

CO-OPERATIVE LEARNING IN A HIGH SCHOOL PHYSICAL EDUCATION PROGRAMME

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ABSTRACT *The purpose of this study was to describe and interpret the teacher's and students' experiences of co-operative learning in a high school setting. A multiple-method design included interviews of the physical education teacher and eighth (year 9) and eleventh grade (year 12) students, nonparticipant observation, field notes, and document analysis. Inductive analysis and constant comparison were used to analyse and organise the data throughout the research process (Denzin & Lincoln, 1994). The teacher believed co-operative learning helped her students meet the following goals: developing motor skills, developing game strategies, actively participating, respecting one's peers, accepting responsibility, improving communication skills, and having fun. Students reported that co-operative learning encouraged learning motor skills, participating, communicating, having fun and co-operating.*

INTRODUCTION

Co-operative learning has been identified as a possible alternative to other instructional formats in physical education, but there has been little research conducted in this area. In co-operative learning students work together in structured, small, heterogeneous groups to master material initially presented by the teacher. In this student-centered approach students are not only responsible for learning the material themselves, but also for helping their group-mates learn. There is an extensive body of research reporting the benefits of co-operative learning in general education (Cohen, 1994a; Johnson & Johnson, 1989; Kagan, 1990; Slavin, 1990, 1996). Slavin (1987) has argued that "achievement effects have been equivalent for high, average, and low achievers, for boys and girls, and for students of various ethnic backgrounds" (p. 10). In addition to high achievement, other positive interpersonal benefits of co-operative learning include positive inter-group relations, the ability to work with others, and the development of self-esteem (Cohen, 1994a; Johnson & Johnson, 1989; Slavin, 1990, 1996). In the current New Zealand Health and Physical Education Curriculum (Ministry of Education, 1999) one of the stated aims is "develop understandings, skills, and attitudes that enhance interactions and relationships with other people" (p. 7). Co-operative learning is a holistic or "Hauora" (total well-being) approach to teaching and learning and is recommended as an instructional strategy to enhance these specific student learning processes.

Within the various approaches to co-operative learning there are five main elements necessary 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 and 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 to discuss how well the group members achieved their goals and maintained effective working relationships. It is similar to the notion of processing or debriefing in Project Adventure (Project Adventure, 1991).

There are four major approaches to co-operative learning: conceptual, curricular, structural, and complex instruction. A brief review of these extensive and complex approaches follows. Johnson and Johnson (1989) have developed the conceptual approach which is based on the premise that teachers can learn the key elements of structuring effective co-operative learning activities. Johnson, Johnson, and Johnson-Holubec (1998) argue that all five co-operative learning elements are essential. They also emphasise that interpersonal and small group skills need to be taught to students, and that students should be provided with the time to reflect (group processing) and be provided with feedback on social and academic goals. Generic or content-free forms of co-operative learning are used in a variety of subjects and at different grade levels. To encourage positive interdependence, Johnson, Johnson, and Johnson-Holubec (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 co-operative learning is based on different teaching strategies that Kagan (1992) has formalised into different structures such as Jig-saw or Think-Pair-Share. He has argued that each structure has a distinct domain of usefulness and can therefore more effectively reach some, but not other, cognitive, physical, and social goals. Therefore, the effective design of the lesson requires using a variety of different structures, each chosen for the goals it best accomplishes. To ensure success when using the structural approach, Kagan (1992) has emphasised two main elements, positive interdependence and individual accountability.

Slavin's (1990) curricular approach differs from the content-free structural approach and is a grade level-specific and subject-specific curricula. In Slavin's (1996) highly structured approach he defined group goals 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 (students work on material appropriate to their own ability level), and individual accountability. Slavin (1996) has found that co-operative learning can be an effective means of increasing student achievement, but only if the essential elements of specific group goals and individual accountability are integrated into the co-operative learning methodology.

