

Financing Class Size Reduction



SERVE
*Improving Learning through
Research & Development*

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Author's Note

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Class size reduction has been shown to, among other things, improve academic achievement for all students and particularly for low-income and minority students. With the No Child Left Behind Act's heavy emphasis on scientifically based research, adequate yearly progress, and disaggregated results, one wonders why *all* children aren't enrolled in small classes. Unfortunately, concerns about class size reduction's expense and misunderstandings about the research discourage class size reduction implementation. This document addresses these concerns by providing an overview of class size reduction financing that includes:

- ◆ Definitions of class size reduction terminology with implications for class size research;
- ◆ Guidelines for financing class size reduction implementation;
- ◆ Case studies of successful class size reduction implementations at little or no extra expenditure;
- ◆ A summary of class size reduction cost-benefit considerations; and
- ◆ A comprehensive bibliography.

The minimum base for informed decisions about class size costs and their computations is clarity that starts with careful definition of important terms and their consistent use throughout the discussion. For example, the terms *class size* and *pupil-teacher ratio* (PTR) are not the same. Thus, projections of class size costs that are based on PTR computations or estimates used as a proxy for class size data are not appropriate information about class size costs. Estimates of costs based on PTR data provide very high figures and shroud the actual costs of small classes that are addressed later.² For clarity, terms used in this document are defined here:

Average Class Size—Derived from school-level data. Average class size is calculated by dividing the number of students in a school by the number of regular classroom teachers only.

Class Size—“The number of students for whom a teacher is primarily responsible during a school year” (Lewit & Baker, 1997, p. 113). Class size is an *addition* problem, solved by counting the number of students in a class or on the class roll.

Class Size Reduction—Includes efforts to achieve class sizes smaller than at present, such as from 25 to 18 pupils. Accurate pre and post data are needed for comparison and analyses of the class size reduction processes and outcomes.

Pupil-Teacher Ratio (PTR)—“The number of students in a school or district compared to the number of teaching professionals” (McRobbie et al., 1998, p. 4). In some venues, all educators are part of the computation, including counselors, administrators, etc. Determining PTR is a *division* problem. In a room with 30 students and one teacher, the class size is 30, and the PTR is 30:1. If a second teacher is added, the PTR becomes 30:2 or 15:1, but the class size is still 30. In computing PTR, the divisor is very important.

Small classes or appropriate-sized classes refer to classes of about 14–18 in K, 15–18 in grades 1–3 or 1–4.

Discussions of cost issues often generate resistance to small classes. But dire predictions of high costs for small classes are often:

- ◆ Based on economic “models” and estimates rather than costs actually encountered in successful class size reduction efforts;
- ◆ Built on PTR equations and not actual class size data; and
- ◆ Estimated for varying grade levels (e.g., grades 9–12) rather than for the early primary grades, where most class size research has been done.

These theoretic predictions are not based on actual cases of small class use in primary grades where the research is most consistent and prevalent. Determining actual small class costs is difficult because calculations must be done on a school-to-school basis, rather than drawing data from large databases, a condition that produces PTR and not class size information. The finance case studies provided later in this document provide actual data and examples of class size implementations.

Chapter I—Background Information

Longitudinal research has shown that small classes begun early in the students' education, for example in pre-school and PK or K (early intervention), and continued for at least three and preferably four years (sufficient duration), have continuing, demonstrable, increasing positive benefits. This statement derives from two acclaimed education experiments. Those experiments are the Perry Pre-School study of 123 impoverished Michigan youth (Barnett, 1995) and the Tennessee STAR experiment with 11,601 students, which demonstrated the value of small classes (about n=15 students) over regular classes (about n=24 students or 24 students and a full-time teacher assistant) in grades K-3 (Word et al., 1990; Finn & Achilles, 1990, 1999; Gerber, et al., 2001).

Positive results of both experiments [and of the North Carolina Abecedarian early intervention study (Campbell & Ramey, 1995)] continued long after the treatment ceased. Researchers following STAR students' progress found *lasting* and *increasing* cognitive benefits (test scores) as the students moved through the grades (Biddle & Berliner, 2002; Finn & Achilles, 1999; Finn et al., 2001; Finn, 2002; Nye et al., 1999). Benefits were evident in the rates of students taking college entrance examinations such as the Scholastic Aptitude Test (SAT) and the American College Testing Program (ACT), implying that students planned to attend college (Krueger & Whitmore, 2000).

