

How Cooperative Learning Works for Special Education and Remedial Students

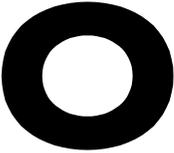
JOSEPH R. JENKINS
University of Washington

LAURENCE R. ANTIL
Western Washington University

SUSAN K. WAYNE
University of Washington

PATRICIA F. VADASY
Washington Research Institute

ABSTRACT: *This study reports new analyses from an earlier study by Antil, Jenkins, Wayne, & Vadasy (1998) in which 21 general education classroom teachers were interviewed about their use of cooperative learning. We report teachers' perceptions of how cooperative learning benefits special education and remedial students, the percentage of these students who consistently participated in classroom cooperative learning activities, its efficacy for these students, and the kind of modifications teachers made for students with special needs. Teachers were generally positive about cooperative learning's efficacy for students with learning problems, while acknowledging that it worked better for some students than others. Major benefits were improved self-esteem, a safe learning environment, and better classroom success rates and products. The primary modification for special and remedial education students was selecting suitable partners for them.*

 Our aim in this research was to describe what general education teachers think about cooperative learning as an instructional approach for special and remedial education students. Johnson, Johnson, and Holubec (1993) described cooperative learning as "the instructional use of small groups so that students work together to maximize their own and each other's learning" (p. 6). Although researchers differ on the exact features

that define cooperative learning (Johnson et al., 1993; Kagan, 1989-90; Sharan, 1980; Slavin, 1990), they generally agree that students must work together in small groups, make explicit effort to help each other learn, and share in the evaluation of learning (e.g., all members of a group receive the same evaluation).

Use of cooperative learning in elementary classrooms appears to be widespread. A congressionally mandated study of educational opportunity covering 3 million third-grade students

(Puma, Jones, Rock, & Fernandez, 1993) found that a high percentage of their teachers said they used cooperative learning in math (79%) and reading and language arts (74%). Another survey of 85 elementary school teachers in two school districts found that 93% indicated they used cooperative learning (Antil et al., 1998). An in-depth interview of a subset of those teachers who said they used this approach disclosed that 81% conducted cooperative learning lessons every day in a typical week, with 100% reporting use of the strategy for reading, and 81% for math. Teachers said they regularly used cooperative learning in four subjects.

These teachers had adopted cooperative learning primarily because they believe it facilitates academic learning (79%), engenders active participation in learning (71%), and affords opportunity for important social learning (71%). Representative of academic learning rationales were statements like “cooperative learning increases comprehension and knowledge,” “it affects their general overall speed of learning,” “Kids learn much more from each other than maybe we would like to believe. They don’t really need a teacher that much” (Antil et al., 1998, p. 424). The primary mechanism through which teachers saw cooperative learning affecting learning is children’s ability to talk to one another in special ways, or *kid-talk*. According to this belief, peer-mediated learning occurs because one child hears a well-put explanation from a team member, sometimes but not always communicated in a form that is particular to the way that children speak. In the words of one teacher:

They seem to have their own language. They are able to express their thoughts and ideas to each other in a way that I can’t. I use teacher language, and kids explain in kid language. And as much as I try to do that, I’m still their teacher. I’m not a kid. (Antil et al., 1998, p. 424)

Related to the active involvement rationale, teachers saw cooperative learning resulting in broader student participation in lessons, more active learning, or greater task engagement in classroom lessons as a result of working together. Most linked *deeper* task engagement to peer interaction and activity-based assignments.

Learning is enhanced. They retain information. It’s a hands-on experience. They’re not sitting listening to you in a cooperative group. They’re doing something. If they’re all in little groups

and know their expectations, they can talk together and not key each other out. (Antil et al., 1998, p. 425)

The most salient idea related to social learning was that cooperative learning helps children learn to cooperate and to value cooperation. Teachers also said that cooperative learning led to learning specific skills (e.g., listening and responding respectfully to peers’ contributions) and learning to work with nonpreferred classmates. “Sometimes I’ll group kids who are having a hard time together so that they have to hash out their difficulties” (Antil et al., 1998, p. 425).

Teachers’ adoption of cooperative learning comes as good news for special and remedial advocates who see it helping a wide range of struggling learners overcome obstacles they might not overcome working alone and gaining access to challenging curricula (Alberg, 1991; Johnson & Johnson, 1980; Slavin, 1990; Slavin & Stevens, 1991; Slavin, Stevens, & Madden, 1988; Thousand & Villa, 1991; Will, 1986; Wood, Algazzine, & Avett, 1993). In cooperative learning, peers can clarify the nature of an assignment, interpret complex instructions, model performance, explain ideas, give feedback and corrections, take responsibility for difficult parts of the assignment, scaffold problem-solving efforts, and provide encouragement.

