Cooperative Learning in an Elementary Physical Education Program

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Cooperative learning is an instructional format in which students work together in small, structured, heterogeneous groups to master content. The purpose of this study was to describe and interpret a teacher’s and the students’ experiences of cooperative learning in an elementary physical education program. A multiple-method design included interviews of a physical education teacher and 5th and 6th grade students, nonparticipant observation, field notes, and document analysis. Inductive analysis and constant comparison were used to analyze and organize the data throughout the research process. The findings suggest that the teacher and students held similar perceptions of the cooperative learning program. Themes emerged under four main categories: goals of the lessons; cooperative learning roles; benefits of cooperative learning; and implementation of cooperative learning. The teacher believed that the cooperative learning program allowed students of all ability levels to improve motor skills, develop social skills, work together as a team, help others improve their skills, and take responsibility for their own learning.

Many physical education teachers utilize cooperative activities, various forms of cooperative games, or some elements of cooperative learning in their PE programs, but few receive the full benefit of using a structured cooperative learning format. Teachers mistakenly believe that just because students work in teams in physical education, this is cooperative learning, when in reality many games are too competitive. In fact, even cooperative games cannot be considered cooperative learning unless certain elements are used. Despite the widespread use of certain cooperative learning elements in the gym, there has been little research on this approach in physical education. However, there is a growing body of research in general education reporting the benefits of cooperative learning (Cohen, 1994a; Johnson & Johnson, 1989; Kagan, 1990; Slavin, 1996). Cooperative learning is an instructional format in which students work together in structured, small, heterogeneous groups to master the content. They are not only responsible for learning the material but also for helping their group-mates learn. Thus cooperative learning can address both academic and social goals (Cohen, 1994a).

Within the various approaches to cooperative learning are five main elements needed for success: positive interdependence, individual accountability, promotive face-to-face interaction, interpersonal and small group skills, and group
processing. Positive interdependence refers to each group member learning to depend on the rest of the group while working together to complete the task. The next element, individual accountability, refers to the "answerability" of the task, such as the teacher finding out whether the student has completed it. Accountability takes many forms in teaching: verbal praise, recognition, monitoring students' behavior, a public acknowledgment, or grades and tests (Lund, 1992). Promotive face-to-face interaction is literally head-to-head discussion around the group in close proximity to each other. Interpersonal skills and small-group skills are developed through the tasks in which the students participate; these include listening, shared decision making, taking responsibility, learning to give and receive feedback, and learning to encourage each other. Group processing is the time allocated for discussing how well the group members achieve their goals and maintain effective working relationships.

There are four major approaches to cooperative learning: conceptual, structural, curricular, and complex instruction (Putnam, 1998). Each approach emphasizes the five elements of cooperative learning to varying degrees. A brief review of these approaches follows.

The conceptual approach is the only one to indicate that all five cooperative learning elements should be used to structure effective activities (Johnson & Johnson, 1989). Johnson, Johnson, and Johnson-Holubec (1998) also emphasize that interpersonal and small-group skills must be taught to students, and that students should be given the time to reflect (group processing) and provide feedback on social and academic goals. Generic or content-free forms of cooperative learning are used in a variety of subjects at different grade levels. To encourage positive interdependence, Johnson et al. (1998) suggest assigning each member complementary and interconnected roles such as reader, recorder, presenter, encourager of participation, and checker for understanding.

The structural approach to cooperative learning is based on different strategies that Kagan (1990) refers to as structures, such as Jig-Saw and Learning Teams. To ensure success when using the structural approach, Kagan (1992) highlighted two main elements, positive interdependence and individual accountability. The effective design of lessons requires using a variety of different structures, each chosen for the cognitive, physical, and social goals it best accomplishes within a given teaching situation or context.

The curricular approach shifts away from the content-free structural approach to grade-level-specific and subject-specific curricula (Slavin, 1990, 1996). In this highly formalized approach, group goals are defined as students working together to earn recognition, grades, rewards, and other indicators of group success. The focus is on team rewards, equal opportunity for success (group members work on material appropriate to their own ability level), and individual accountability.

The complex instruction approach focuses on group work as a strategy for enhancing student social and academic development (Cohen, 1994a). Of the four approaches, Cohen's (1994b) curricula and grade-level nonspecific approach is the least structured in its use of the cooperative learning elements. Complex instruction is a method of small-group learning that features open-ended discovery or a problem-solving task that emphasizes higher order thinking skills within a heterogeneous classroom. To achieve the group task and to shift the responsibility to the learner, students have roles such as material manager, harmonizer, and resource person.
Regardless of the specific approach to cooperative learning, it is necessary to know the advantages and disadvantages of this instructional format. Research has found that students working in small groups can master material presented by the teacher better than students working on their own (Cohen, 1994a; Johnson & Johnson, 1989; Slavin, 1990, 1996). Cooperative learning has also demonstrated benefits that include social outcomes such as positive intergroup relations, the ability to work collaboratively with others, and the development of self-esteem (Cohen, 1994a; Johnson & Johnson, 1989; Kagan, 1990; Slavin, 1990, 1996). Johnson and Johnson (1989) conducted a meta-analysis on research on student achievement examining 323 studies and concluded that achievement and productivity are greater when students work cooperatively rather than competitively or individually.