An orderly class size reduction start, beginning with kindergarten and adding one grade per year through third or fourth grade, provides planning time for careful class size reduction implementation. Meantime, central administration planning for system-wide small classes can be based on research and theory "checkpoints" of potential savings from small classes.

Table 1. Checkpoints in Assessing True Costs of Appropriately Sized Classes in Primary Grades.

(Modified from Achilles & Price, 1999, p. 14)

Item Potential for Cost Saving	
Grade Retention	<ul style="list-style-type: none"> ◆ Number of students held back decreases ◆ Later drop-out rate decreases, graduation increases
Improved Student Behavior in School	<ul style="list-style-type: none"> ◆ Vandalism costs decrease ◆ Required corrective actions, such as Saturday school or detention decrease ◆ Classroom disruptions decrease
Remediation and Special Projects	<ul style="list-style-type: none"> ◆ Fewer expensive special projects required ◆ Concentrate on fewer students for shorter duration
Early Identification and Correction of Learning Problems	<ul style="list-style-type: none"> ◆ Special education programs reduced in later years ◆ Programs accurately “targeted” to most needy students ◆ More effective use of inclusion ◆ Note possibility of increased costs in K and 1
Teacher Morale	<ul style="list-style-type: none"> ◆ Increased attendance; reduced substitute costs ◆ Reduced “burn out” ◆ Incentive value of small classes
Creative Space Use (Space is a challenging issue)	<ul style="list-style-type: none"> ◆ Transportation-related costs ◆ Flexibility and “found” space ◆ Partnerships with business ◆ Remodel, re-open sites ◆ Portable units as last option
Community, Parent Involvement, Volunteers	<ul style="list-style-type: none"> ◆ Small classes attract parents and volunteers ◆ Field trips (etc.) are less congested ◆ Teachers get to know parents well
Teacher Assistants	<ul style="list-style-type: none"> ◆ Research suggests reducing the number of assistants and assigning those remaining to non-class (support) work ◆ Remove “general” assistants through attrition

Findings from STAR longitudinal analyses (e.g., Finn et al., 2001) and from other research (e.g., Newmann et al., 2001) have also confirmed that *intensity* is important. Students in small classes benefit from coherent, stable, planned instruction with a competent teacher. Instructional time is not interrupted by confusing fragmentation caused by student comings and goings for endless “projects” (Achilles & Finn, 2002a, b; Achilles et al., 1995). These foundational findings (early intervention, duration, and intensity) provide a framework for small classes as a cornerstone for education improvement.

Sharp (2002) found that in elementary grades in United States schools (and in the schools of one Canadian Province) the difference between actual class size (counting students in a teacher’s classroom) and PTR (the number of students at a site *divided* by some combination of educators and/or adults serving those students) was approximately 10 students in 1997 and nine students by 2001, after federal class size legislation. The difference between class size and PTR was larger in urban districts, confirming Boozer and Rouse’s (1995) finding that minority and low-achieving students were more likely than other students to be in schools with favorable PTRs but large classes, a condition occasioned by many “projects.”

Achilles and Sharp (1998) and Sharp (2002) demonstrated that knowing and analyzing the differences between actual class size and PTR is key to class size reduction success. For example, if an elementary building (grades K–5) has a PTR of 15:1, but the *average class size* in a regular teacher’s room is 27 students, there may be personnel flexibility to achieve class sizes of 14–18 in grades K–1 for the first year of class size reduction with minimum—or no—extra costs above available funding *if the process followed the class size research findings* (Sharp, 2002). As the benefits of class size reduction become evident, additional options for personnel reallocations occur.