Although general education teachers may be using cooperative learning and special educators advocating its use, the efficacy picture for cooperative learning with special education students remains cloudy. Two observational studies of special education students in cooperative learning yielded a mix of positive and negative results (Beaumont, 1999, O’Connor & Jenkins, 1996). Likewise, experimental studies of special education students’ achievement in cooperative learning report a similar mixture of outcomes, leading to lukewarm research reviews, “The opportunity for students to study together does not guarantee gains in academic achievement” (Tateyama-Sniezek, 1990, p. 436); and “...in light of the inclusive findings in the research literature regarding the efficacy of using cooperative learning (CL) with students with learning disabilities (LD), teachers may wish to exercise caution in deciding whether to use CL to improve these stu-

dents' academic performance" (McMaster & Fuchs, 2002, p. 116).

It is hard to reconcile the inconsistent research findings on cooperative learning with the strong advocacy for it found in the special education literature. However, one voice notably missing from the conversation about cooperative learning's efficacy is that of classroom teachers who use this approach with special education and remedial students. Teachers have more opportunities than perhaps anyone to gauge how students with learning problems respond to cooperative learning. Their perspective could add an important dimension to the knowledge base on how cooperative learning works for students with disabilities. In this article, we report general education teachers' thoughts about cooperative learning's use with special and remedial education students. Elementary classroom teachers spoke about their perceptions of cooperative learning's benefits for special and remedial education students, the percentage of these students who consistently participated in cooperative learning lessons, the efficacy of cooperative learning for struggling students, and modifications they made in cooperative learning to accommodate special and remedial education students. Data in this study are based on a set of interview responses that were given in connection with the Antil et al. (1998) cooperative learning research.

METHOD

SCHOOLS AND TEACHERS

Schools. Teachers from two urban (low income) and two suburban (upper middle income) elementary schools, located in the United States, participated in the interviews. The urban schools were similar in racial composition: approximately 24% were Asian American, 38% African American, and 36% Caucasian students, with 42% of the student body qualifying for free or reduced lunch. The two suburban schools had similar student demographics: approximately 5% Asian American, 2% African American, and 92% Caucasian students, with 7% of students eligible for free or reduced lunch.

Teachers. In an earlier stage of this study, 85 teachers (all grade-level teachers from six schools) completed a survey on their cooperative learning practices. From this group, 21 classroom teachers were selected for interviews. Mean years of teaching experience for the 4 male and 17 female teachers was 13, ranging from 1 to 34 years. Forty-seven percent held master's degrees. The mean size of their classes was 27 students, ranging from 22 to 32.

We selected teachers who used cooperative learning, sampling every grade level (1-5) in a school, and included only teachers who reported having special education students in their classrooms. Most of the special education students in these classrooms were classified as having a learning disability (LD), but some classrooms also included children with emotional and behavioral disabilities (E/BD), attention deficit/hyperactivity disorder (AD/HD), and more pronounced cognitive disabilities. We do not have precise information on the number of students from the various disability classifications because many teachers were uncertain about their students' classification. The remedial students were other children from the teachers' classrooms whose academic achievement levels were at the lowest in their schools. These students generally received support from Chapter 1 or from district- or state-funded remedial programs.

INTERVIEWS

Interviewers were three researchers, all licensed teachers, who used a semistructured protocol that sought information about (a) teachers' current use of cooperative learning and their experience with this instructional strategy, (b) their judgments about its benefits and efficacy both overall and with various types of students, (c) participation of students in cooperative learning activities, and (d) modifications they created for special and remedial education students. A number of questions included probes, their use dependent upon

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the amount and type of information teachers provided in their responses. After transcribing the interviews, establishing codes, and completing initial analyses, we conducted a second round of interviews to clarify ambiguities, pursue lines of questioning, and assist us in coding decisions.

In analyzing teachers' comments during the first interview, we noted that several teachers had indicated that cooperative learning was more effective than alternative instructional approaches. Intrigued by this finding, we created a ranking question on the effectiveness of cooperative learning relative to other strategies for teaching struggling students. In the follow-up interview we asked 20 of the original 21 teachers the following question:

Several teachers have told us that one reason they use cooperative learning is to help meet the needs of their lower performing students, including students with IEPs. Consider the various strategies that might be used for this purpose (e.g., strategies like mastery learning, direct instruction, teacher-led small group instruction, individualized instruction, outcomes-based education, computer-assisted instruction, specialized instructional materials, adjusting the pace of instruction). Now in comparison to those strategies or *any other* instructional strategy with which you are familiar, where would you rank cooperative learning in its effectiveness in meeting the needs of your special education students?