Slavin (1990) reported similar results when he reviewed 68 studies on cooperative learning and achievement. Slavin (1996) emphasized the importance of group rewards based on individual accountability after reviewing 52 cooperative learning research studies. In all, 78% of studies using group goals and individual accountability found significantly positive effects and no significantly negative effects. Slavin (1996) concluded that students in groups may willingly interact with one another and help each other, but without structure and accountability this interaction and help may turn into just giving each other answers or doing each other's work.

Slavin (1990) suggested that this was the major pitfall of cooperative learning; students could copy from or rely on other students to do their share of the work. This would result in "a 'free rider' effect, in which some group members do all or most of the work (and learning) while others go along for the ride" (p. 16). Slavin (1990) and Johnson and Johnson (1989) suggested that each group member be responsible for a unique part of the group task (individual accountability), and that each student's part be essential for the group's completion of the task (positive interdependence). Leading proponents of cooperative learning (Cohen, 1994b; Johnson et al., 1998; Kagan, 1992; Slavin, 1996) have cited several other potential problems to implementing cooperative learning in school programs: the balance between traditional classroom activities and cooperative learning activities; interpersonal problems within student groups; lack of student participation; and inadequate student group processing skills. They recommended careful grouping of students, appropriate social interactions, individual accountability, and frequent monitoring of students to check for total team involvement. This minimizes problems such as free rides or intergroup conflicts.

Little research has been conducted in physical education on the efficacy of cooperative learning. However, several publications have promoted the use of cooperative learning in physical education (Dunn & Wilson, 1991; Grineski, 1993, 1996; Underwood & Williams, 1991). Grineski (1989) has found that cooperative learning can enhance physical fitness and social interactions for elementary, kindergarten, and preschool children. Smith, Markley, and Goc Karp (1997) explored the use of cooperative learning and its effect on social enhancement and participation of 3rd grade students in PE classes. They reported that sociometric ratings for target students who scored low prior to a 6-week cooperative learning unit improved. In addition, post-unit teacher assessment scores indicated that student social reasoning skills, interaction, and social participation improved. Johnson, Bjorkland, and Krotee (1984) studied the achievement and attitudinal effects of
three types of interactions with university students learning the golf skill of putting: cooperative, competitive, and individualistic. They concluded that when cooperative interaction is the dominant goal structure, not only will achievement tend to be affected positively but the attitudes of the students toward the instructor, the class, and each other will also tend to be more positive.

In physical education the Sport Education Model can be seen as a related instructional model to cooperative learning. This model has common characteristics with the curricular approach to cooperative learning (Slavin, 1996). Originally presented by Siedentop, Mand, and Taggart (1986) and elaborated on by Siedentop (1994), the Sport Education Model is proposed as an alternative to the multi-activity programs that dominate physical education curricula. Its characteristics include a longer playing season, player membership, record keeping, and a festive competitive atmosphere with a culminating event. Sport Education promotes sports competition in a cooperative framework.

Research on the Sport Education Model has reported that it develops students’ motor skills, tactics, and social skills (Alexander, Taggart, & Thorpe, 1996; Carlson & Hastie, 1997; Grant, 1992; Hastie, 1996, 1998; Pope & Grant, 1996). Grant (1992) reported several positive outcomes from the Sport Education Model: students accepted greater responsibility; low-skilled students learned more; participation and attendance were higher; and all students contributed to their teams. In addition, Carlson and Hastie (1997) and Hastie (1996, 1998) found a strong preference for student coaches over teacher instruction. The characteristics of the Sport Education Model which are similar to cooperative learning approaches are that students work in groups or small teams, have roles, and provide feedback to each other, and the teams have predefined goals and positive interdependence.

Sport for Peace, another reform in physical education which is based on the Sport Education Model, was developed as a curriculum for inner-city high schools (Ennis et al., 1999). Sport for Peace uses small groups or teams, an extended playing season, assigned student roles, and individuals cooperating within a team to compete against other teams. The findings indicate that engagement and participation increased within a class community. This curricular structure enhanced both high- and low-skilled boys’ and girls’ responsibility, trust, and respect for each other.