Cohen's (1994b) complex instruction approach focuses on group work as a strategy for enhancing student social and academic development. Complex instruction is a method of small group learning that features open-ended discovery that emphasises higher order thinking skills. Of the four approaches, Cohen's approach is the least structured in her adherence to a formalised prescription of co-operative learning. Her premise is that group work is a powerful method for conceptual learning by creating problem-solving situations

to facilitate intellectual and social goals. Group roles such as material manager, harmoniser, and resource person are assigned to students. The teacher's role is to facilitate the group work and emphasise that all students' skills and abilities are important and relevant for completing the task (positive interdependence).

Several non-empirical publications have promoted the use of co-operative learning in physical education (Dunn & Wilson, 1991; Grineski, 1993, 1996; Underwood & Williams, 1991). Although there has been little research in physical education, some benefits of co-operative learning have been published. Research by Grineski (1989) has reported that co-operative learning can enhance physical fitness and social interactions for elementary, kindergarten, and pre-school children. Findings suggested that pre-school children involved in co-operative activities had higher rates of positive physical contact than free play, especially for children with disabilities. Smith, Markley, and Goc Karp (1997) explored the process of co-operative learning and its effect on social enhancement and participation of third grade students in a physical education setting. They reported that socio-metric ratings improved for target students scoring low prior to a six-week co-operative learning unit. In addition, post-unit teacher assessment scores indicated that student social reasoning skills, interaction, and social participation improved. Studying fifth and sixth grade students during a volleyball and basketball unit, Dyson (in press) found that students improved motor skills, developed social skills, worked together as a team, helped others improve their skills, and took responsibility for their own learning. Johnson, Bjorkland and Krotee (1984) studied the achievement and attitudinal effects of three types of interactions with university students when learning the golf skill of putting: co-operative, competitive, and individual. They concluded that when co-operative 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 co-operative learning. Originally presented by Siedentop, Mand, and Taggart (1986) and elaborated on by Siedentop (1994), the Sport Education Model is proposed to replace the multi-activity programmes that dominate physical education curricula. Its characteristics are a longer playing season, player membership, record keeping, and a festive atmosphere with a culminating event. Grant (1992) reported these positive outcomes from the Sport Education Model: students accepted greater responsibility, low skilled students learned more, participation and attendance were higher, and teams became more co-operative. Sport Education promotes sports competition within a co-operative framework. Typical roles are team leader or coach, player, statistician, and journalist. Research on the Sport Education Model has found that this method develops students' motor skills and strategies as well as provides for social skill development (Alexander, Taggart & Thorpe, 1996; Carlson & Hastie, 1997; Grant, 1992; Hastie, 1996, 1998; Pope & Grant, 1996). It appears that the Sport Education Model is similar to co-operative learning approaches in that students work in groups or small-sided teams, have roles, provide feedback to each other, and teams have predefined goals and positive interdependence.

Due to the paucity of research on teaching co-operative learning in physical education, a qualitative study of co-operative learning in a high school physical education programme was initiated. To better understand the factors of the school environment, context-specific, field-based research was used as suggested by Fullan (1993) and Rovegno and Bandhauer (1997). Ironically, the two groups most

intimately involved in the day-to-day function of education, teachers and students, have rarely been asked for their thoughts by researchers (Cohn & Kottkamp, 1993). The purpose of this study was to describe and interpret the teacher's and students' experiences of co-operative learning in two high school physical education classes.

METHODS

Participants and Settings

Two all-female classes, one eighth grade (year 9) and one eleventh grade (year 12), were observed during a 10-lesson team handball unit. Class periods were 60 minutes in length. Lennox High School was a culturally diverse inner city school with a population of 520 students. Anne MacDonald had been teaching physical education at Lennox High School in Montreal, Canada, for 23 years. She had been a co-operating teacher, supervising student teachers for 10 years. Anne was one of the most effective physical educators in the local area according to her principal, university faculty, other physical educators, and student teachers.

Anne used a co-operative learning format that was most similar to the conceptual approach (Johnson, Johnson, & Johnson-Holubec, 1998) and complex instruction approach (Cohen, 1994a). Anne used learning teams (Grineski, 1996) as a co-operative learning structure. In her peer-mediated approach, students worked in groups using one another as resources to complete the tasks. Students were assigned various roles and were expected to perform complex tasks or game strategies. Anne had attended two workshops on co-operative learning and tried to incorporate the elements of it in her programme: positive interdependence, individual accountability, promotive face-to-face interaction, interpersonal and small group skills, and group processing.