PROCEDURES

Interviews were conducted from March to June, and both initial and follow-up interviews were tape-recorded. Initial interviews lasted approximately 45 min, and follow-up interviews generally lasted 15 min.

Transcriptions and Coding. The audiotaped interviews were transcribed in preparation for coding. Teachers' statements were grouped into several categories that stemmed from the interview questions including

- Major benefits of cooperative learning for special and remedial education students.
- Participation of special and remedial education students in cooperative learning.
- Efficacy of cooperative learning for special and remedial education students.

- Problems encountered for special and remedial education students in cooperative learning.
- Modifications of cooperative learning for special and remedial education students.

Three researchers independently coded each of the transcripts. Frequent discussions were held throughout this phase of the investigation to ensure consistent use of the codes, to resolve any differences in the assignment of codes to the transcripts, and to develop new codes. Adjustments to our code list in the form of additions, deletions, and minor reinterpretations of some codes were sometimes necessary. All such changes were documented and then, through a recursive process, applied to previously reviewed transcripts to ensure consistency throughout the coding process. At the completion of this phase of the investigation, we used the Ethnograph software package (Seidel, Kjolseth, & Seymour, 1988) to format the transcribed interviews using the code words to facilitate examination and interpretation of the material during the analysis phase of the investigation.

RESULTS

Teachers sometimes spoke about special education students specifically, and sometimes about special and remedial education students in general. Where we could, we retained this distinction. Otherwise, results are organized according to

- Major benefits that teachers perceived special and remedial education students derive from cooperative learning.
- Extent to which these students participated in cooperative learning.
- Efficacy of cooperative learning for special and remedial education students.
- Modifications teachers made to increase students' success in cooperative learning.

We have classified teachers' responses according to common themes and give the percentage of teachers whose responses fit a theme. Throughout this section, we attempt to preserve teachers' voices, letting them express their thoughts about special and remedial education students in cooperative learning.

PERCEIVED BENEFITS FOR SPECIAL AND REMEDIAL EDUCATION STUDENTS

When asked if and how special and remedial education students derive benefit from working in cooperative learning, every respondent offered several ways that cooperative learning helped these students. For example, one fourth-grade teacher said, "They gain a lot more, they finish more, they learn more and gain self-esteem" (4-509; Number before dash is the teacher number; the final digits indicate the line of transcript where quotation begins). However, some benefits were more prominent than others.

The three most frequently cited benefits, each mentioned by more than half of the respondents (52%) were self-esteem, the security that comes from being part of a group, and higher success rates and/or better products. Illustrating the self-esteem theme, a fourth-grade teacher said, "[The major benefits]: Self-esteem would be number one. Number two would be that they actually learn more. They complete work" (4-535). Similarly a third-grade teacher responded:

The major benefit is self-esteem. The child feels successful because he's completing a product with a team that can give assistance in areas he's weak in, and yet he feels satisfied with what the group has done. (13-420)

Another teacher described how membership in a group and peers' validation promoted a positive self-image in special and remedial education students:

I think they feel like they are a valuable member of the group. It starts building a positive image for them, that their ideas, their thoughts, what they're doing in that group is important...I think they start valuing themselves as a learner, a group member. (16-826)

Equally prominent in the teachers' beliefs was that cooperative learning provides struggling students with a more secure, less stressful learning environment. One teacher expressed this as, "They [special education students] like the feeling of success that comes out a lot in cooperative learning ... there's less frustration and anxiety" (1-492). Another said, "They develop a comfort level. They're not on their own, they're not being singled out" (6-401).

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Along with contributing to special and remedial education students' self-esteem and providing a safe learning environment, teachers also said cooperative learning resulted in higher success rates and better products for special and remedial education students. Teachers usually linked creating better products with feelings of success, as illustrated by the following responses. "I think they get a lot more work done. Their self-esteem is built up. They're building friendships" (2-415). Another said:

Those kids who struggle really feel good about themselves when they've produced a final product...They are able to achieve success through the help of their peers, and perhaps accomplish things they could not accomplish by themselves. (18-278)

Thirty-eight percent of the teachers said cooperative learning allowed for greater voice and participation by special and remedial education students. One first-grade teacher remarked, "They can be part of a learning group and they can contribute. It might not be a lot, but they have their voice" (6-404). Another tied participation to the assignment of roles in cooperative learning groups:

They have success and their voice, and they don't get lost in here because...we assign roles ...They're always responsible for something...a time that they are going to have to be the speaker. So I think they have success and they are held accountable. With special education kids in a cooperative learning group, they learn that they have an important part. (20-892)

Thirty-three percent of the respondents stated that cooperative learning resulted in better learning for special and remedial education students. Most teachers who mentioned learning as a benefit of cooperative learning stated that groups provided students with another way for low achieving students to learn. One third-grade teacher said, "They are free to find a better way to

learn it if they don't get it the way I teach it...what they need to learn is met easier in a group" (8-609). A fourth-grade teacher stated that cooperative learning results in more learning for special and remedial education students, then went on to say how her special education students seek out learning partners, "They [kids in special education] are the ones that hate having to do anything on their own. They want to migrate to someone else to work with" (4-533).