Due to the paucity of research on teaching cooperative learning in physical education, a qualitative study of cooperative learning in a PE program was initiated. As suggested by Rovegno and Bandhauer (1997), context-specific, field-based research was conducted to better understand the factors of the school environment. Ironically, in school-based research, the two groups most intimately involved in the day-to-day function of education—teachers and students—have rarely been asked by researchers for their thoughts (Cohn & Kottkamp, 1993). The purpose of this study was to describe and interpret the teacher’s and students’ experiences of cooperative learning in an elementary physical education program.

**Method**

The data for this paper came from a larger multiple-methods qualitative research study used to investigate the implementation of cooperative learning in an elementary physical education program (Dyson & Harper, 1997). The data included interviewing the physical education teacher, students, principal, and classroom
teachers; nonparticipant observation; field notes; and documents during the year-
long study of this physical education program.

Participants and Settings

The focus for this study was two Grade 5/6 classes and their physical education teacher at “Maplewood” Elementary School in Montreal. Pseudonyms were used for the school, teacher, and students in the study. Informed consent was obtained from all the participants, and appropriate human subjects procedures were followed. Maplewood is located in a middle class community and has a culturally diverse population made up mostly of Caucasian students and a small percentage of Asian and African-Canadian students. With support from the school district, many teachers had attended school workshops on cooperative learning and most Maplewood teachers had embraced the use of cooperative learning strategies.

“Margaret MacDonald” had taught physical education to these students since kindergarten. The students had one 30-minute and one 45-minute lesson each week. Twenty-four students were observed during an 8-lesson volleyball unit (12 boys and 12 girls), and 23 students were observed during an 8-lesson basketball unit (13 boys and 10 girls). Both classes had limited experience with cooperative learning in their physical education classes. Margaret believed the basketball class had slightly higher skill levels but also more behavior control problems.

Margaret had been teaching physical education for 11 years and was considered one of the most effective physical educators in the local area according to her principal, university faculty, other physical educators, and student-teachers. She had attended two workshops on cooperative learning and tried to include the five core elements in her program—positive interdependence, individual accountability, promotive face-to-face interaction, interpersonal and small-group skills, and group processing.

Margaret used a cooperative learning format that was most similar to the conceptual approach (Johnson et al., 1998) and complex instruction approach (Cohen, 1994a). She used Learning Teams (Grineski, 1996) as a cooperative learning structure. Students in small groups were assigned to various roles such as recorder, trainer, encourager, checker, and coach. Within each group the assigned roles changed regularly. Groups were encouraged to take responsibility for reciprocal instruction by modeling for and teaching others. The classroom teachers used similar cooperative learning groups, so students were familiar with this format. Students were given written task sheets explaining the skills, which were then checked by other group members and/or the teacher.

Data Collection

The main data sources for this study were interviews with the physical education teacher and students, and nonparticipant observation of all lessons. Data were also collected through field notes, informal interviews, and document analysis. In addition, the principal and classroom teachers for these two classes were informally interviewed to provide the researcher with a broader understanding of the school program. Both classroom teachers used cooperative learning in their teaching.

Margaret was informally interviewed before and after each lesson. She was also interviewed informally at other times to clarify events as they occurred in
context. The brief interviews before each lesson were aimed at determining Margaret’s specific goals for that lesson. The open-ended interviews after each lesson lasted approximately 20 to 30 minutes and sought her perceptions of the lessons. An in-depth structured interview was conducted with Margaret at the beginning, after the volleyball unit, and at the end of the study. The purpose of the first interview was to obtain biographical data, including information on her experiences with cooperative learning, workshops, and related experiences. The other two interviews explored her goals, perceptions, and concerns about the implementation of cooperative learning in her volleyball and basketball unit, and future implications for her PE program. These interviews lasted 80 to 110 minutes.

Student interviews involved groups of 3 or 4 students after each lesson for approximately 15 minutes (Stewart & Shamdasani, 1990). Students are central to the education process but are rarely consulted, yet they can provide valuable insights into the curriculum. Graham’s (1995) “student voices” monograph has given us a strong rationale for including student interview data. All students in both classes were interviewed at least once. Interviews sought the students’ perceptions of lessons and their beliefs about Margaret’s purposes and goals for the lessons. Examples of interview questions were: What were your goals for the lesson? If you were the teacher, what would you change next time you taught the lesson, if anything? These were followed by questions to further probe students’ responses.

The study also involved nonparticipant observation of the two Grade 5/6 classes. The investigator took field notes during each physical education class and during or after observations in the classrooms, playground, or staff room at Maplewood. An organized method of taking and organizing field notes was implemented (Schatzman & Strauss, 1973). The teacher’s lesson plans, unit plans, the school district guidelines, and other written documents related to the program were collected and analyzed by reading and re-reading the documents and taking relevant notations from that material.

