Research on Cooperative Learning: Consensus and Controversy

Researchers agree that cooperative learning can produce positive effects on achievement but disagree on the conditions under which the approach is effective.

Cooperative learning is one of the most thoroughly researched of all instructional methods. In a recent review (Slavin 1989a), I identified 60 studies that contrasted the achievement outcomes of cooperative learning and traditional methods in elementary and secondary schools. To be included in my review, studies had to have lasted at least four weeks, and experimental and control classes had to take the same achievement tests under the same conditions. Using different inclusion criteria, Johnson and colleagues (1981) identified 122 achievement studies. Most of these studies also measured many outcomes in addition to achievement.

With so many studies, one would imagine that a consensus would emerge about the nature and size of the effects of cooperative learning; and, in fact, the areas of agreement among cooperative learning researchers far outweigh the areas of disagreement. Yet there remain several key points of controversy among researchers and reviewers that concern the conditions under which cooperative learning is instructionally effective. This article briefly summarizes the main areas of consensus and controversy in research on cooperative learning.

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Cooperative Learning and Student Achievement

Consensus. There is wide agreement among reviewers of the cooperative learning literature that cooperative methods can and usually do have a positive effect on student achievement. Further, there is almost as strong a consensus that the achievement effects are not seen for all forms of cooperative learning but depend on two essential features, at least at the elementary and secondary levels. One of these features is *group goals*, or positive interdependence: the cooperative groups must work together to earn recognition, grades, rewards, and other indicators of group success. Simply asking students to work together is not enough. The second essential feature is *individual accountability*: the group's success must depend on the individual learning of all group members. For example, group success might depend on the sum of members' quiz scores or on evaluation of a

report in which each group member contributed his or her own chapter. In contrast, studies of methods in which students work together to prepare a single worksheet or project without differentiated tasks hardly ever find achievement benefits (Slavin 1989a).

The degree of consensus on the achievement effects of cooperative learning methods that use group goals and individual accountability is considerable. I am aware of four full-scale reviews by different authors on this topic. My own reviews (Slavin 1983, 1989a, in press) have focused on elementary and secondary schools. Reviews by the Johnsons (Johnson et al. 1981) have included all levels, including college. Newmann and Thompson (1987) have focused on secondary schools (middle, junior, and high schools), and Davidson (1985) has reviewed research on cooperative learning in mathematics.

The findings of the four reviews were similar. My own concluded, "Cooperative learning can be an effective means of increasing student achievement, but only if group goals and individual accountability are incorporated in the cooperative methods" (Slavin 1989a, p. 151). Newmann and Thompson (1987, pp. 11–12) came to similar conclusions:

> A review of the research on cooperative learning and achievement in grades 7–12 produced 27 reports of high-quality studies, including 37 comparisons of cooperative versus control methods. Twenty-five (68 percent) of these favored a cooperative learning method at the .05 level of significance. . . . The pattern of results supports the importance not only of a cooperative task structure, but also of group rewards, of individual accountability, and probably of group competition as well.

Davidson (1985, p. 224) wrote: "If the term *achievement* refers to computational skills, simple concepts, and simple application problems, the studies at the elementary and secondary levels support Slavin's (1983) conclusions. . . . 'Cooperative learning methods that use group rewards and individual accountability consistently increase student achievement more than control methods in . . . elementary and secondary classrooms.' " All four reviews mentioned group goals and individual accountability as essential elements of cooperative learning.

Controversy. While no reviewer has yet expressed doubt that there is a broad set of conditions under which cooperative learning will increase student achievement, there is controversy about the specific conditions under which positive effects will be found.

One focus of controversy has been a debate between David and Roger Johnson and me that has more to do with different views on what constitutes adequate research than on questions of the essential elements of cooperative learning. The main elements of this debate have been covered in earlier issues of *Educational Leadership* (see Slavin 1988, Johnson and Johnson 1989, Slavin 1989b).

In addition to the controversy between the Johnsons and me, several other issues have been raised by various writers and reviewers. One issue is whether cooperative learning is effective at all grade levels. Newmann and Thompson (1987) question whether cooperative learning is effective in senior high school (grades 10–12). There is ample evidence that these methods are instructionally effective in grades 2–9, but relatively few studies examine grades 10–12. More research is needed in this area.

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Another issue is the effects of cooperative learning at the college level. Again, there are relatively few studies at this level, and the results are not as consistent as those from elementary and junior high/middle schools. However, there are several examples of positive achievement effects of cooperative learning in senior high school and college settings (see, for example, Sherman and Thomas 1986, Fraser et al. 1977).

Another question being debated is the appropriateness of cooperative learning for higher-order conceptual learning. Most cooperative learning studies have focused on basic skills (mathematics, language arts, reading), but several have successfully taught such higher-order skills as creative writing (Stevens et al. 1987) and identification of main idea and inference in reading (Stevens et al. 1988). Studies of Sharan's Group Investigation method (see, for example, Sharan et al. 1980) and of the Johnsons' constructive controversy methods (see, for example, Smith et al. 1981) have reported particularly strong effects on higher-order understanding in social studies.

Davidson (1985) has questioned whether group goals and individual accountability are necessary at the college level, and there is some evidence that they may not be. Studies of pair learning of text comprehension strategies by Dansereau (1988), as well as some of the mathematics studies cited by Davidson (1985), provide examples of successful use of cooperative learning at the college level without group goals or individual accountability.

Outcomes Other than Achievement

In areas other than achievement, there is even broader consensus about the effects of cooperative learning. One of the most consistent of these is the effect on intergroup relations (see Slavin 1985, Johnson et al. 1983). When students of different racial or ethnic backgrounds work together toward a common goal, they gain in liking and respect for one another. Cooperative learning also improves the social acceptance of mainstreamed

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academically handicapped students by their classmates (Madden and Slavin 1983, Johnson et al. 1983), as well as increasing friendships among students in general (Slavin in press).

Other outcomes seen in many studies of cooperative learning include gains in self-esteem, liking of school and of the subject being studied, time-on-task, and attendance (Slavin in press). Studies by Sharan and colleagues (1984) have shown that extended experiences with cooperative learning can increase the ability to work effectively with others.

Basic Agreement

In every area of research there are debates about what the research means. Cooperative learning, a topic studied by many researchers from different research traditions, is certainly no exception. However, after nearly two decades of research and scores of studies, a considerable degree of consensus has emerged. There is agreement that—at least in elementary and middle/junior high schools and with basic skills objectives—cooperative methods that incorporate group goals and individual accountability accelerate student learning considerably. Further, there is agreement that these methods have positive effects on a wide array of affective outcomes, such as intergroup relations, acceptance of mainstreamed students, and self-esteem.

Research must continue to test the limits of cooperative learning, to broaden our understanding of *why* and *how* cooperative learning produces its various effects (see Bossert 1988–89). Yet what we know already is more than enough to justify expanded use of cooperative learning as a routine and central feature of instruction.□

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