Data collection

The main sources of data for this study were qualitative interviews with the physical education teacher and students and non-participant observation for a six month period. Videotapes, field notes, informal interviews, and document analysis were also recorded. All classes were observed and videotaped by the investigators (a graduate student and university faculty member) during the grade eight and grade eleven handball units. In addition, all interviews, with the exception of the informal interviews, were audio-taped and transcribed for analysis.

The physical education teacher was informally interviewed before and after each lesson. In addition, she was interviewed informally on several occasions to clarify events as they occurred in context. Open-ended interviews occurred after each lesson for approximately 15-30 minutes to obtain her perceptions of the lessons. An in-depth structured interview was conducted with Anne at the beginning and end of the study. In addition, two classroom teachers were each interviewed to provide a broader understanding of the school programme. Student interviews involved groups of three or four students after each lesson for approximately 15 minutes. All students in the two classes were interviewed at least once. They were conducted to provide the student perceptions of the lessons and answer questions related to the students' beliefs about Anne's purposes and goals for the lessons. Interview questions were developed during early

observations, after spending time in the school and after informal discussions with the physical education teacher, principal, classroom teachers, and university colleagues (LeCompte & Preissle, 1993).

The study also involved nonparticipant observation of the eighth grade and the eleventh grade classes. Field notes were taken by the investigators during each class session and during or after observations at the schools. An organised method of taking and organising field notes was implemented (Schatzman and Strauss, 1973). The teachers' lesson plans, unit plans, the school board curriculum guideline, and other written documents related to the programme were collected and analysed.

Trustworthiness

Trustworthiness is the degree to which the findings are dependable, credible, and transferable (Guba, 1981). 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 investigators spent extended periods of time at the school and a continual presence reduced possible distortions or reactivity in the school settings. Confirmability was established by member checks, peer debriefing, and triangulation of data sources (Denzin & Lincoln, 1994; Guba, 1981; LeCompte & Preissle, 1993).

Two member checks were carried out. The first member check consisted of returning all interview transcripts to the teacher providing her an opportunity to modify or clarify any aspects of the interviews. Only editorial, grammatical, and semantic changes were made. The second member check involved the physical educator reading a draft of the manuscript to verify interpretations. No substantive changes were suggested. Peer debriefing was also used to assist in analysing and interpreting the data. Peer debriefing consisted of inviting other researchers and reviewers to challenge interpretations of the data (Guba, 1981). A search for disconfirming evidence was conducted throughout the data analysis for negative cases that could disprove themes or provide an alternative viewpoint.

Data Analysis

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

Inductive analysis and constant comparison were used to analyse and organise the data throughout the research process (Denzin & Lincoln, 1994). The data were read and re-read to find concepts that arose frequently which were combined to form themes or sub-themes. 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 field notes were merged into one document. This provided triangulation of data sources that strengthens the findings.

FINDINGS

Co-operative Learning Structure

At the time of this study, Anne had been using a co-operative learning structure in her class for three and a half years. She originally began using co-operative learning because of the social problems she observed when teaching the group of students in this study. Anne explained:

What caused me to get into co-operative learning more is that when the present grade elevens were in grade eight they were a very unruly, cliquish, racial group which made me feel very uncomfortable and nervous . . . It was the first time I had ever seen this type of thing. Teaching in a traditional teaching setup was not being effective . . . You had to do something because you could see that this class was going to have one large division and that was very scary.

Anne assigned students into small heterogeneous groups. It was not until grade eleven that she emphasised students' leadership roles. In both classes the role of coach was used in every lesson and the roles of observer, time keeper, director, and encourager were regularly observed (Field notes). In grade eleven students were expected to take on more responsibility as coaches and leaders. In each class, each group had a folder in which they wrote down handball content, such as how to throw and pass a ball, offensive strategies, defensive positioning, and the rules of the game. The members' signatures on their folder denoted their contribution to the subject matter for their group. A typical lesson for grade eight involved Anne helping students get organised and demonstrating new information. This was followed by practice in their small groups while Anne moved around providing feedback to students. There were more explicit task descriptions and a higher frequency of reinforcement (prompts to get organised and active) for grade eight compared to grade eleven students. For all classes students were asked to figure out their goal or strategy for the lesson. By grade eleven students came into the gymnasium and immediately organised their equipment (Ex. balls and pinnies), took their group folder to read their task sheet, and discussed their goals or team strategy for the day. In addition, group processing was used frequently to encourage group members to contribute to skill and strategy development.

