**Title**

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Peer reviewed

# What Are the Benefits of Cooperative Learning in Content-Based Instruction?

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In a cooperative learning classroom a teacher can deliver powerful subject area content while effectively accommodating the diverse language skills, academic knowledge, and cultural backgrounds that today's students bring to the classroom. There is a considerable body of research (Johnson & Johnson, 1974; Johnson, Johnson, & Maruyama, 1983; Kagan, 1986; Slavin, 1983) showing that cooperative learning classrooms not only accommodate but benefit from a mix of student needs, talents, and learning styles. Extensive research (De Vries & Slavin, 1978; Slavin, 1983) clearly shows the effectiveness of cooperative structures in raising students' scores on standardized tests of basic skills. Several major studies (Kagan, 1986; Slavin, 1977, 1983) which examined student achievement gains on standardized basic skills tests in cooperative and in conventional classrooms found that students in cooperative classrooms gained more than their counterparts in conventional classrooms. In addition to academic achievement, cooperative learning has proven effective in prosocial development and race relations (Kagan, 1987).

Cooperative learning establishes an environment in which students gain an understanding of content as well as prepare to interact in a social and economic world characterized by rapid change. Slavin (1978) provides steps to implement instruction focusing on the achievement of K-12 academically and racially diverse students. Johnson and Johnson (1975, 1984) developed cooperative learning methods that focus students on the collaborative and social skills required for effective group work. Their work provides the general principles and procedures of a cooperative learning classroom. Kagan's (1987) practical classroom application of cooperative learning structures is extensive and provides an excellent resource for planning content area instruction. All of the above studies provide strong evidence of the effectiveness of cooperative learning. The question posed, however, is to what degree this learning tool can benefit content-based instruction.

## Students Benefit

Students in the cooperative learning classroom interact more than in a conventional classroom. The teacher selects and combines structures that involve students in a cooperative learning environment: (a) peer tutoring in which teammates help one another to learn specific subject matter; (b) individual accountability, in which each team member is given responsibility for mastering a portion of a learning unit and later teaching the assigned information to teammates; (c) cooperative projects in which students collaborate to produce a product such as a class book, an oral presentation, an art work, or video production; and (d) learning experiences in which students and teacher assess learning goals—the ability to speak and write clearly about the content area, gather information, use it effectively to solve problems, and analyze and think logically about complex situations.

Teachers find that cooperative learning enables students to work, teach, and learn together. They use cooperative learning structures like *color-coded coop cards, numbered heads together,* or *student teams achievement division (STAD)* to provide immediate and frequent tangible and social feedback to students regarding their improvement. *Color-coded coop cards,* which emphasize peer tutoring, are designed to facilitate mastery of academic content (Kagan, 1987). The specific steps to using the cards include a pretest to identify information that is known or unknown to the student, e.g., vocabulary words, the multiplication tables, spelling, scientific terms, or factual historical information. The information is written on cards which students use as study cards when later working in dyads using well-established principles of learning, including frequent positive feedback following repeated rounds.

*Jigsaw* structures involve students in five- to six-member home groups that are given a unique piece of information on a topic the whole class is studying. Within jigsaw and its modifications (Aronson, Blaney, Stephan, Sikes, & Snapp, 1978; Slavin, 1977), the task is structured to make individuals accountable for their own learning gains, as well as assist team members on their mastery of content. For example, a teacher planning a science lesson might jigsaw the curriculum materials (four to six chapters covering the circulatory, glandular, nervous, etc. systems of the body) and assign each member of a home team one chapter. Team members then meet in an "expert" group composed of other students with the same topic to read and discuss. They master the material and decide how they will teach members of their home group the information. The class may then take a test to check for comprehension of the areas of expertise presented.

The *learning together* method (Johnson & Johnson, 1975, 1984) also structures learning so the contributions from each member must be respected for the group to reach its objectives. In the cooperative learning methods developed by Johnson and Johnson, students often receive grades based on their group's performance. Students using cooperative structures like learning together and jigsaw learn to value the contribution of each of the members of the group recognizing that together they form an effective educational community.

## Teachers Benefit

Teachers find cooperative structures like the *group investigation model* an effective means to incorporate both academic content and social skills. In essence, students in group investigation progress through consecutive learning stages (Sharan & Sharan, 1976; Sharan, Hare, Hertz-Lazarowitz, & Webb, 1980). Students first identify a research topic of interest and organize the classroom into a group of research groups. Student members of research groups take substantial reponsibility for deciding what they will learn, how they will organize the learning task, and how they will communicate with their classmates what they have learned. The class and the teacher are involved in evaluating group products and assessing the learning experience.

Students can be led through their educational experience in a way that promotes greater understanding of content and fosters the transfer of learning. There are various ways to achieve this: The teacher may ask students to consider how they did in accomplishing the academic assignment; students may share their thoughts with peers in their small group or with the class as a whole; or students may reflect on their learning experience by writing journals. Questions that assist students in evaluating and processing their learning experience (Moss, 1991) may be incorporated throughout each phase of the cooperative lesson: first, in experiencing new information or skills; next, in sharing perceptions, interpreting, generalizing, applying, and finally, extending the application by making it a part of their personal lives. For example, questions appropriate when new information is introduced include: If you could guess the answer, what would you say? What do you need to know to ...? As students later work toward generalizing from the specific content they have studied and knowledge they have gained about themselves or their groups, they might process: What did we learn/relearn/discover? Through processing their own learning students gain a sense of control over and participation in events (Dishon & O'Leary, 1984).

## School Community Benefits

Cooperative learning establishes an effective school community, assists teachers in providing instruction that builds the student's command of language, and facilitates the use of language as a vehicle to learn content. Cultural and linguistic diversity, rather than being

perceived as a learning handicap or deficiency, is recognized as a positive element from which student groups profit. Students explicitly recognize the importance of culture as instruction requires them to draw on their background knowledge to interpret the information presented in subject matter lessons. Cooperative structures focusing on peer tutoring very efficiently increase the amount of comprehensible input, directly fostering increases in students' language mastery and understanding of subject matter.

## Conclusion

The advantages of using cooperative learning structures for effective content area instruction are shown in the benefits gained by the students, the teacher, and the school community. The research suggests that when the learning process and the instructional system emphasize cooperative group achievement, the values of the community shift and all students, including students from traditionally under-achieving groups, get involved in school, participate in the learning process, and succeed according to criteria established by the school. There is extensive research showing that cooperative learning methods contribute "significantly to student achievement—to an equal extent in both elementary and secondary schools; in urban, suburban, and rural schools; and in diverse subject matter areas" (Slavin, 1981, p. 659). ▓

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