Data Analysis

Findings were grounded in a specific context, that is, the themes emerging from these data were based on the day-to-day events that occurred at the school. This interpretive approach was used in an attempt to accurately describe and interpret the teacher’s and students’ voices.

Inductive analysis and constant comparison were used to analyze and organize the data throughout the research process (Denzin & Lincoln, 1994). First, the data were organized into manageable and accessible records. Then a category system of analysis was derived inductively. The data were read and re-read to find concepts that arose frequently; these were then combined to form themes or subthemes. Finally, the narratives were written incorporating the teacher and student interviews and field notes. Field notes included observational notes, informal interviews, and document analysis. The teacher’s and students’ perceptions and the field notes were merged into one document. This provided triangulation of data sources that strengthens the findings.

Data Trustworthiness

Trustworthiness is the degree to which the findings are dependable, credible, and transferable (Lincoln & Guba, 1985). An attempt was made to articulate
the investigator's bias by using a structured method of taking field notes (Schatzman & Strauss, 1973). To combat reactivity, the investigator spent extended periods of time at the school so that this continual presence would reduce possible distortions or reactivity in the school setting.

Confirmability was established by triangulation, member checks, and peer debriefing (Denzin & Lincoln, 1994; LeCompte & Preissle, 1993; Lincoln & Guba, 1985). Triangulation of source/respondent was done to strengthen the perspective or provide disconfirming evidence of the interviews with the physical education teacher and students. Methodological triangulation (interviews, field observations, and document analysis) allowed a number of data sources to be cross-checked.

Two member checks were carried out. The first consisted of returning all interview transcripts to the teacher so she could modify or clarify any aspect of the interviews. Only editorial, grammatical, and semantic changes were made. The second member check involved the same teacher reading a draft of the manuscript to verify interpretations. No substantive changes were suggested.

Peer debriefing was also used to assist in analyzing and interpreting the data. There were two main peer debriefers who challenged interpretations of the data (Lincoln & Guba, 1985). A search for disconfirming evidence was conducted throughout the data analysis for negative cases that could disprove themes or provide an alternative viewpoint.

Results and Discussion

Themes are represented by quotes from interviews and field notes. Margaret's and the students' voices related to cooperative learning are presented to foreground a discussion of pertinent literature. Themes emerged under four major categories: goals of the lessons, cooperative learning roles, benefits of cooperative learning, and the implementation of cooperative learning.

Goals of the Lessons

Commitment to Motor Skill and Social Skill Development. Margaret's main goals for the program were for students to develop psychomotor skills and social skills. She described a motor skill goal and a cooperative goal for every lesson.

Recent publications have also referred to teaching goals in the affective domain of learning. In addition to motor skill goals, teachers have reported goals of cooperation, teamwork, and involvement (Carlson & Hastie, 1997; Ennis, 1994; Ennis et al., 1999; Hastie, 1998), and social responsibility (Cothran & Ennis, 1998; Hellison, 1996).

The majority of Maplewood students reported that their goals were similar to Margaret's. When students talked about lessons, both content achievements and cooperative successes were important. Isabelle commented, "Everybody on my team got their lay-ups really well and we were using our jobs. Brian was the coach and he coached us, and I was the recorder and I read the cards." Julia recognized her teacher's dual goals for the volleyball unit: "[I think the teacher's goals were] to get us to learn how to play the game the proper way. And to encourage, and to keep your role."

Emily stated that improved skill had led to her increased confidence, enjoyment, and participation:
I remember last year I used to not really participate in the games, because I was afraid I’d mess up, but this year I like participating more and I like having the ball and shooting. I was just always afraid I’d mess up, and now I’m not so afraid... I’m getting better in the games. And also I used to not get passed to, and now I can do everything better than I used to, so now I get passed to.

In an alternative curriculum of Project Adventure, Dyson (1995) also found that motor skills and cooperative skills were valued by the students and their teachers. Shared teacher and student goals were also found by Carlson and Hastie (1997) and Hastie (1998) in Sport Education Programs. However, research on more traditional PE programs has found that students and teacher often have incongruent curricular goals (Cothran & Ennis, 1998).

