



**EPSSL** | EDUCATION POLICY STUDIES LABORATORY  
Education Policy Research Unit

## SCHOOL REFORM PROPOSALS: THE RESEARCH EVIDENCE

### CLASS-SIZE REDUCTION IN GRADES K-3

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#### *Research Quality*

Research on class size is deep, with more than 200 studies, and has demonstrated that an appropriate class size is fewer than 20 students. The greatest benefits are shown in early grades, as well as for minority students and those in large urban districts.

#### *Research Findings*

**Tennessee's STAR Project:** A longitudinal study with experimental controls compared small classes (13-17 pupils) with regular classes (22-25 pupils) in grades K-3. Students in small classes uniformly outperformed those in larger classes; minority students, pupils in inner-city schools, and pupils in small classes for three to four years from kindergarten or grade 1, benefited most. More minority students took college admission tests. Black-white achievement gaps fell. Teacher morale, time spent on active teaching, and student engagement all rose; time spent on classroom management, disruption and discipline problems, and retentions in grade all fell. Full-time aides in lieu of reducing class size produced no achievement advantage.

**Wisconsin's SAGE Project:** A phased-in, statewide reduction in K-3 class size to 15 pupils per teacher, targeting schools with students living in poverty. Evaluations have consistently found improved achievement, especially for minority students. Data from questionnaires, observation, and interviews have shown how to best implement small classes.

**Burke County, North Carolina:** Smaller classes (17:1) in grades 1-3 significantly outperformed regular classes in math and reading; advantages persisted when pupils returned to regular classes from grades 4 through 7. Careful allocation of resources allowed administrators to implement small classes at no additional per-pupil cost.

**California:** A statewide reduction in class sizes to 20 pupils or fewer in K-3 classrooms produced small achievement gains, but was hampered by too-hasty implementation that required hiring teachers lacking full credentials.

**Federal:** Class-size reduction efforts begun in 1999-2000 is not a current priority.

**Long-term impact:** STAR and subsequent studies showed that the greatest initial impact on student achievement results when students enter reduced-size classes in kindergarten or grade 1. Pupils in small classes for at least three years had significant sustained benefits through grade 8; those in small classes for fewer than three years showed mixed long-term effects.

**Implementation strategy and limitations:** Large class-size reduction works well when begun in kindergarten or grade 1 and phased in to include grades 2 and 3. Findings from STAR and similar studies cannot be generalized to programs that reduce pupil-teacher ratios but not the number of students in a room (team-taught classrooms, part-time reduction for specific subjects). For schools to benefit, class size must be fewer than 20 pupils. California showed that reducing class size without enough qualified teachers can offset the benefits.

**Criticisms:** Economist Eric Hanushek, who finds inadequate benefits from smaller class sizes, incorrectly uses pupil-teacher ratios (PTR). These are not the same as class sizes. Researchers have found errors in data and analysis in Hanushek's work that reverse his findings if corrected; his work omits studies that find benefits in smaller classes.

### ***Remaining Research Questions***

Why do small classes work so well? The strongest hypothesis: small classes engage students more and discourage disruptive behavior.

### ***Recommendations***

- Resources should be provided to schools and districts serving low-income pupils to restrict class sizes in the primary grades to no more than 18 pupils.
- To ensure that the research-documented benefits of small classes are realized, policies for implementing small classes should include the following provisions:
  - Begin class-size reduction in K-1; add additional grades in subsequent years.
  - Use the reduced-class model supported by research: one teacher in a classroom with 18 or fewer pupils. Pupils assigned to small classes should represent a cross-section of students in the school, *not* just difficult-to-manage students.
  - Plan for class-size reduction in advance, hiring fully-qualified teachers. Programs of professional support and development are likely to be helpful.
- Systems should be established to monitor class-size reduction initiatives continually and closely, providing feedback to administrators, policy makers, and parents about the successes of the program. Teachers should be afforded opportunities to discuss problems as they arise, and to have them addressed by the school administration.

The foregoing is a summary of a chapter in the book *School Reform Proposals: The Research Evidence* (Information Age Publishing, 2002), edited by Alex Molnar. The full chapter can be viewed at:

<http://www.asu.edu/educ/epsI/EPRU/documents/EPRU 2002-101/Chapter 02-Finn-Final.pdf>