Teachers also noted several more ways that cooperative learning helps students with learning problems (e.g., observing models, developing team skills, and obtaining more repetitions) but these themes were not as prominent as others.

We examined relationships among the three most frequently named benefits for special and remedial education students. Whereas the link between naming better classroom products and self-esteem as cooperative learning benefits was significant, $\chi^2(1) = 5.84, p < .05$; self-esteem as a benefit was not significantly associated with a safe learning environment, $\chi^2(1) = 2.38, ns$; nor was a safe learning environment related to better products, $\chi^2(1) = 2.38, ns$. In addition, because improved learning is a major focus of cooperative learning researchers, we were particularly interested in whether naming "better learning" as a benefit related to other benefit categories. Separate Chi-square analyses tested the association between mention of learning as a benefit and mention of other benefits. Results showed that naming learning as a benefit was not significantly associated with mentioning another benefit category: improved self-esteem, safer learning environment and/or reduced pressure, higher success and/or better products, and more participation and/or voice [all $\chi^2(1) < 1, ns$].

Participation Rates. Across classrooms, teachers reported that 78% of their special and remedial education students were consistent participants in cooperative learning. Percentage of participating special and remedial education students ranged from 50% to 100% across classrooms. Forty-three percent of the teachers said that all of these students consistently participated in cooperative learning groups.

Perceived Effectiveness of Cooperative Learning. A majority of teachers (52%) said cooperative learning worked well for special and remedial education

students, without qualification. Several viewed cooperative learning as an effective instructional arrangement, particularly for students with disabilities, for example:

[Cooperative learning works] wonderfully. I don't think I could do my job if I couldn't do cooperative groups with those kinds of kids. I mean, as far as mainstreaming is concerned there's no better teacher than the kids who are sitting right there beside them. (14-532)

I think it [cooperative learning] really helps them [special education students] out. I really do. Like I said, it may not all the time help out the child who doesn't have special needs, who gets things quickly, but the special needs kid I think really benefits from cooperative learning. (21-516)

One teacher attributed the decision to place a child with E/BD in her classroom to her use of cooperative learning:

This year a child with special needs was transferred into my classroom particularly because of cooperative groups. And for him, although he still has a difficult time being ultra successful, he's been much more successful and much more happy because of his ability to feel part [of a group], that sense of belonging is important to children, and to everyone. So, I think that's been good for him. (15-419)

We wondered about the relationship between indices of cooperative learning success, specifically whether giving an unqualified endorsement to cooperative learning for special and remedial education students was related to perceptions that all these students participated consistently in cooperative learning. The two were not significantly related, $\chi^2(1) < 1, ns$. Thus, teachers did not see consistent cooperative learning participation by special and remedial education students as a necessary condition for judging cooperative learning as successful for them. This disassociation between judging cooperative learning as an unqualified success and participation rates is illustrated in the responses of a third-grade teacher who said that cooperative learning worked, "Wonderfully. It's their refuge...they are going to be a lot more successful if they're in a group" (19-429). Regarding special and remedial education students' participation, he said:

Three of the five are strong participants even though they have some problems learning—the little girl who has social behavior problems is not a problem academically. Two of the five, it's really tough for them. They have to be constantly encouraged to stay with their group, to take ownership. (19-433)

Only one teacher said that cooperative learning had not worked well for her special and remedial education students, pointing out that the children's behavior problems required her to “end up being with them, giving them a dynamite amount of attention” (2-395). The rest of the teachers, while generally positive about cooperative learning's effectiveness, noted that cooperative learning was sometimes effective and sometimes not, or effective with some students but not others. Illustrating the latter, one teacher responded, “For one [special education] student it does work, for another it doesn't seem to work so well” (9-482). A fifth-grade teacher tied the success of cooperative learning to students' motivation to learn:

For some, it [cooperative learning] is an excuse to not participate, to hide out, but there are some with special needs who have that desire to learn. They pair themselves up with someone they know will do better. (5-287)