Cooperative Learning Aids Motor Skill Development. For Margaret, motor skill goals and cooperative goals were not independent; she believed the cooperative learning format aided students’ skill development. Late in the volleyball unit she commented on the complex skill of spiking: "I think they were pretty good at getting the spike worked out, getting the lead-up to it, getting the position, knowing that they had to jump up straight. I attributed that to going over it in a small group." Margaret felt that cooperative learning benefited students’ skill development in many ways, such as the analysis of group members’ performance, the trusting atmosphere it created, and the increased accountability. In their cooperative groups, students learned to observe other members during skill practice to analyze their performance and suggest improvements (field notes). Margaret believed this ability was an important part of volleyball skill development. “When I went around to different groups, they were starting to analyze one another and if somebody wasn’t getting it high enough, they were starting to help.” For students, analyzing the skill of group members had an additional benefit. When they watched others in their group, they reported that it often helped them improve their own skills. James said, “Sometimes if someone else on your team also makes a mistake, it shows you ‘Oh, maybe that’s what I was doing and that’s why the ball’s not going over here.’”

Margaret believed skill development was also enhanced by cooperative learning because of the atmosphere of respect and increased accountability it created:

With cooperative learning, hopefully you get to a point where everybody is developing their skill and that it’s a comfortable place to practice and to make mistakes. With the roles, then each person is accountable to the group for helping, for having a specific role to help one another. So they’re accountable to one another. And then the group is accountable for having achieved a certain task.

This increased accountability involved students monitoring each other rather than the teacher being the only source of feedback. As Margaret said,

I think the difference with [cooperative learning] and traditional teaching is that [in traditional teaching] everybody just scatters and they do their own thing and there’s really no accountability... The problem is often students are not checked; the teacher can’t check 30 kids [in one class period].
To facilitate accountability, Margaret used a checklist for skill performance that the group’s checker could use to monitor group members. Appropriate learning cues for the skill were listed on the checklist. A summary of field notes indicated that the groups’ checkers followed through with this responsibility. In addition, she often assessed students’ performance: “I just randomly picked one person to demonstrate and one person to talk about it and they were able to do that.”

The notion of individual accountability has been emphasized as a critical element in successful cooperative learning programs (Johnson et al., 1998; Kagan, 1992; Slavin, 1996). Johnson et al. (1998) have suggested that students can observe each other with checklists to record whether other students contribute ideas, encourage group members, or summarize the materials. In addition, Slavin (1996) has suggested that students’ observation of each other provides an opportunity for reinforcement of the content.

Cooperative Learning Roles

Cohen (1994a) and Johnson and Johnson (1989) have recommended increasing positive interdependence and participation by assigning specific roles to group members. Giving group members specific and complementary roles increases interdependence by defining expectations and responsibilities within the group. Students’ cooperative learning roles were an integral part of Margaret’s use of cooperative learning. Each student had a specific responsibility for helping the group during skill practice and games. There were six assigned roles that the students rotated during the unit: (1) the demonstrator demonstrated the task; (2) the coach provided feedback to the group members to improve their performance; (3) the checker verified that every student completed the task; (4) the recorder wrote down each student’s performance; (5) the encourager motivated everyone to be involved; and (6) the trainer organized the group and ran the warm-up. One student, Jess, explained the value of having assigned roles: “[If we didn’t have specific roles] you’d probably do some of them, but you wouldn’t think about it as much and do it as much. When you know you’re supposed to encourage, you encourage more, or coach more, or any of them.”

Field notes described students maintaining their roles and completing their tasks. A field note also read: “To maximize the impact of roles, Margaret was continually on the move in her gymnasium, observing and interacting with the students.” This instructional format was similar to what has been represented in the Sport Education Model (Siedentop, 1994) (Carlson & Hastie, 1997; Hastie, 1996, 1998) and in Sport for Peace (Ennis et al., 1999). Research by Carlson and Hastie (1997), Hastie (1998), and Pope and Grant (1996) demonstrated that students were successful in assigned roles such as coach, player, referee, statistician, and journalist. These students also reported that they were challenged but enjoyed their roles as duty teams members.

Although all roles were seen as vital, the roles of coach and encourager were emphasized by Margaret and commented on most frequently by the students. The following data presents the student and teacher perceptions of the role of coach and the role of encourager.

Coach. Nicholas explained the role of the coach during skill practice in a volleyball lesson:
If a person makes a mistake, the coach corrects the person’s mistake. . . When James was a coach, he was a really good coach. He knows how to do it. [If someone made a mistake] he’d just say “It’s okay, just next time, do this, do that.”

Chris added that he thought the “coaches are like a back-up. They help you as well as the teacher.” Students believed the coaches helped them improve their skills in the basketball and volleyball units. Kelly said, “Angela helped me when I was pivoting and I was shooting toward the basket and she told me to shoot it more up, and it worked.”

Julia believed that if the coach helped improve students’ skill level, this would also raise their self-esteem. “The coach kind of has an important role, because if you make a mistake, he can correct it. Or he can help you to get better, so you don’t feel bad about yourself and then you’ll never do that again.” When asked about having someone their own age giving suggestions, several students commented:

Emily: [I like it] because you kind of feel that they understand you.