Class size reduction planning may include analyzing costs, estimating benefits and savings, identifying funding options (e.g., grants, federal sources, local sources, resource reallocation, and corporate giving), and finding space solutions. Typically, schools and districts rely on some combination of local, state, and federal funds to pay for class size reduction. Categorical program dollars—special education, Title I, programs for students with limited-English proficiency, etc.—comprise the bulk of funds typically reallocated (Odden and Archibald, 2001). Sheldon Etheridge, Director of Federal Programs for Berkeley County (South Carolina)

Schools, notes several possible funding strategies:

- ◆ Making use of special state class size funds to reduce class sizes to 18:1 in all schools and using Title I funds to further reduce classes at Title I schools to 15:1;
- ◆ Using Title I Targeted Assistance funds from the school level for class size reduction;
- ◆ Using Title II and Title V to support class size reduction;
- ◆ Allocating Federal Title III funds for class size reduction in Limited English Proficiency-specific classes;
- ◆ Reallocating staff resources to employ teachers rather than assistants;
- ◆ Designating lottery funds for class size reduction;
- ◆ Acquiring class size reduction funding from grants; and
- ◆ Using IDEA funds in a staff inclusion model for self-contained class size reduction settings (2003).

The approximate difference of 10 students between class size and PTR in the United States may explain Darling-Hammond's (1998) international comparisons of staff allocations in schools. Darling-Hammond (p. 11) noted that in the U.S. in 1995, about 45% of certified educators were actually full-time teachers of classes of students on a day-to-day basis. The remaining 55% were project and "special" teachers, media, counselors, administrators, and supervisors. This U.S. percentage of staff allocations to full-time teaching was the lowest shown in the eight comparisons: Belgium with 80% of teachers in full-time roles was highest.

Bracey (1999) noted that "while pupil-teacher ratio has been declining so has the proportion of school staff who are teachers: In 1950 over 70 percent of all staff members were teachers." The change in the percentage of teachers in classes reflects continuing reliance on projects and "pull-outs." Title I contributes heavily to this despite repeated findings of Title I's general ineffectiveness (e.g., Abt, 1997; Borman & D'Agostino, 1996; Wong & Meyer, 1998).

Because personnel salaries are the highest annual cost in education, and given the PTR and class size differences in America's elementary schools (Achilles and Sharp, 1998; Sharp, 2002), proclamations of the high costs of small classes, especially in K-3, are greatly exaggerated if those in charge of small-class implementations would reallocate teachers from some non-classroom duties to full-time, in-class teaching. This

approach requires careful analysis because some “special” teachers are required in legislation, such as for special education.

Findings from STAR and other studies (e.g., Word, et al, 1990; Gerber, et al., 2001) also call into question the widespread use of teacher assistants beyond those required by legislation (the STAR study found that teacher assistants in classrooms had no consistent positive effect on student achievement). A RAND study (Grissmer, et al., 2000) concluded, “This estimate is nearly five times more expensive than class size reductions, so it is doubtful any set of changed assumptions could make assistants nearly as effective as class size reductions” (p. 254). Other researchers (e.g., Egelson et al., 2002) have reached similar conclusions. Analyses of class size reduction outcomes such as in Burke County, North Carolina, have shown that redirecting funds saved by phasing out some teacher assistants and using the money for class size reduction provide substantial student benefits.

Although costs for added personnel are the usual focus in class size discussions, Witte (1999, p. 9) reported that the California class size reduction study (1999) “found that space problems were listed as the number one problem by principals...” Schools sometimes have extra space, but usually superintendents and principals must be creative in meeting the need for more classroom space.

Burke County (N.C.) Schools, for example, solved this problem in several ways. The district took advantage of a system-wide grade configuration change just prior to the implementation of the class size reduction program that made previous sixth-grade classrooms in elementary schools available for primary classroom space. Mobile units were also added in elementary schools where space was limited. Because parents support the reduced class size program, using mobile units for additional classroom space has not been an issue. In some cases, Burke County also remodeled and reopened older schools that previously had been closed (Egelson et al., 2002).

When Wisconsin’s Kenosha Public School District implemented a class size reduction program, some schools converted their art, music, or multipurpose rooms to regular classrooms (Odden & Archibald, 2001). Other space solutions might include multiple-use possibilities or remote in-neighborhood sites connected by technology to the school of record and “found” space, such as the Downtown School in Winston-Salem, N.C.

Applied in accordance with the research, and assuming that a) a favorable pupil-teacher ratio such as 14:1 or so exists in the building, and b) space is not a major factor in the implementation, then small classes can be achieved with little or no extra expenditures and no annual upgrading costs by re-assigning teachers already available. As Brewer et al. (1999) and Witte (1999) noted, *how small classes are implemented will greatly influence class size costs.*

Table 2 identifies some cost issues that need analysis before class size implementation.