A third-grade teacher attributed the success her special education students had in cooperative learning to their effort and involvement, along with their peers' willingness to include them in the group's work:

It depends on the individual. I have one girl who loves it, and she's a really hard worker and enjoys the cooperation because she knows she doesn't have to carry the burden by herself for those things she's not capable of. I use cooperative learning and pairing with her a lot so that she can feel support. I have another [special education student] who tends to be a little less fo-

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cused...the group doesn't sometimes let him have a role. He's doing his best and is trying. (13-355)

Whereas several teachers said cooperative learning's effectiveness depended on the traits that individual students brought to the task, one teacher tied cooperative learning's effectiveness to her actions:

Some of how it works is not just based on them ...is based on how much or how little I've created an environment that works for them. I don't feel always that I have the hang of it, how to meet everybody's needs through cooperative learning. I think some of their success with it is based on them, it's also based on me. (1-395)

The same teacher acknowledged that structuring the environment for successful learning was not an easy task for a one student with particularly challenging behavior:

He has a very difficult time working in cooperative groups. He has very disruptive, very erratic behavior. He might have a couple good minutes, and the next minute he's kicking somebody and they're screaming. It's difficult. (1-433)

Of the 10 teachers who mentioned special and remedial education students that were less successful in cooperative learning, 4 brought up students with social or behavior problems, 2 talked about students who had difficulty sustaining attention, 1 described a student with low motivation to learn, another spoke of a student who gave up easily, and 2 mentioned students with moderate and/or severe cognitive disabilities who they sometimes held out of cooperative learning.

While acknowledging that some special and remedial education students struggled in cooperative learning, teachers nevertheless remained convinced that cooperative learning was appropriate for these students. Asked if cooperative learning was effective for her special and remedial education students, one teacher said, “Sometimes. Sometimes not. They'll give up if they can't add [to the discussion]” (12-409). But later she added, “I can't think of anything that would work better. Working by himself would not help at all, so working in a group is the best choice.”

Relative Effectiveness of Cooperative Learning as an Instructional Strategy. When asked to rank

cooperative learning in relation to other instructional approaches for meeting special and remedial education students' needs, 16 of 20 teachers ranked cooperative learning first or second in effectiveness. Three more ranked it third.

Modifications of Cooperative Learning for Special and Remedial Education Students. All but two teachers described some adjustments they made to facilitate special and remedial education students' performance. Seven mentioned they carefully selected learning partners for struggling students. Some of these spoke generally about grouping considerations: "I usually try to put them in a group where they're going to have a chance to get some stimulation and really contribute" (19-572). "For him [a special education student], I try not to have groups large enough that he can tune out, so that he's brought along" (15-508). Two said they took into account the reading and writing skills of their special and remedial education students, along with the task requirement, "I most definitely assigned a reader with a nonreader or a writer with a nonwriter so that the nonreader or nonwriter would not feel hindered by their lack of ability in that area" (17-154) and "We would take into account group placement.... If it's an activity where we need a writer, we make sure we draw a writer" (11-148).

Two teachers claimed not to make adjustments for students with disabilities, indicating the cooperative learning group's responsibility for making adjustments:

No [I don't make adjustments], I think in a cooperative learning situation the whole point is to help each other be the best you can be, and if a child needs help, group members will step in and assist him. (13-372)

The other teacher was even more emphatic about the group's responsibility for involving struggling and inattentive students:

But do the kids make them [modifications]? Yes. Kids know not to assign him overly large tasks because they know he won't get done. Do they try to include him? Yes, they do try to include him. Do they give him lots of encouragement? Yes, the group has been very sensitive to him. Are they on his case, if he doesn't do it? Yes, and I think that's probably good. (15-485)

Nevertheless, a student's behavior is sometimes too much for his group to accommodate. One teacher resorted to permitting a child with behavior problems to float between groups. Ultimately, a multidisciplinary team changed the child's placement:

One student has extreme behavioral needs and is not able to attend for a long enough period of time. I started out having that person with a partner, but the partner got extremely frustrated quickly. Then I had that person floating because some of the groups didn't seem to mind if he joined them now and then. That seemed to work okay. But what's mostly happened is we've come up with an individual education plan for that person, and now it's a different schedule. (9-484)

Although it was mentioned more often, group composition was not the only modification teachers made. Four said they modified the group task to facilitate a student's participation (e.g., reducing the amount of reading or writing for a student). One stated, "I'd give them an easy job . . . If I was doing reading, I would give them an easy part" (8-669). Similarly, another said, "I make sure that the jobs I incorporate into the assignment include something that each of them can do" (4-624). One of the four reported changing the response mode for a particular student, "Sometimes I'll have a child do dictation to another if it's a written assignment" (19-572).