Alby: You can explain it more from a kid’s point of view. You can help your friend. It’s easier than when the teacher is trying to help you ‘cause your friend knows how you work.”

These findings are in line with Carlson and Hastie (1997) and Hastie (1996), who found that students participating in the Sport Education Model believed their coaches had knowledge and a strong work ethic and preferred to have a student coach rather than teacher instruction. In a similar manner, Ennis et al. (1999) reported that coaches enjoyed teaching their teammates and “learned more than in previous physical education classes structured using the traditional format” (p. 283).

Encourager. The other role that students commented on most frequently was that of encourager. If students viewed the coach as primarily concerned with skill improvement, they saw the encourager as primarily concerned with social and affective goals. Greg gave his definition of the encourager:

I was the encourager, so I had to encourage people. Like if someone messes up, I wasn’t going to say “You stupid idiot, why did you do that?” I have to say “Oh, it’s okay. There’s always other times.” If they do something good, you usually praise them for it. . . It’s fun to be an encourager.

Margaret expected all students to encourage their teammates, but the team’s encourager was supposed to remind others to encourage and to assure that somebody on the team was encouraging. At the beginning of the unit she had students learn this skill by focusing on encouraging one person. She wanted students to encourage each other with specific skill feedback, not just general praise:

To me there’s never enough encouraging. . . I would still try to figure out a way to get them to do that more. I said to them that [the team] needed to pick out two things [that each person is doing correctly] and one thing that they needed to work on, like I gave them examples of maybe somebody’s arms are straight or their knees were bent and I wanted them to say things like that to each other.
Nicholas explained the benefit of encouraging and recognized that this atmosphere of respect could lead to increased confidence and increased participation. "[If people don’t encourage] they would lose their confidence and all, and then they’ll try not to get the ball." Jessica echoed the sentiment that encouraging created a positive environment even when students made mistakes: "I thought [the best part] was the way the team cheered the rest of the team on. Like, even when we made mistakes, they’d say ‘That’s okay, just keep on trying and you’ll get it.’" Students did not always encourage each other. Donna realized that some individuals had difficulty taking on the role of encourager:

We need to work on our encouragement, because if the ball just dropped and we did something wrong, someone would yell "Oh, you stupid idiot, you’re doing it all wrong." The person who was the encourager on my team today didn’t exactly encourage that much and that set a bad example for the rest of the team.

Benefits of Cooperative Learning

Margaret and her students thought that in addition to skill development and increased encouraging, the cooperative learning structure had several other benefits. They believed that assigned roles such as coach or encourager helped students work together. Heather reported that using cooperative learning strategies invited students to care about their teammates:

If you didn’t have an assigned job, I don’t think they would think of anybody else but themselves... It’s better because it makes people think more—and not just thinking of yourself, because before in volleyball nobody would help anybody else.

Emily added, "If we put our minds together as a team, we can think of a strategy." Other students commented on long-term benefits. James said, "It’s going to help us all through life because at work if you can’t work with other people, you’re never going to get anywhere." For Margaret, another benefit of cooperative learning was the development of a sense of responsibility for the group: "I think kids really do learn to work together as groups. They learn to care about what somebody else is doing, they learn that they’ve got some responsibility towards other people."

The classroom teachers also saw benefits of cooperative learning in the physical education program; they believed students learned to work together, to understand people’s differences, and to encourage each other (field notes). Physical education provided a physical medium for students to use cooperative learning, and this reinforced the cooperative skills learned in their classroom.

However, just because students were assigned to a specific role and a specific task did not assure that they would always work together to achieve a goal. As Amy explained:

There were times in the lesson when my team just wasn’t cooperating, wasn’t listening. It’s hard to work when there’s a couple of people wandering off... [But] the encourager on our team did a good job of telling them that they’re fine, we can just play and they did well.
This example illustrates that when using cooperative learning, a potential problem is the slow development of interpersonal skills within student groups (Cohen, 1994b; Johnson et al., 1998; Kagan, 1992; Slavin, 1990).

**Low- and High-Skilled Students.** These benefits of cooperative learning were not limited to any particular group of students. Students of various ability levels and personalities seemed to gain from this learning format. It is important to note that those who were less skilled than others and therefore normally reluctant to participate were not marginalized in the cooperative learning format. In fact, several low-skilled students commented that they felt more included in the cooperative learning lessons:

Isabelle: Well, you feel important because you have a job.

Justin: I think the same thing. Like you’re not left out. Your team needs you for stuff.