Table 2. Examples of Cost Ideas About Small-Class Implementation and Sources for the Information.

COSTS	SAMPLE SOURCES
A. Expensive	
MACRO-Level Information	Brewer et al. (1999), Witte (1999)
Economic “Models” with “Business as Usual”	Hanushek (1998, 1999)
PTR vs. Class Size	Picus (2001); Harris and Plank (2001)
Theoretic	California CSR Consortium
B. Little or No Added Costs	
MICRO-Level Information	Achilles and Sharp (1998); Sharp (2002)
Experience in Schools	Chandler (2002); Etheridge (2002)
Measured “Trade-Offs”	Krueger (1997, 1998, 2000)
Class Size and PTR Differences	Krueger and Whitmore (2002)
Little or No Added Costs (Actual Examples)	Burke Co. and Draper school in N.C. (In Egelson et al., 1996, 2002); Achilles & Finn (2000, 2002a, 2002b); Achilles & Price (1999)

(table continued next page)

COSTS

SAMPLE SOURCES

C. Implementation Strategies, State Level

Prime Time (Indiana) 1983	Demonstration Project. Did not initially include K.
STAR (Tennessee) 1984–1990, with follow-up 2004	Statewide longitudinal experiment involving 11,601 students.
Texas, 1985–2003, little added costs	H.B. 72 (1984). Small classes in grades K–3, adding grades 4–5 later. Short and long-term outcomes.
SAGE (Wisconsin) 1996–present	Followed the STAR outcomes and added curricular and other steps.
California, 1996–2003, expensive, not planned	CSR began in grades 1–3, with K added later—weak positive outcomes initially, poor implementation. (Biddle & Berliner, 2002).
North Carolina, 2001–present, statewide	Legislation. Fair implementation.

Chapter II— Examples of Class Size Reduction Funding

Are smaller classes expensive? Do they require large numbers of new teachers (a major source of cost increases)? The answer: “It depends.”

Single-site studies of class size implementations have shown that small classes (15–18 students) in early grades can be achieved at little or no extra cost by staffing reallocations and changes in school organization. In every case, student outcomes improved; school and class size support grew—as shown by such things as increases in enrollment and parent/volunteer involvement.

One way to consider issues and costs of small classes in early schooling is to understand how successful districts and schools implement small classes. This section provides real-life examples from several states of small classes achieved at minimum or no extra cost.

Funding a district-wide CSR program since 1990

Beginning in 1990, a North Carolina district (n=15,000 pupils) achieved class sizes of about 14–16 students incrementally, K–4, by careful planning, reductions in remediation projects as small-class outcomes allowed, by extending inclusion, and by reallocating funds through attrition of teacher assistants. After initial cost outlays for renovation, the small classes operate each year within normal state per-pupil expenditures. Achievement in this previously low-achieving district ranks among the highest in the state. The K–4 benefits extend into upper grades as shown by rising test outcomes and declining dropouts as cohorts of students who began school in small classes go through high school (Burke County, North Carolina. Test Results, 2002–2004; Egelson et al., 2002; Achilles, Harman & Egelson, 1995).

Feasibility planning for a district-wide CSR program

Within a large national study, Sharp (2002) analyzed one suburban Michigan district's resources to determine if the district could implement small classes in K-3 in all four elementary schools after receiving state class size reduction funds to achieve small classes in two high-need schools. Results affirmed that with planning, assessment of current and desired program outcomes, and reallocating resources, classes of about 15 students in all K-3 settings were attainable. Reallocations took into account the outcomes of small classes as determined by the class size research.

The importance of creative leadership

In a case study, Odden and Archibald (2001) demonstrated that small classes could be funded by analyses of current resources, potentials for added revenues, planning, and reallocation based on actual and projected conditions. They found that a "medium-sized school district in Wisconsin was able to reallocate resources to reduce class sizes in K-5 *without spending more money or increasing its tax rate*" (Abstract. Emphasis added). Key to the district's success were the leaders who had "full knowledge of the district budget and how that budget was derived" (p. 9) and who used that knowledge creatively.