Two teachers whose classes included students with more pronounced cognitive disabilities excused these students from some cooperative learning activities, giving them reading materials more in keeping with their abilities. For example, a sixth-grade girl with severe disabilities worked with an instructional assistant in a second-grade basal reader instead of cooperative learning literature groups. In other subjects, however, the student participated and contributed to her cooperative learning groups.

In addition to altering group composition, task assignments, and instructional materials for special and remedial education students, several teachers also reported more direct adult involvement in cooperative learning groups or with students outside their groups. One second-grade teacher said that she often had to join groups that

included difficult-to-manage students, and a fifth-grade teacher told us:

I've had to really work with his groups to accept him, and if he's off-task, to help him get back on, and that kind of thing. So, I think they all enjoy it, but if they were in his group, they were hesitant and I'd have to get in there. (21-487)

Two teachers assigned an instructional assistant to groups that included students with more severe disabilities. Speaking of such a student, one teacher said, "Academically and emotionally, he's like a 2-year-old. If he has an aide that's sitting with him, he'll do okay." (11-416).

Three other teachers described helping struggling students outside the group so they were more successful in their cooperative learning groups. One remarked:

Sometimes when we are doing writing, I do help him a lot, have him read a story to me, and we meet together just the two of us first and then I help him elaborate on his story. So I pull a little bit out of him, and we write together before he goes back to his group so he goes back with a good product, so he always has success within his group. (20-762)

The other described a similar pull-aside strategy for assisting student performance in their groups:

If some of the students could not read [that passage], one of the students would either read for them, or we as teachers would pull them back ...and we would send them back to the group after we'd read the passage to them. (18-333)

Speaking of a student with LD, another teacher told us that if things got tense in the group, he allowed this student to report to him rather than to the group:

He fits in just fine. He does participate. And if he doesn't know about it [the topic], it's odd because he'll just sit there and listen, and then he'll give it his best shot. Then, if his group does come down on him, he'll come up to me, because sometimes a kid doesn't want to share [his thoughts] with his peers all the time. (16-736)

Because careful selection of learning partners is an adjustment that distinguishes between more and less successful cooperative learning for students with LD (O'Connor & Jenkins, 1996), we decided to examine the relationship between

teachers' stated use of this adjustment and students' participation in and success of cooperative learning. Those teachers who said they took care in selecting learning partners for special and remedial education students were not more likely to judge cooperative learning as an unqualified success, nor to state that 100% of their special and remedial education students consistently participated in cooperative learning, both ($\chi^2(1) = 1.53, ns$).

DISCUSSION

All 21 general education teachers in this study believed that special and remedial education students derive a broad range of benefits from cooperative learning. The three most frequently named benefits, each mentioned by over half the respondents, were: (a) improved self-esteem, (b) provision of a safe learning environment, and (c) greater success rates on classroom tasks and/or better products. After these, the next most frequently mentioned benefit was that cooperative learning gave special and remedial education students greater voice and/or participation in classroom activities. Several teachers also said cooperative learning resulted in better learning, usually because it gave students an alternative way to learn.

This ordering is interesting for two reasons. First, the three benefits at the top of the list have received far less attention from special education researchers than have cooperative learning's effects on achievement (Jenkins & O'Connor, 2003). Second, "better learning from cooperative learning" ranked only fifth in prominence. Its relatively low mention could be an artifact of teachers' having named other benefits (e.g., greater success on classroom tasks, better products, and higher participation) that they consider proxies for learning. Having already mentioned the proxies, teachers may have expected interviewers to automatically infer better learning as a benefit. However, mention of better learning was not significantly related to mention of learning proxies; thus, as a group, teachers were not substituting better success rates, products, and classroom participation for better learning. Alternatively, teachers may make distinctions be-

tween peer-assisted classroom performance and achievement gains that may or may not follow from peer-assisted classroom products, success rates, and participation. Whatever the explanation, cooperative learning's learning benefits were not emphasized as much as other benefits (e.g., improved self-esteem).

The benefits that teachers attributed to cooperative learning were independent of one another, with one exception. Mention of special and remedial education students' improved classroom success and products was significantly related to mention of improved self-esteem, with the two causally linked (i.e., self-esteem resulting from better products).

All models of cooperative learning tie cognitive, social, and attitudinal learning outcomes to the quantity and quality of cooperative interactions that occur among group members. Participation in the groups' work is considered a necessary, if not a sufficient, condition for learning. Estimated participation rates for special and remedial education students ranged from 50% to 100%. At the high end, these participation rates are remarkable, especially considering that 43% of respondents said *all* their special and remedial education students participated consistently in cooperative learning. Several teachers said that without cooperative learning, participation rates would have been lower. Still, most teachers indicated that some special and remedial education students did not consistently participate in cooperative learning.