In addition, highly skilled students did not seem disadvantaged by the cooperative learning format, which is frequently a concern for educators (Johnson & Johnson, 1989; Slavin, 1996). Alby, the most highly skilled student in the class, said, “[Cooperative learning helps] in my skills or in helping people... It gives me better leader skills... I guess it’s better this way where we have the coach and trainer because everybody knows what they’re supposed to do.” Similarly, low-skilled students in the Sport for Peace program (Ennis et al., 1999) reported that coaches were able to help them. In the Sport Education Model (Carlson & Hastie, 1997; Grant, 1992; Hastie, 1998), low-skilled students reported feelings of importance and value as team members and commented positively on their skill development. Cooperative learning has also been successful for high- and low-skilled students in other content areas (Cohen, 1994a). In a 2-year study using cooperative learning in the general education setting, Stevens and Slavin (1995) found that high, average, and low achievers all achieved better than control groups in reading and writing tasks.

**Working Together as a Team.** Margaret believed the cooperative learning element of positive interdependence was demonstrated by students’ ability to work together in their groups to complete a task and to play as a team in a game situation. Team sports by their very nature require positive interdependence to achieve a goal; to win, all members of a team must work together, whether it be rowing in unison, defending a goal, or holding up a rugby scrum. Cohen (1994a) has advocated students working in groups using one another as resources to complete the task. Margaret was satisfied that over time students developed relationships that allowed them to play as a team:

I think they improved a lot from the beginning to the end, overall in their ability to play. And in their confidence. I did like how they came together as a group. Each team really did know each other... My feeling was that they did play together, they knew one another’s ability levels, they had developed some respect.

Students also valued this ability to use the whole team, and often saw it in opposition to selfish domination by a few players, or what they called “ball-hogging.” Julia said:
Cooperation is just like you have to work with the team, you have to discuss what you’re going to do. And then you have to pass in the team and get the team working together, not just one person doing it all by himself. You have to work together as a team.

Teamwork has also been reported as a goal of teachers in traditional physical education programs (Ennis, 1994). In addition, both in the Sport for Peace and the Sport Education literature, students discussed the importance of teamwork (Carlson & Hastie, 1997; Ennis et al., 1999; Hastie, 1998).

The Implementation of Cooperative Learning

Shifting Responsibility. Using the cooperative learning format allowed Margaret to shift some responsibility for learning from herself as the teacher to the students. In this structure, much instruction and feedback comes from other students rather than solely from the teacher. After one lesson Margaret said, “I felt relaxed, so that meant I think the kids were working.” To facilitate this shift of responsibility, she structured lessons so students could take a dominant role in their own learning by deciding what skills they needed to practice:

[My goal was] to have the kids decide what was important to review before the game, what skills they thought they needed to work on. And to set up their own drills. And to have them work out their strategy using everybody’s strengths in the game.

Students were able to decide which skills needed to be practiced and solve some of their own problems in game situations. At the end of the basketball unit when Margaret asked the students to work on two things for improving their team, she noticed:

Two groups wanted to practice guarding and passing. Greg’s team knew they wanted to do lay-ups; they needed a little bit of help getting set up. They also decided that they should have a 2-minute technical if people were arguing with the Ref and they did seem to calm down in the second game. I thought that it was good that the solution came from them.

A student named Kelly noted the benefit in this shift in responsibility. “When you’re with a team, you just have to wait for some of your teammates and help them, instead of the teacher helping everyone individually.”

Many physical educators believe in the development of student responsibility as an important goal in their programs (Cothran & Ennis, 1998; Ennis, 1994; Hellison, 1996). However, their enacted curriculum can fall short of providing a clear and consistent social responsibility message to students (Cothran & Ennis, 1998). This study suggested that cooperative learning may provide a structure for increased student responsibility.

Identifying Students’ Strengths and Using Them in a Strategy. Another way in which Margaret shifted responsibility to the students was by asking them to identify the strengths of their group members and to devise a strategy employing those strengths. Margaret believed it was important to build the students’ confidence by having their strengths identified by other members of the group. ‘They
can really identify their strengths and weaknesses. Everybody gets told that they’re good at something. That was positive. The cooperative learning is getting used in developing the group as a team.” Later in the unit Margaret wanted students to devise strategies for the game that would capitalize on students’ strengths:

I really liked the way the teams developed. I really liked the way they identified people’s roles. They were positive; they said, “You’re going to do this and this.” Everybody knew what their strength was and they used them as a team.

The practice of students developing their own skills and strategies is an example of peer-mediated teaching in which students use each other as a resource (Cohen, 1994a).

Students were able to articulate their strategy using group members’ strengths. Alby reported, “Our strategy was to do short passes because long passes usually get intercepted, do more lay-ups, and there are two people on our team who are good at set shots instead of lay-ups.” However, Kelly acknowledged that their strategies weren’t always put into practice effectively: “People weren’t listening and they weren’t using our strong points. . . If people would have used what we had said were our strong points, we probably would have had a better team and it would have worked better.” Kelly addresses a valid concern with cooperative learning—that group interactions do not always go according to plan.