Anne's and Students' Perceptions

Perceptions are represented by quotes from interviews and field notes. The themes that emerged from Anne's and the students' voices concerning co-operative learning are presented to foreground a discussion of pertinent literature. A brief description of Anne's co-operative learning structure will be followed by Anne's goals and grade eight and grade eleven students' perceptions.

Goals of the Programme

Anne's goals for grade eight (year 9) and eleven students (year 12) were: to develop motor skills, to develop game strategies, to actively participate, to respect one's peers, to accept responsibility, to improve communication skills, and to have fun. Although most of her goals were similar for both classes, there was a

difference in the degree that the motor and social skills were emphasised. For the grade eight class the acquisition of social skills, more specifically interpersonal communication skills, was a primary focus. Since social skills had been developed for the grade eleven class, Anne emphasised motor skill development. The students talked about concepts similar to Anne's goals: learning motor skills, participating, communicating, and having fun. In addition, the students talked about co-operating with each other or working together which was an underlying theme of Anne's co-operative learning structure.

Recent publications have also referred to teaching goals that contribute to the affective domain of learning. In addition to motor skill goals, teachers have reported goals of co-operation, teamwork, involvement (Carlson & Hastie, Dyson, 1995; Ennis, 1994; 1997; Hastie, 1998), and social responsibility (Cothran & Ennis, 1998; Hellison, 1996).

Developing Motor Skills and Strategies

Anne wanted her students to develop motor skills and strategies, and this goal became increasingly important as students moved through high school. She explained, "I put social skills first at the grade eight level. As you progress through, the social skills are usually more developed so that now you can look more at the athletic balance." Anne wanted students to attain basic motor skills. She stated, "At the end of each unit, I would like each child to have the basic skills of that particular sport, recognizing that we can't do all of them perfectly". By the end of the handball unit, Anne felt that the grade eight students' "skill levels could have improved more but [that] they would develop more quickly once a positive social environment had been established". She felt that the grade eleven class "had increased their motor skills substantially during their unit". Anne explained her perception of the difference in skill acquisition between a traditional programme and a co-operative learning programme:

In the very beginning you give up a bit of the skill acquisition. After four years, although I haven't measured it, I think they come out even. [However], the kids that have experienced the co-operative learning end up with more social skills than in the traditional [programme].

The students also identified learning new motor skills in handball as an important goal to them and their teacher. They were able to identify specific skills and strategies that they had learned. Students' skill-related goals included learning to throw, catch, and move with the ball, and to perform the appropriate offensive or defensive strategies (Field note).

Motor skills and strategies had improved in both classes as evident by the efficiency and intensity of game play by the end of the unit. Field notes indicated that in the grade eleven class "the game [was] becoming increasingly more technical. There [was] more passing, more shooting at opportune times, and more defensive coverage of players attempting a shot. The [result] was a much faster, more intense game." By the end of the unit the grade eight class had also showed a "faster, more improved style of game play".

Although students in both classes reported that their motor skills had improved, the two classes differed in their reasoning about improvement. At the grade eight level, students cited their individual proficiency at passing and the number of goals scored as evidence of improvement in skill. Sheri, a low skilled

student, announced, "I got two goals and two assists today. It seems every time I play I am getting better. I have definitely had more practice." Students in the grade eleven class often cited the same skills as those in the grade eight class, but gave more complex strategies as evidence of improvement. They appeared to answer in terms of team improvement, as opposed to individual improvement. Julie stated, "We are definitely passing a lot better now than we were in the first few games". Nikki, a high-skilled student, exclaimed, "Did you see our zone defense today? It was pretty tough to beat." The grade eleven class also identified team improvement as a benefit of social skills. Kelly stated, "Our passing was better than usual today because we were communicating more." Lorraine added, "We are making a lot more short quick passes than we used to and we are really increasing the speed of the game. It's because we are playing as a team and not five individuals."