Funding CSR through a combination of local, state, and federal funds

Berkeley County, South Carolina, originally obtained first-grade small classes (14-16 pupils) in 1998-1999 by combining federal, state and local resources. The first year of implementation required a collaboration of funding from Title I, a state class size reduction program, and funds from a state compensatory program. In addition to 93 staff funded from local resources for a 21:1 class size allocation, 41 teachers employed through special state funds reduced class size to a maximum of 18 students each in all 147 first-grade classrooms. Federal funds were used to employ an additional 13 teachers and further reduce first-grade class sizes in all Title I schools to a maximum of 15 students. At the conclusion of the 1998-1999 school year, class sizes in all first-grade classrooms (147) averaged 14.4 students with only two classes exceeding an enrollment of 15 students (Etheridge, 2002).

Funding CSR through personnel reallocations

A small district in Michigan achieved class sizes in K-4 of 15 or fewer pupils within the regular budget by re-assignment of personnel, job consolidations, reduction of teacher assistants via attrition, and reducing projects based on small-class benefits. The district funded the effort by using 100% of its At-Risk and Title I dollars and eliminating teacher assistants and a transitional first-grade program. Achievement, teacher morale, and community support increased (Chandler, 2/02. Personal communication).

A prior SERVE publication featured North Carolina's Draper Elementary School class size reduction program (Egelson, et al., pp. 23-27). In the multiple-year effort, "Draper's principal used considerable ingenuity... to reduce class sizes without additional expenses" (p. 23). Personnel reallocations adjusted to instructional and educational needs of students and teachers primarily accomplished this class size reduction. The principal converted one and a half Title I positions, one Spanish teacher position, and portions of the physical education and music positions into regular classroom teacher positions. To ensure that the students still had physical education and music classes weekly, some classes were doubled up for those sessions. Monitoring showed that from pre-class size reduction, Draper outcomes improved over the years, so "students are able to meet state standards by the time they begin middle school" (p. 27).

Finally, a medium-sized suburban school system (6,000 students) in Rochester, New York, began planning in 2002 for small classes (approximately 15 students) in grades K-4. The school board approved the plan that was built on reallocation of personnel and other resources, starting with grades K-1 in 2003, and adding grades 2, 3, and 4 in succeeding years. By February 2005, the district was ahead of schedule in implementing the plan, with very positive community and professional staff response and initial indicators of positive student outcomes. The district is employing a cohort model, with selected looping options, and the plan is being implemented with no added costs (Graham, J. K., 2005).

Examples in the second and third items above received initial assistance from state-level grants (a class size pilot study grant in Michigan and the SAGE initiative in Wisconsin) for some schools in the systems. The fourth and fifth examples used Title I funds to start. Parent requests encouraged administrators to seek ways to extend class sizes of about

16 students, K-3, to all schools rather than just schools that received federal or state funds. Although state and federal funds can serve as incentives to initiate class size reduction, continuation relies on leadership, reallocations, planning, and flexibility provided by successful class size reduction outcomes.

Chapter III—Benefits of Class Size Reduction

One criterion for change in social programs is that benefits should outweigh costs and remain after the “treatment” ends. The Appendix includes Crane’s (1998) criteria for assessing benefits of social programs with STAR facts presented for each criterion. Because class size reduction results last and increase if the student has at least three—and preferably four—years of continuous schooling in the small-class setting (K–3), short- and long-term actual costs of small classes require a longitudinal analysis that has not yet been done. Although not a cost-benefit analysis, the present material, organized by benefit heading, summarizes some efforts of economists and others who have made cost-benefit estimates linked to class size. Each study uses models that have assumptions and numerous caveats connected with them.

Broad economic benefits

Krueger’s (2002) analysis of STAR’s class size experiment “suggest[s] that the internal real rate of return from a seven-student reduction [from 22 students to 15 students] in class size in the first four years of primary school is about 6%. At a 4% discount rate, every dollar invested in small classes yields about \$2 in benefits” (p. 34).