Just over half of the teachers said cooperative learning was very successful with special and remedial education students, without any qualifications. Only one said it had not been successful; the rest indicated it worked well for some students but not others. Surprisingly, judgments about cooperative learning's overall efficacy for special and remedial education students were unrelated to their estimates of students' participation in cooperative learning. Teachers apparently kept efficacy and participation rates separate in their minds. Rather, they appeared to judge efficacy against an implicit standard (i.e., the potential of other approaches to give better results). Every teacher ranked cooperative learning as more effective than most instructional approaches, and 80% said it was first or second in efficacy relative to

any other instructional approach for special and remedial education students. Teachers took a broad view of efficacy, emphasizing benefits like self-esteem and better classroom products more than academic achievement. Although they gave favorable evaluations to cooperative learning as an instructional approach for special and remedial education students, nearly half said that some of these students struggled in cooperative learning.

Why were some special and remedial education students less successful in cooperative learning (according to teachers' perceptions of their participation and performance)? Unfortunately we did not think to ask this question dur-

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ing the interviews, but we can surmise something of teachers' thinking on this topic. When teachers mentioned specific students who were unsuccessful in cooperative learning, they spoke of traits students brought to the learning task (e.g., behavior and attention problems, inclination to become discouraged, low motivation to learn). Although these traits do not necessarily undermine success in cooperative learning, they definitely increase the challenge that groups face in including everyone and completing tasks.

The importance of special and remedial education students' learning and behavioral characteristics combined with peers' response to these characteristics was not far from the teachers' minds; several reported difficulty in finding suitable learning partners to work with students who demonstrated behavior problems. One third made a point to say they were careful in placing special and remedial education students with certain students but not with others, suggesting that classroom peers' inclination and ability to provide support was a key element in special and remedial education students' success. The idea that special and remedial education students' success in cooperative learning depends both on the characteris-

tics they bring to cooperative learning and on their teachers' success in placing them with suitable partners is consistent with findings from observational research (O'Connor & Jenkins, 1996). Locating capable and agreeable learning partners for special and remedial education students is complicated by some students' perception that special education and remedial students are less desirable work partners (Putnam, Markovchick, Johnson, & Johnson, 1996). After reviewing observational studies of special education students in cooperative learning, Jenkins and O'Connor (2003) concluded, "Finding suitable partners for children with LD was among the stiffest challenges for teachers, and in this endeavor they were not always successful" (p. 423).

As for adjusting or modifying cooperative learning for special and remedial education students, no single strategy was favored by more than a third of the respondents. Selecting suitable learning partners was mentioned more than other adjustments. We were curious about the relationship between teachers' use of this strategy and their perceptions of special and remedial education students' success in cooperative learning. A positive relationship between careful partner selection and students' success might suggest that careful grouping led to better outcomes (higher participation rates or judged efficacy). A negative relationship between careful partner selection and perceived participation and success rates might suggest that teachers resorted to more careful partner selection in response to problems of participation and efficacy. However, neither interpretation received support; teachers who said they carefully selected partners were neither more nor less likely to report high participation or to judge cooperative learning an unqualified success for special and remedial education students.

Few teachers said they modified cooperative learning tasks or assisted students outside the group to facilitate the performance of special and remedial education students in cooperative learning. Even though most teachers mentioned some kind of adjustments for special and remedial education students, we were left with the impression that they actually made very few, or at most minimal, adjustments for these students. In most instances, teachers' initial response to our query about adjustments was, "No," then later they

mentioned grouping considerations, easing the task, or giving additional adult assistance.

In general, teachers expected a student's teammates to make adjustments, if adjustments were needed. Up to a point, this expectation is consistent with principles of cooperative learning, where learners assume responsibility for their partners as well as for themselves. O'Connor and Jenkins (1996) found that in successful cooperative learning groups, members made adjustments for special education students—taking over difficult parts of the task, demanding participation, modeling performance, giving corrections, providing encouragement. However, in that study fewer than half of the students with LD were successful in cooperative learning; their teammates did not or could not make effective accommodations for them. Similarly, Beaumont (1999) reported that only 40% of helping episodes involving students with disabilities were successful (i.e., enabling the student who requested help to proceed with a task). These results suggest that betting on teammates to provide effective instructional support for special and remedial education students is anything but a safe wager. Moreover, results of these observational studies run counter to the perception of teachers in this study that their special and remedial education students received effective and considerate help from teammates. A limitation of this study is lack of classroom observations.

