describe class-size reduction as "more preventative than remedial", that is, it is of most benefit when children first enter the system.

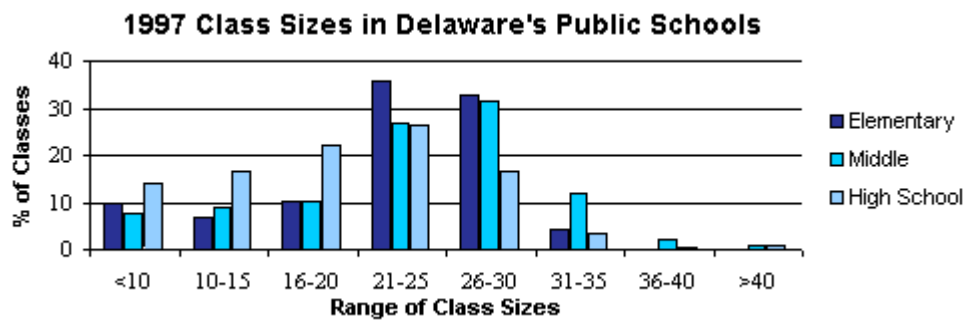
**Nevada:** In 1989 the Class Size Reduction Act required student-teacher ratios to be reduced in selected K-3 classes. Since the Act focused only on ratios, some alternative class configurations resulted (e.g., multi-grade, pull-outs, team teaching). Consequently, effects on student achievement were mixed; special education status, English-Second Language status, ethnicity, free lunch eligibility, and class configuration were more strongly related to student achievement than class size.

**California:** Recent legislation to reduce class size has not as yet yielded studies that examine student achievement. Thus far, evaluations have focused on attitudes. The majority of teachers, principals, and parents believed that reduced class size had a positive impact on

teaching and learning opportunities in 1<sup>st</sup> and 2<sup>nd</sup> grades. Teachers in the smaller classes were particularly satisfied but teachers from other grade levels expressed uncertainty and frustration about overcrowding.

### Delaware Situation:

Polls<sup>vi</sup> of Delaware citizens expressed concern for the impact of class size upon education. In 1995 and 1996, 54% and 48% of the public, respectively, rated the reduction of class size as very important. Implications of a statewide initiative should be examined in relation to the current status of class size.



The source of the previous table is the 1997 School Profile Data from the DE Dept. of Education.

- Some 37% of the state's elementary classrooms (N = 4845) have over 25 students-- another 35% or 1693 classes have between 21 and 25 students;
- Approximately 15% of middle school classrooms (N = 6748) have over 30 students-- another 32% or 2159 classes have between 26 and 30; and,
- Just under 5% of the state's high school classrooms (N = 10,332) have over 30 students-- another 16% or 1653 classrooms have between 26 and 30 students.

### Research Summary:

*Class-size reduction has limited effect upon student achievement.* There is little conclusive support that decreasing class size will by itself improve student learning. Where positive effects have been seen, they occur in primary grades and with economically disadvantaged and some minority students. The sustainability of the effects upon achievement is questionable. Reducing the size of classes can prevent achievement gaps from developing but does not seem to remedy gaps that already exist. The research supports the use of class-size reductions as only one part of a targeted and multi-dimensional approach to improving student achievement.

*Class-size reduction is expensive.* The incremental benefits of decreasing class size may not exceed the associated costs. Reductions in class size have small positive effects on achievement compared to many less costly learning interventions and strategies.

*Class-size reduction has intuitive appeal.* Teachers and parents regularly report that they believe that smaller class sizes will improve teaching and learning. Studies have shown positive attitudinal

effects among teachers and elementary students.

### Policy Questions for Consideration:

- The best achievement effects occur in grades K-3 in reading and math with classes having less than 15 students. What can be realistically expected of efforts to reduce classes only to 22?
- Considering the low cost-effectiveness of class-size reduction, would alternative policies yield better and more affordable results?
- If implemented, should class-size reductions target toward specific groups and grade levels?
- Since reducing class size has little benefit to students if teachers do not change their instructional practices, what are the implications for improving teachers' professional development?
- The research does not significantly address the effects of class-size reduction on middle or high school students. What, if any, unexpected (and perhaps undesired) consequences might result from capping classes at 28 in the core academic areas?

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□ A major limitation of most research on class size and achievement is that the majority studies are based on the use of tests of basic skills. Since Delaware's reform addresses achievement from a more complex view, i.e., higher order thinking, problem solving, and communication, one should recognize shortcomings within the existing research base.

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<sup>i</sup> Glass, G.V. & Smith, M.L. (1979). "Meta-analysis of research on class size and student achievement," *EEPA*, 1(1), pp. 2-15.

<sup>ii</sup> Educational Research Service (1980). "Class size research: A critique of recent meta-analyses," *Phi Delta Kappan*.

<sup>iii</sup> Levin, H., Glass, G.V., & Meister, G. (1984). Cost-Effectiveness of CAI. *Evaluation Review*, 11(1), pp. 50-72.

<sup>iv</sup> Greenwald, R., Hedges, L.V., & Laine, R.D. (1996). "The effect of school resources on student achievement," *Review of Educational Research*, 66(3), pp.361-96.

<sup>v</sup> Jarvis, C., et al. (1987). *Shaping the future: Teaching our youngest children*. O.E.A. Bulletin #2.

<sup>vi</sup> Brown, P. *Public Perceptions of the Condition of Education in DE, 1995 & 1996*. DE. Education R&D Center.

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