Reducing Class Size Leads to Individualized Instruction
by John A. Zahorik

Wisconsin researchers have found that class-size reduction in a variety of formats increases attention to individual students. Teachers of smaller classes, however, are individualizing instruction-not content.

In California, Texas, Wisconsin, and other states, reducing class size is being used as a way to increase student achievement in the primary grades. The approach makes sense intuitively, and research supports it. Although Slavin (1989), Hanushek (1996), and others claim that any benefits of reduced class size are minimal and that other ways to increase achievement may be more effective and less costly, the Student/Teacher Achievement Ratio (STAR) project in Tennessee in the 1980s offered convincing evidence of the positive effects of reduced class size (Word et al., 1994).

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Class size, of course, cannot influence academic achievement directly. It must first influence what teachers and students do in the classroom before it can possibly affect student learning. A reasonable expectation of teaching in a small-size class is that students receive more individual attention, and this is one of the main findings from research by Cahen, Filby, McCutchen, and Kyle (1983), Robinson and Wittebols (1986), and Johnston and Davis (1989). How individualization comes about in small-size classes and the type of individualization that is used are topics being investigated in the Student Achievement Guarantee in Education (SAGE) program (Maier, Molnar, Smith, & Zahonk, 1997; Molnar, Smith, & Zahonk, 1998).

SAGE
SAGE is a five-year program featuring class-size reduction that is being implemented in 80 Wisconsin schools. The program, initiated in 1996 by the Wisconsin Department of Public Instruction, provides resources for schools that enroll children from poor ratio families to reduce class size to a 15:1 student-teacher classroom in kindergarten through 3rd grade.

Because of individual school requirements, the 15:1 student-teacher ratio occurs in four formats: 15:1 Regular (one teacher and 15 students); 15:1 Shared Space (one teacher and 15 students sharing a room with another teacher and 15 students); 30:2 Team Taught (two teachers team teaching 30 students); and 30:2 Floating Teacher (one teacher and 30 students except during reading, language
arts, and mathematics, when another teacher joins the class to reduce the ratio to 15:1).

We are conducting a longitudinal study of the effects of reduced class size on achievement and classroom events in 30 SAGE schools. Achievement results, based on pre- and post-tests using the Comprehensive Testing Basic Skills, Terra Nova, Complete Battery, show that SAGE students in grades 1 and 2 consistently outperform students in 14 comparison schools, but we have found no differences among the types of SAGE classrooms.

To determine the effects of reduced class size on classroom events, our research team collected data through teacher logs, teacher questionnaires, teacher interviews, and classroom observations for the past three years. These data have resulted in a model of teaching in small classes that illustrates the importance of individualization.

**The Emergence of Individualization in Small-Size Classes**

Small class size has three main effects that lead to increased individualization: fewer discipline problems and more instruction, more knowledge of students, and more teacher enthusiasm for teaching. In small-size classes, there is less misbehavior. When misbehavior does occur, it is more noticeable, and teachers can treat it immediately before it becomes a major problem. This reduced, if not totally eliminated, time spent on discipline leads to more time available for instruction.

More knowledge of individual students is an important result of smaller class size. Teachers come to know students personally, and they have a much greater understanding of each student's place in the learning cycle. A caring, family-like atmosphere develops in the classroom.

When classes are small, teachers experience less stress from disciplining, correcting papers, and not having time to do what needs to be done. As stress is reduced, enthusiasm and satisfaction increase, and educators begin to implement teaching procedures that they know will benefit students.

The main result of more instructional time, knowledge of students, and teacher enthusiasm is individualization.

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Often the individualization is one-to-one tutoring, but it also occurs in other ways. Teachers individualize when they form and instruct small groups on the basis of perceived need. And teachers individualize during whole-class instruction when they provide numerous opportunities for each student to express his or her understanding.
The product of this emphasis on individualization is greater coverage of content and, to some extent, greater in-depth treatment of content. Many teachers completed the grade-level curriculum well before the end of the year. The outcome of this broader, and possibly deeper, content coverage is greater student achievement.

Although individualization is the main product of teaching in small-size classes, some increase in the use of hands-on activities, such as manipulative activities, interest centers, and cooperative groups, occurs because of less student misbehavior and greater teacher enthusiasm. These activities, then, also contribute to increased student achievement.

**The Nature of Individualization in Small-Size Classes**

The individualization that occurs in small-size classes is more procedural than substantive. Teachers generally do not alter the curriculum for individual students; they expect each student to acquire the same content. Even when students complete the grade-level content before the end of the year, as is the case in many small-size classrooms, the additional content that teachers provide is the established content for the next grade. It is not enrichment content tailored to students' interests.

What teachers do alter for individual students is instruction. Teachers identify the learning problems of individual students; they provide help to individual students that includes explanations, analogies, examples, demonstrations, and tasks; and they constantly check on the progress of individual students. As one teacher said,

If a child is having problems, you can see it right away. You can take care of it then. You don't have to wait until they turn in their papers. . . . You can get around to each child. . . . I can take care of it [a problem] right then before they practice it wrong. It works a lot better for the children.

With the exception of the slight increase in the use of hands-on activities found in small-size classes, the dominant mode of teaching remains direct instruction. Teachers continue to structure, manage, and pace all activities. The teacher gives information, asks questions, praises correct responses, and controls interactions with students in other ways. The students are largely passive in that their role is to listen and to follow the teacher's directions. It usually is not to engage in problem solving, creating, and decision making. In summary, small-size classes are

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clearly moving toward more individualization of instruction. The individualization that occurs, however, involves methods that the teachers have always used. They simply repackage methods for use with individual students.
As teachers change from teaching normal-size classes to teaching small-size classes, what happens may not be too different from what happens to chefs as they change from cooking in a restaurant to cooking for their families. In the restaurant, the chef prepares many menu meals. Each meal generally does not differ in elements, portions, or presentation. One plate of chicken and pasta, for example, is identical to every other, and the chef serves it night after night. At home, the chef can pay more attention to the needs of family members. Although the chef does not prepare a different meal for each family member, he or she varies the menu by not putting broccoli on Alice's plate, reducing the amount of salt for Grandma, and giving Joe two pieces of fish. The actual food preparation in the two settings is probably very similar, however, like teachers shifting from large to small class sizes, the chef alters his or her behavior as he or she moves from the restaurant to the home. But planning for chefs—and for teachers—does not alter significantly.

**Continuing Research on Individualization**
The present understanding of individualization in small-size classes will undoubtedly be clarified as the SAGE project evaluation continues. One focus of future research is differences in the four types of SAGE classrooms. Our research has revealed few differences to date. If differences are not found in the future, results would suggest that obtaining additional classrooms for districts embarking on small-class-size programs may not be an issue, because sharing classrooms does not harm achievement.

Another focus is the question of when teachers begin to individualize. At present, they appear to individualize as soon as the school year begins. If individualization starts instantly—if small class size permits teachers to do what they have always wanted to do and know how to do—staff development may not be needed in small-class-size programs.

Still another focus is who receives the individualization in classes. Do all students receive equal attention from the teacher? Our tentative findings indicate that both able students and problem learners receive comparable amounts of individual attention, as do typical students. If all students receive individualization, the need for future remedial and gifted programs may be reduced because of small-size classes.

As an answer to the problem of poor achievement, small class size has much promise. Understanding its process and outcomes can provide guidance to states and districts as they consider whether to reduce class size in their schools.

**References**


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