*The Teacher’s Concerns of Implementing Cooperative Learning.* Despite the many benefits Margaret believed cooperative learning has, she constantly reflected on and tried to improve its implementation. This process of reflection can “deepen understandings of the process of instruction and of the products created within the teaching and learning process” (Louis, Marks, & Kruse, 1996, p. 761).

One of her concerns was whether the students were giving each other accurate feedback:

I took the coaches aside and I went over the technique of bumping with them so they could teach their kids. And I went around and I thought they were teaching it pretty well. But then it’s a case of, you wonder if they’re going to hit every point you’d wanted to hit.

In addition, she frequently planned to alter her instruction. “In the next lesson I will emphasize face-to-face [interaction] at the beginning. . . I think I need to be more specific with that.” During the unit Margaret also had to revise the responsibilities of certain roles:

I tried to make it this time that the coach wasn’t doing everything. Before, I had the coach demonstrating and saying what it was. I tried to make the checker’s job more specific, that they were watching people and saying to the coach “This person needs help.”

Margaret also questioned what her response should be when the implementation of cooperative learning faltered for a particular student:

Then you get a kid like Nick who says, “Well, I know how to do this” and he just went off by himself. So, then it was sort of a call as to whether I sit them
all down and say “Okay, what are we going to do to make this group work?”... He came around towards the end, but only if I was there to keep mentioning it to him.

Proponents of cooperative learning have suggested that this off-task behavior is one of the reasons why teachers need to monitor and interact with groups to facilitate the implementation of cooperative learning (Cohen, 1994b; Johnson et al., 1998; Kagan, 1992; Slavin, 1996). This notion of active supervision is not a new concept to effective teachers. Another part of this reflection process was Margaret’s questioning the best use of time. She believed that during some parts of the lesson, time could be used more efficiently without cooperative learning:

I was going to have them set up the warm-up game, but then I thought no, I’ll do it because it was going to be faster. And also, if you use it [cooperative learning] for every single activity in the class, then it will wear out with them.

Margaret struggled with the fact that setting up cooperative learning took time from physical activity at the beginning of the basketball unit: “I always have a hard time when we’re taking a long time, even though you have to the first day. I always start thinking again about sitting versus activity. It always puts me on edge a little bit that we’re taking time.”

**Summary and Conclusion**

Margaret believed that cooperative learning led to psychomotor and social skill improvement. This is consistent with the emphasis on educational and social goals reported in the complex instruction approach to cooperative learning (Cohen, 1994a) and findings from Sport Education research (Alexander et al., 1996; Carlson & Hastie, 1997; Grant, 1992; Hastie, 1996, 1998). Students also recognized their teacher’s dual goals of skill and social development and reported similar goals themselves. Margaret believed the cooperative learning format led to the development of motor skills because students learned to analyze others and give specific skill feedback; it also created a trusting atmosphere in which to learn and make mistakes; and students learned to care about and take responsibility for others’ skill improvement. Similar to findings in the Sport Education Model (Carlson & Hastie, 1997; Hastie, 1996, 1998), students said that coaches helped them improve their skills, that they liked learning from their peers, and that the cooperative learning format motivated them to care about and help each other improve. In addition to being held accountable for helping group members improve their skills, students were accountable in their group for their behavior and for performing a specific role. The students were held accountable in several ways: by the group checker, by Margaret monitoring their roles, by specific skill feedback, and by students monitoring each others’ skills.

In addition to motor skill improvement, Margaret and her students reported benefits in the development of social skill. Students reported that the encouragement of teammates helped build confidence and increased their desire to participate even if they made mistakes. Using the cooperative learning format also
permitted Margaret to shift responsibility for learning from herself to the students, a valued concept in much educational reform (Cohen, 1994b; Hellison, 1996). This student involvement in decision making and group processing enhanced students’ sense of ownership. Low-skilled students also commented that they felt more included and more valued using a cooperative learning format. As recommended by the leading proponents of cooperative learning (Cohen, 1994a; Johnson & Johnson, 1989; Kagan, 1990; Slavin, 1996), Margaret carefully grouped students, encouraged appropriate social behavior, held students accountable, and frequently monitored and interacted with students.

In the Maplewood Elementary physical education program, students and teacher gained many of the benefits of cooperative learning. The students worked together, learned together, and helped each other learn. They knew their task and their role and were expected to contribute to the group. This program illustrates that cooperative learning can be a powerful instructional format for students to attain both motor skills and social goals in physical education.

References