Team Strategy

To improve team strategies time was allocated before and during game play for students to engage in strategising tasks. Jessica, had learned her team strategy, she commented that "at first I'd pass the ball to anywhere". Now I pass the ball to an open man who might have a chance to score. Students would discuss or clarify tactics or skills that they would work on or incorporate into the game. Anne would guide the students by saying, "Take one minute to discuss what you are going to focus on in today's game". She asked for both social and motor strategies. Field notes illustrated Anne's instructions for and the implementation of a strategy:

Come up with an immediate strategy that your team will work on and how you are going to accomplish that. Make sure everyone understands it. That will be your focus for today." One team decided that they needed more defense. They were going to accomplish this by a quick transition after they lost possession of the ball.

During games either Anne or the students could call a time-out to re-focus their team and to improve the quality of their play. The student-initiated timeout was called when one of the players recognised that their strategy was not working, or when they realised that there was an improvement needed in the quality of performance. The teacher-initiated refinement often involved three general questions that each team was supposed to discuss: What are we doing well? What do we need to improve? How are we going to improve it? The Tactical Approach to Games also encourages teachers to frequently stop games to ask questions related to skills and strategies (Griffin, Mitchell, & Oslin, 1996).

Analysing Motor Skills

For students to help each other improve their motor skills Anne taught them to analyse other group members' skill and provide feedback. Students were encouraged to hold each other accountable for their skill improvement. For example, in lesson one for grade eleven, the observer in the group was responsible for checking that the other members of the group were throwing with proper technique. By ensuring observers were performing their role Anne was able to hold students' accountable for each other. Field notes recorded this example:

[Anne said,] "If they throw it well, tell them they are throwing it well." Anne noticed that one girl was not executing the proper technique and she confronted the observer. "Is Jackie throwing the ball properly? . . . Let her know where her hand is and where it should be. This is the only way she will learn."

Anne was pleased when students learned to analyse other students' skills:

Students feel proud of the fact that they can coach or correct someone. This [enhances] their self-esteem. Students may not be able to do the skill but if they can analyse it to figure out if something is wrong and help someone out, then my job is done.

Anne believed that students had learned to give more specific skill feedback by the time they had reached grade eleven:

At the beginning of grade eight, the class was taught to give positive responses to situations, whether it be "good play", "good game", etc. Since the students were not used to giving positive feedback, they really had to think about doing it . . . By grade eleven this has become second nature to them. The students' comments moved from general positive feedback to skill-specific feedback.

Studying grade five and six students, Dyson (in press) reported a similar finding. Within a co-operative learning structure he found that students could be taught to analyse other students' motor skills.

Proponents of co-operative learning structures (Cohen, 1994a; Johnson & Johnson, 1989; Kagan, 1992; Slavin, 1990, 1996) have suggested that students can hold each other accountable. This was accomplished through peer teaching and student-to-student feedback. In addition, group processing during or after games served as an opportunity for the students and teacher to give feedback on the lesson's events and, therefore, also served as a means of accountability. Accountability was evident in various ways throughout the unit, including: individual testing, member signatures, peer feedback to each other, and constant monitoring and interactions by Anne. At the end of each lesson Anne asked questions to determine if their goals had been accomplished. At the end of the unit both classes were administered a written test on basic handball knowledge; the average score in both classes was above 80%.

Actively Participating

A goal shared by Anne and the students was active participation by as many students as possible. Anne cited participation as an indicator of an effective physical education programme:

The number one thing that you see in any [effective] physical education programme is that at any given time you can walk in and not one kid is opting out. When you go to another school and you see a third of the kids sitting out, then there is something wrong with that programme.