After a detailed analysis of schools in the Stockholm area of Sweden and drawing on the STAR longitudinal data for comparisons, Krueger and Lindahl (2002), stated:

Lastly we calculated the costs and benefits of a class size reduction for the U.S., using the results from STAR, and for Sweden, using the results from the Stockholm pupil data. We found that decreasing class sizes can, with reasonable assumptions, indeed, have benefits that are larger than the costs. (pp. 96–97)

Early identification of learning disabilities

A major potential savings is the early identification of learning problems that usually occurs in small classes. In a small class with no teacher

assistant, a teacher is more likely to refer for special education testing a difficult-to-teach student. If a problem is identified, early intervention in the small-class setting has the potential to reduce the number of students assigned to special classes later, providing cost-savings and requiring fewer special education teachers later. Teachers in reduced size classes also report having better opportunities to implement special needs students' individualized learning plans (Achilles, 1999).

Improved high school graduation rates

Using a sample of nearly 5,000 students from STAR, Finn, Gerber, and Boyd-Zaharias (2004, p. 4) calculated graduation rates for students by low and high socio-economic status (SES) using free and reduced-price lunch as the SES proxy. Graduation rates for lower SES students improved from 70.2% (no small classes) to 88.2% if students had small classes in grades K-3; graduation rates for higher SES students improved, but less dramatically (83.7% to 87%). Higher graduation rates have implications for incarceration rates and future earnings.

Increased college entrance test-taking rates

Using the STAR database, Krueger and Whitmore (2000) noted that being in a small class in grades K-3 influenced whether or not a student took a college-entrance examination. There was a slight overall, but not significant, difference favoring all small-class students, but the positive difference in test-taking rates for African-American students who had been in a small class in K-3 was statistically significant ($p \leq .001$), reducing the gap between the rates of African-American and white students in taking the ACT or SAT college-entrance tests by 54%. If taking college-entrance exams equates with the person's actually attending college, then the large gains for minority students can have economic benefit from earnings and reduced need for social services.

Improved student behavior

Student behavior in school influences costs for discipline referrals and consequences such as detentions, removal from classes, and suspensions. Measures of student behavior provide inferences of cost savings. *Success Starts Small* (Achilles, et al., 1995) showed a 50% reduction in discipline referrals after class size reduction. Small classes in early grades influence student short-term and long-term school behavior positively,

increasing both academic and social engagement (Finn, et al., 2003). Using STAR students (n = 2,728) who had participation data in grades 4 and/or 8, Pannozzo, Finn, and Boyd-Zaharias (2004) demonstrated that students in small classes had more positive indicators of participation and engagement, such as lower dropout and higher graduation rates than did students in larger classes.

Closing the racial achievement gap

While class size reduction is beneficial to all students, low-income and African-American students tend to benefit more than white students (Achilles, Finn, Gerber, & Pannozzo, 2000). STAR results showed that average test scores for African-American students rose by 7-10 percentile points while they were in small classes, compared to an increase of 3-4 percentile points for white students. Gains decreased somewhat upon return to regular size classes in fourth grade, but the gap closure persisted. Krueger and Whitmore (2001) estimated that “if all students were in a small class in grades K-3 for one to four years...the black-white test-score gap would fall by 38 percent in grades K-3, and by 15 percent thereafter” (Executive Summary).

No recurring annual costs

Once small classes are established, there are minimal extra costs for succeeding years, but other interventions, like some comprehensive whole school reforms, have extra costs each year (e.g., hardware/software and staff training).

Achilles and Price (1999) listed probable cost savings from appropriate implementation of small classes where “appropriate” meant following the class size research and phasing in small classes, one grade at a time, K-4. Table 1 (page 7), based on successful experiences with small classes to date, summarizes probable school and district savings when class size reduction is done thoughtfully.

Inferences drawn from positive cognitive outcomes for small class interventions and especially for long-term behavioral outcomes such as graduation rates, college-entrance test taking, grade retention, and dropout all support that for early grades (K-3), small classes provide substantial student benefits and economic returns.

Conclusion

Small classes have many positive benefits and powerful research and theory bases for being successful. This monograph should help policymakers and practitioners to judge and use class size research to improve schools for students and to consider appropriate class sizes in the early years of schooling as a cornerstone of sound education policy.