Finally, a word about the form of cooperative learning that the teachers used. Antil et al. (1998) reported that 76% employed a soft form of cooperative learning—one that did not explicitly include procedures that researcher-developers recommend for establishing individual accountability (e.g., administer tests, compute individual students' improvement scores, and reward group performance). Instead, the teachers taught students to work together, assigned roles, rewarded group performance, and encouraged students to hold up their end of the groups' work. Students were individually accountable to *their teachers* (e.g., required to submit an individual product in addition to their group's), but their individual performance was not documented and fed back to the group.

Teachers' omission of explicit procedures to induce individual accountability may be impor-

tant. Research reviews by McMaster & Fuchs (2002) and Slavin (1990) reported that effects of cooperative learning on achievement were negligible in studies without explicit individual accountability. However, their conclusion derives from aggregating studies in ways that confound individual accountability with other potent instructional variables (e.g., approach to reading instruction). The conclusion is not based on experiments that systematically vary accountability procedures; such experiments are notably missing from the cooperative learning literature.

That most respondents overlooked individual accountability is troubling but does not mean their applications of cooperative learning were ineffective. However, omission of individual accountability procedures may suggest that these teachers had received insufficient instruction on how to establish individual accountability (a clear message for teachers and teacher educators). Or, it may suggest that teachers, who have one of the most demanding jobs in society, find researcher-developers' models of cooperative learning impractical for everyday use (a clear message for researcher-developers).

What can we learn from listening to teachers talk about their cooperative learning practices? There are certainly limits to what can be learned from research like this, just as there are limits to what can be learned from experimental and observational studies. Still, listening to teachers provides insight into

- What they mean by cooperative learning (everything from collaborative seatwork to group work bolstered by role assignments, group and individual products, and group processing).
- How they think it benefits special and remedial education students (boosts self-esteem, provides a less stressful learning environment, and results in better classroom products).
- How well they think it works (better than anything else).
- How they implement it (informally, usually without explicit individual accountability).
- How they make adjustments for students with disabilities (mostly through selection of learning partners).

- For whom it works (most but not all special and remedial education students).
- The students who struggle in cooperative learning (those with behavior and attention problems).

IMPLICATIONS FOR PRACTICE

Findings from this study along with those from a related study of the same teachers (Antil et al., 1998) give teachers, teacher educators, program administrators, and researcher-developers some things to think about. Here are a few questions for practitioners and researchers to consider. Why the discrepancy between teachers' perception about the effectiveness of cooperative learning for special education students and the inconsistent findings of experimental studies? Why the discrepancy between teachers' high estimates of students' participation in cooperative learning activities and the disappointing participation levels reported in observational studies? Why the omission of explicit individual accountability procedures in teachers' descriptions of their cooperative learning approaches and the inclusion of these procedures in researcher-developers' models?

Raising these questions with education professionals (practitioners, administrators, teacher educators, and researchers) as well as teachers in training should stimulate discussion about how cooperative learning can benefit special and remedial education students, and may even produce an opportunity for cooperative learning (among educators) about cooperative learning. Listening to general education teachers describe their thoughts about the utility of cooperative learning for special education and remedial students reveals that many teachers have embraced this teaching approach and the philosophy behind it. Other research has shown that cooperative learning is a

All models of cooperative learning tie cognitive, social, and attitudinal learning outcomes to the quantity and quality of cooperative interactions that occur among group members.

blunt instrument, the efficacy of which depends as much on how it is implemented as on whether it is implemented. The next step is to assure that cooperative learning lives up to its promises.

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ABOUT THE AUTHORS

JOSEPH R. JENKINS (CEC #28), Professor, Special Education, College of Education, University of Washington, Seattle. **LAURENCE R. ANTIL** (CEC #414), Assistant Professor, Department of Special Education, Western Washington University, Bellingham. **SUSAN K. WAYNE**, deceased, University of Washington, Seattle. **PATRICIA F. VADASY**, Research Scientist, Washington Research Institute, Seattle.

Correspondence concerning this article may be addressed to Joseph R. Jenkins, College of Education, Box 353600, University of Washington, Seattle, WA 98195-3600. E-mail may be sent to jjenkins@u.washington.edu

This research was supported in part by the U.S. Department of Education, Office of Special Education Programs: Grant #67-0367 to the University of Washington, and Grant #H023R20019 to Washington Research Institute. Statements do not reflect official policy of any agency.

We are grateful to Molly Riley, who assisted with the interviews.

Manuscript received November 2001; accepted March 2002.

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