Toward a 
Cooperative Effort: 
A Response 
to Slavin

In his recent article, Slavin inaccurately depicts our approach to cooperative learning and omits crucial information about our research.

We would like to clarify Robert Slavin's description of our approach to cooperative learning and our research in his recent article, "Cooperative Learning and Student Achievement" (October 1988 issue). He describes our approach as having groups of students complete a single worksheet while the teacher rewards them on the basis of the single product. Contrary to what Slavin stated, we do not recommend this procedure, except under very special conditions.

Five Basic Elements
Our approach to cooperative learning emphasizes five basic elements that must be included within each lesson:

- **positive interdependence**—students must believe that they are responsible for both their own learning and the learning of the other members of their group;
- **face-to-face promotive interaction**—students must have the opportunity to explain what they are learning to each other and to help each other understand and complete assignments;
- **individual accountability**—each student must demonstrate mastery of the assigned work;
- **social skills**—each student must communicate effectively, provide leadership for the group's work, build and maintain trust among group members, and resolve conflicts within the group constructively;
- **group processing**—groups must stop periodically and assess how well they are working and how their effectiveness may be improved (Johnson 1970, Johnson and Johnson 1975, 1987).

Further, Slavin goes on to state that our research does not provide evidence that cooperative learning produces higher achievement than individualistic or traditional learning, citing one study to support his claim. He discounts two of our other studies based on a misrepresentation of the individualistic condition: contrary to what Slavin states, the material was taught in the individualistic conditions.
Controlled Studies

What Slavin does not tell the reader is that over the past 12 years we have published 43 studies comparing the relative impact of cooperative, competitive, and individualistic learning on achievement. In our studies, primarily field-experimental, students were randomly assigned to conditions, teachers were rotated across conditions, the same curriculum was used in all conditions, and the conditions were observed daily to ensure that they were appropriately implemented. These criteria make them some of the best controlled studies in the field. They took place in primary (8 studies), intermediate (20 studies), junior high (7 studies), high school (4 studies), and college (4 studies) classes. They were conducted on a wide variety of subject areas (some were conducted on more than one subject area): math (11 studies), social studies (11 studies), science (10 studies), reading and language arts (6 studies), geography/mapping (4 studies), physical education (2 studies), music education (1 study), and foreign languages (1 study).

Of our 43 studies, 10 compared cooperative and competitive learning; from these studies effect sizes weighted (1) to control for the number of findings in the study and (2) to minimize the variance of the effect size could be computed (see fig. 1). The effect size is 0.95. The effect size for the 6 studies that lasted for less than two weeks is 0.92, and the effect size for the 4 studies that lasted for two weeks or more is 1.01. The weighted effect size for the 29 studies that compared cooperative and individualistic learning is 1.02. Of the 29 studies, for the 9 that lasted less than two weeks, the effect size is 0.98; and for the 20 that lasted for two weeks or more, the effect size is 1.05. For 4 studies, no effect size could be computed, as a result of nonexperimental design or small sample size. The results of all 4 studies favor cooperation over competitive or individualistic learning (voting method).

Slavin criticized our 1981 meta-analysis because we included all available studies before we conducted subanalyses on the methodologically superior studies. He insists that physical education and the use of manipulatives (such as blocks and mazes) in math are not legitimate educational tasks. We disagree. Learning how to swim or play golf, furthermore, represent "procedural learning," whereby students not only have to learn conceptually the nature of swimming but also have to be able to perform it. Since most adult learning is of a procedural nature, studying procedural learning in the schools is an important enterprise.

A Fatal Flaw

Slavin's summary of the research on cooperative learning and achievement suffers from a fatal flaw. He takes the position that field-experimental studies that lasted less than 20 days—but did test theoretical propositions, include random assignment of students to conditions, rotate teachers across conditions, use the same curriculum in all conditions, check daily to ensure that the independent variable was being operationalized adequately, and use a well-conceptualized and well-defined control condition—are inferior to the theoretical curriculum evaluation studies that did last 20 days but did not meet these criteria for experimental design. This emphasis on length of operationalization over methodological quality does the field a disservice.

A Cooperative Effort

It is time researchers stop competing over whose cooperative learning method is best and start focusing on conducting theoretical research that enhances our knowledge of the basic dynamics of cooperative efforts. There is room for all approaches. We invite Slavin to join in a cooperative effort to better understand the conditions under which cooperative, competitive, and individualistic efforts are effective and how and why cooperative efforts are so powerful.

References


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