Small classes may be construed as more costly than larger classes if small classes mean: a) simply adding teachers and doing business as usual, b) no small-class benefits are subtracted from costs, and c) small class initiatives do not follow the research, such as starting in the earliest grades. But class size reduction can often be accomplished at little to no extra cost if the administrators know and correctly use the research and are committed and creative in their funding efforts.

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- ◆ Wisconsin's Project SAGE—www.uwm.edu/Dept/CERAI/sage.html and www.educationanalysis.org
- ◆ Minnesota—www.mpls.k12.mn.us/Benefits_of_Reduced_Class_Size.html

E-mail (Personal Communication)

- ◆ J. Chandler, 2/02, 7/02

Advocacy Group

- ◆ Class Size Matters, a clearinghouse for information on class size data. www.classsizematters.org

Policy Briefs

- ◆ "Class Size: Counting Students Can Count." *Research Points*. American Educational Research Association. www.aera.net/uploadedFiles/Journals_and_Publications/Research_Points/RP_Fall03.pdf
- ◆ "Class Size Reduction: Lessons Learned from Experience." WestEd *Policy Brief*. www.wested.org/policy/pubs/full_text/pb_ft_csr23.htm

Notes

1. C. M. Achilles was one of four principal investigators (PIs) of the Student Teacher Achievement Ratio (STAR) experiment in Tennessee and PI of other class size studies. He has consulted on class size matters since 1983. He was a PI of several staff development studies, Project SHAL (An Effective Schools initiative in St. Louis), a researcher on the Phi Delta Kappa Commission on Confidence in Public Schools, etc. He is author or co-author of numerous books, chapters, monographs, articles, research reports and ERIC entries. Some material here has been adapted, paraphrased, or used verbatim from earlier papers, such as Achilles and Finn (2000, 2002a; 2002b).
2. These points have been made in other papers and articles. Material here is modified only slightly from Achilles & Finn (2002). The role of school and district leadership in reform: A case of validity as mistaken identity. Paper at AERA, New Orleans, LA 4/2/02. pp. 4-7.

Appendix

Critique of STAR Results Using Crane's (1998) Criteria. STAR is a Class Size Reduction (CSR) Experiment, Not a Pupil-Teacher Ratio (PTR) Effort.*

Crane Criteria and Questions	STAR's Facts
1. Do the benefits outweigh the costs? <i>Yes</i>	In the short term (K-3), there were no definitive data. In the "follow-up studies," yes; in the STAR reanalysis, yes; in alternative implementations, yes. See (Krueger, 1999; Finn & Achilles, 1999; Finn et al., 2001).
2. Does the program have a statistically significant effect on the treatment group? <i>Yes</i>	Yes. This statistically significant difference was found each year, all years, and in many combinations of analyses done by STAR persons and by others (as far away as London).
3. What is the magnitude of the program's effect? <i>Shown in effect size or ES</i>	Effect-size (ES) results were .17-.40 in the early analyses. Effects were about twice as high for minority children as for Anglo children, grades K-3 (each year, all years). Grade-equivalent analyses show continuing growth even after students leave small classes (see #4). (Finn & Achilles, 1999; Finn et al., 2001).
4. How long do the effects of the program last? <i>At least into high school and beyond</i>	Positive academic and social effects of K-3 small classes are highly visible in H.S. and beyond including in college-entrance tests. (Boyd-Zaharias & Pate-Bain, 2000; Krueger, 1999; Krueger & Whitmore, 2000).
5. What is the relationship of the evaluator to the program? <i>Independent</i>	The STAR evaluator was a contracted independent expert. STAR personnel did secondary analyses. The external expert's work is (and was) the primary analysis accepted and published. Others have re-analyzed STAR data with similar results.
6. Can the program and its results be replicated? <i>Yes</i>	They have been consistently replicated in well-designed class size analyses. Replications of STAR have been achieved in single districts, and in general policy implementations. Reported gains and ES for well-conducted studies are similar. Evaluations of statewide small-class efforts in CA and the results in Texas (HB 72, 1984) suggest large-scale benefits, but these results are less definitive than STAR or SAGE in Wisconsin, probably because of less controlled implementations.
7. Can the program maintain its effectiveness on a larger scale? <i>Still being assessed—but yes, if well implemented</i>	

* *Social Programs That Work* (1998) edited by J. Crane. Russell Sage Foundation. 324 pages.

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