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Efforts to reduce class size, particularly in the primary grades, have been at the forefront of discussions about education for over two decades. In recent years talk has turned to action as at least 21 states and the federal government have initiated class-size-reduction (CSR) initiatives. For the 2000-2001 school year, the federal government has allocated \$1.3 billion to CSR in grades K-3, up from \$1.2 billion the previous year. States are contributing even more money; the annual cost of California's CSR initiative alone is now over \$1.5 billion.

Thousands of schools across the country suddenly have smaller classes, and now school boards and administrators face a new challenge: making sure the enormous investment in CSR pays off in higher student achievement. Should school officials rest content in the hope that achievement gains will be an automatic byproduct of smaller classes? Or should they proactively initiate strategies to capitalize on CSR?

This Digest explores several topics that are prominent in school districts' efforts to derive the greatest benefit from smaller classes.

WHAT TEACHING STRATEGIES ARE MOST EFFECTIVE IN SMALL CLASSES

Research does not yet give a clear answer to this question. As a consortium of researchers that is evaluating the progress of CSR in California points out, "This issue is largely unexplored, and the designers of professional development programs are largely without guidance. Not surprisingly, districts seem unaware of how they might better support teachers in small classes in terms of practice" (Bohrnstedt and Stecher 1999). Research consistently has found that teachers do not significantly change their teaching practices when they move from larger to smaller classes. This is the case in California, where researchers found that teachers' content coverage, grouping practices, and pedagogical strategies did not substantially change under CSR. The teachers in smaller classes did spend a little less time disciplining students and somewhat more time with poor readers (Bohrnstedt and Stecher).

Achilles (1999) contends that, because classroom management is easier with fewer students, teachers do not need to change their instructional practices to achieve the benefit from CSR. That benefit comes automatically, he reasons, because teachers have more time to use strategies that are effective in any setting, such as instruction guided by a preplanned curriculum, clear and focused instruction, close monitoring of learning progress, repetition until children understand the content, positive personal interactions, and appropriate use of instructional groups.

Tennessee's Student Teacher Achievement Ratio (STAR) project teachers reported that smaller classes increased their ability to monitor student behavior and learning, give more immediate and more individualized reteaching, offer more enrichment, achieve a better match between their instruction and each child's ability, gain more detailed knowledge of each child's needs as a learner, and use a variety of instructional approaches to meet learners' needs (Bain and Achilles 1986). Other teachers have cited the use of "participation in establishing classroom rules, learning centers, field trips, and peer tutors" as further tools that promote success in the smaller classroom (Achilles 1999).

Finally, Ornstein (1995) points to Benjamin Bloom's 1984 synthesis of research on teaching and instruction as an enduring guide to effective classroom practices. According to Bloom, the five variables having the greatest effect on student achievement are tutorial instruction (1:1 ratio), instructional reinforcement, feedback and correction, cues and explanations, and student class participation. Other effective variables are improved reading and studying skills, cooperative learning, graded homework, classroom morale, and initial cognitive prerequisites.

WHY IS PROFESSIONAL DEVELOPMENT ESSENTIAL?

High-quality instruction is crucial to the success of CSR; without an adequate supply of trained, competent instructors to fill the new classrooms, CSR may actually do a disservice to students. An evaluation of CSR in California found that the number of teachers without full credentials—meaning that they were hired with emergency permits, waivers, or internship credentials—rose from 1 percent to over 12 percent statewide (Bohrnstedt and Stecher 1999).

Another recent study (Shields and others 1999) found that more than 1 million of California's 5.7 million students are enrolled in schools staffed by such a large percentage of underqualified teachers that the schools are effectively "dysfunctional." These numbers illustrate how serious the issue of underqualified teachers can become. School districts can combat this "dysfunction" by offering professional development for all teachers.

Teacher training in *Success Starts Small*, an observational study of teaching behaviors in small classes during 1993-94, offers an example of successful professional development. During the first year of CSR in Tennessee, teachers spent twenty hours studying strategies to promote active learning in first-grade students. The seminars included "thematic planning, language approaches, seminar discussions, using blocks, manipulatives, and computer-assisted learning." After the seminars ended, teachers visited small classes in another district and participated in weekly, grade-level collaboration (Achilles and others 1995).