In Anne's physical education programme, participation was an important component of the evaluation process. She held students accountable for actively participating in class by constant observation and feedback to students. Anne stated, "I would like to have a physical education programme where the kids want to participate, because my ultimate goal is to have active gym classes." In both classes there were high rates of student participation. Even during illness the students "participated in non-active roles, acting as coach for the day, coordinating the implementation and refinement of game strategy". Anne felt that everybody's effort counted and that a "hurt knee did not affect one's ability to contribute their ideas to their team".

Anne explained that participation would be possible only when the students were not intimidated by their environment.

I want kids to feel comfortable in here and not to be afraid to try things that are new and different. I want the kids to enjoy themselves. I want them to achieve goals that are realistic. We can't all be superstars at every single sport but as long as they are willing to try.

Students also recognised that participation was an important part of the physical education programme. To them, participation meant that they were in class on time, dressed properly, and eager to take part in the lesson (Field notes). Students reported that there was not always full participation, but the majority of students did not understand other students not wanting to participate. Sheena, a low-skilled grade eight student stated that "Some people are lazy and don't want to come on. Maybe they don't get enough encouragement. That's what we will have to work on next class." Alicia, a skillful grade eleven student believed that "it's more fun to participate and be part of a team than to say 'I don't want to play this game' and sit in the bleachers and watch everyone else play". Louisa, a grade eight student, commented, "I used to not try hard but I've realised that when you try hard, it's more fun".

Both classes identified that it was the team's responsibility to ensure that everyone had equal playing time. Jennifer, a grade eight student, stated, "We didn't rotate on and off today because some people did not feel like participating. They just wanted to sit out. [Next time] we have to time ourselves." Adriana, a grade eight student, praised her team's coach for ensuring that team members got equal time. "[Katie] was coaching us and she made sure everyone played equally and if someone was tired she'd call them off." The idea of full participation extended to those on the court. Leisha, a grade eight student, stated, "One of the benefits of this class is that everyone gets the ball and no one is left out".

Cothran and Ennis (1999) have recently suggested that a lack of student participation and engagement is a major problem in today's schools. However, this research suggests that co-operative learning can be an instructional strategy that can motivate students to be actively engaged in the content.

Respecting One's Peers

In addition to wanting students to be active and develop motor skills and strategies, Anne valued the affective domain of learning, particularly students' social skill acquisition. Anne believed that students learning to respect their peers was an important long-term goal for her programme. "Working together with other people and respecting those people benefits everybody, and I would say that

this is my ultimate goal." For Anne, respecting one's peers was necessary for students to communicate with and work with each other. In addition, learning this respect had life-long benefits: "For the students to lead a happy normal life once they graduate from here, they need the communication skills, the listening skills, they need to be able to relate to other people and most importantly, they need to learn to respect everyone else."

Anne taught students respect by advocating full inclusion of all participants, emphasising good sportspersonship (Ex. shaking hands at the end of a game), encouraging students to feel part of a group, reinforcing students to support all members of their group, and encouraging students to recognise others' strengths. A study of the Sport for Peace programme which was designed for urban schools, discussed respect for self and respect for others and reported that students gained respect through thoughtful decision-making, effective teaching, and support for players on their team (Ennis et al., 1999).

Anne wanted her students to focus on what they had accomplished, whether it was a motor or social goal. She asked students to compliment each other. "Come up with five ways to compliment your teammates. Then use those compliments when encouraging them." Anne commented that particularly for some grade eight students this was a "chore for them". She emphasised that encouraging each other needed to be taught and that some grade eight students thought that it sounded "phony". However, by the time students had reached grade eleven Anne stated that "it's more natural and they have acquired the skill to focus on others".

Respecting one's peers was strongly emphasised in Anne's grade eight class. Julia, one of Anne's grade eight students, had a condition of dwarfism. In a traditional class, Julia might be ostracised because of her needs and abilities. Anne believed that co-operative learning played a valuable role in the process of learning respect:

It [co-operative learning] magnifies the need for respect for her special needs within the class. It's important to me that she should always be made to feel part of a group and not pushed aside because of need, size or ability. I think that the kids certainly have shown no sign of that. This is where co-operative learning is really important.