Joan McRobbie (1996) emphasizes that staff development should be "on-going, school-based and geared to create a professional community where teachers find out together what works for their particular students." This approach to teacher training allows teachers and administrators optimum flexibility. Along with teamwork, many studies have pointed to mentoring as a tool for education of novice teachers.

WHERE CAN SCHOOLS FIND THE FACILITIES FOR NEW CLASSROOMS?

CSR, on top of growing enrollments in many areas, has created a nationwide need for new classrooms. The most common source of extra classroom space is portables. Portables generally house one fully functional classroom and are able to fit on extra school property like field areas, playgrounds, and parking lots. The approximate cost of a portable is between \$28,000 and \$54,000.

Some school districts have chosen to reconfigure present facilities, sometimes sacrificing other programs. Schools have remodeled libraries, art classrooms, science labs, gyms, computer labs, music rooms, and faculty lounges into classrooms.

Upon exhausting all onsite resources, Oakland schools sought facility donations from churches and other nonprofit organizations (McRobbie 1996). Some districts have chosen to reopen closed schools and enter into joint-use agreements with local public entities. These agreements allow schools to share the use of libraries, parks, auditoriums, and recreation facilities with the public (Joint Legislative Audit Committee 1999).

When it is not possible to add classroom space (or even hire new teachers), schools may try to obtain the benefits of small class size by creating smaller instructional groups through team teaching or creative scheduling. The goal is to assign a qualified teacher to a smaller group of students for at least part of a day, focusing on high-priority topics such as reading and math.

HOW CAN SMALL SCHOOLS BEST USE THE CSR FUNDS THEY RECEIVE?

State and federal CSR funds allow many school districts to hire new teachers and build new classrooms, but when the money is allocated in proportion to student population (the allocations are based 80 percent on poverty, 20 percent on enrollment), smaller districts do not have these options. Consider the 90-student Arthur County, Nebraska, school district, which receives \$1,417 for its federal allotment-not enough to hire even a half-time teacher (Arfstrom 2000). What can small schools like this do to make the most of the funds they will receive?

Starting in school year 200-2001, districts can use 25 percent of federal CSR funds for

professional development, up from 15 percent the first year. Waivers are available for other uses of funds also. Under Department of Education guidelines for the next school year, options include helping teachers learn new skills to take advantage of smaller class size; reducing the size of kindergarten classes; providing extra pay for veteran teachers who serve as mentors to newly recruited teachers; combining the funds with Title I schoolwide programs; and preparing teachers to work with diverse student populations, including students with disabilities and limited English proficiency. Small districts that do not receive sufficient funds to hire a teacher may use all their funds to support professional development.

To gain some of the small-class benefit, smaller schools could implement a parallel block schedule. In this system, one-half of the class arrives at school one hour before the other students, and the half that arrives on time stays an hour after the "early-birds" are dismissed. With this system, the district can reduce class size for one hour every day, without the need to hire another teacher (Egelson and others 1996).

WHAT SHOULD BE THE FOCUS OF DISTRICT-LEVEL CLASS-SIZE POLICY?

Gaining the benefit from smaller classes begins with a districtwide policy that establishes concrete goals (such as a maximum of 18 students in K-3 classes) and sets clear priorities on use of funds. Consider the following points when creating a policy:

- * Target money and other resources to minority and low-income students who stand the most to gain from CSR. Districts can target their federal CSR funds to the neediest schools.

- * Make better teaching and learning the cornerstone of CSR. "No organizational arrangement, including small class size, can compensate for poor teaching" (McRobbie, Finn, and Harman 1998). Use some funding for training inexperienced teachers.

- * Assess facility needs and plan for reconfiguration of existing physical plants or for new construction. Decide whether CSR is worth displacement of other programs or activities.

- * Apply for waivers to leverage federal and state funds in pursuit of district priorities. Set aside funds for activities such as community meetings, teacher training, and curriculum planning.

- * Continually evaluate the results of CSR. Monitor not just changes in pupil-teacher ratios but teachers' classroom practices, the unforeseen displacement of other programs, and unexpected costs.

As well as weighing the costs and benefits of CSR implementation, policymakers should have a list of "decision rules" allowing them to weigh the advantages and disadvantages

of expanding and modifying CSR policy. Among these issues should be the pace of implementation, the teacher supply and demand, and the targeting of resources for the students most in need (Bohrnstedt and Stecher). A flexible CSR policy allows the most beneficial transition to smaller classes.

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