Even though respecting their peers did not emerge as a dominant theme for them, students did report increased respect as a product of this class. Julie a grade eleven student stated that "[My team] is giving me respect now and I am giving it back to them". Rebecca, a grade eleven student, stated, "[Co-operative learning] helps you learn to work with other people [with] different personalities and abilities than you." This sentiment was confirmed by Terra. "When you become close to your team members, they take your advice, they respect what you have to say."

Accepting Responsibility

Teaching responsibility was another important goal of Anne's programme. She hoped that taking on this increased responsibility in the gymnasium had a broader influence on students to help make them more socially responsible in their lives. Anne taught responsibility by giving students power to organise and operate their groups, to teach other group members, to provide feedback to each other, and to find solutions to their problems through group processing. Teaching students responsibility is not a new concept; over 20 years ago Hellison (1973) promoted

teaching social responsibility in physical education. Hellison (1996) has stated that increased diversity in student backgrounds, changing family structures, and at-risk behaviors such as drug use, violence, and dropping out has made these skills more important today. Anne agreed that learning to be responsible was even more important in the current social climate:

I think kids today have a lot of responsibilities and don't necessarily know how to handle those responsibilities. Society has changed and I don't think we have equipped kids to adapt to those changes . . . One has to understand that responsibility is something that is taught. [Students] have to learn how to accept responsibility and what responsibility is.

Anne wanted students to take responsibility for finding solutions to problems that arose during class. One skill which provided a mechanism for helping students to work on their own problems was group processing. Anne explained:

The kids should be able to reflect during or at the end of a class on what is going well and what's not, but more importantly how they can fix or improve what might not be going so well. Once they can do that, they are off and running.

Anne acknowledged that teaching students responsibility often means turning certain duties over to the students and therefore relinquishing some control in the classroom. She believed that teachers considering the implementation of co-operative learning in their programme often feel threatened by relinquishing power and shifting responsibility to the students. She explained:

I think for some teachers they see co-operative learning as a threat because they are giving the students more power . . . and from the teaching standpoint, you have a feeling that sometimes you are not in control because you are giving the responsibilities and duties to the kids. I still think that if it is fostered in the right way the teacher becomes the facilitator and regulates the control.

Anne admitted that "there is a danger at first of the kids getting off-task but with experience you learn to bring them back". Sapon-Shevin (1994) explained that teachers sometimes resist co-operative learning because it reduces their control and the typical predictability that exists in the teaching and learning environment.

Research has found that many physical educators believe in the development of student responsibility as an important goal in their programmes (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 co-operative learning can be an instructional strategy that provides a structure for increased student responsibility. Dyson (in press) found a co-operative learning format helped students take responsibility for organising and teaching sports skills and strategies to their peers. Other innovative programmes, such as the Sport Education Model and Sport for Peace, have been successful with students taking responsibility for organising, refereeing, or coaching in their physical education classes; teachers have reported that students were willing to take responsibility in their classes

(Alexander, Taggart & Thorpe, 1996; Carlson & Hastie, 1997; Ennis, et al., 1999; Grant, 1992; Pope & Grant, 1996).

Communication Skills

Anne and the students often stated that building communication skills was a goal of the programme. She thought that the development of communication skills allowed students to encourage and support one another, listen to each other, talk appropriately to each other, be more confident about themselves, and help students develop group processing skills.

As with teaching respect, Anne thought that communication skills needed to be taught. She believed that "there is a whole language that has to be taught to them . . . Learning to compliment each other - they come in here not knowing how to do that". Anne's beliefs are supported by the co-operative learning research that has suggested appropriate communication skills need to be taught explicitly to students (Cohen, 1994b; Johnson, Johnson, & Johnson-Holubec, 1998; Kagan, 1992; Slavin, 1990). Often in physical education students are placed in groups and their teachers assume that social skills will develop automatically. However, Cohen (1994a) has pointed out that just putting students in heterogeneous groups is not sufficient to redress existing student prejudices and status differentials. However, Smith, Markley, and Goc Karp (1997) reported that after a six-week co-operative learning unit both students and their teachers believed that students' social skills and interactions had improved in their physical education classes.

In Anne's opinion, a skill that the students needed to learn was how to talk to each other in an appropriate manner:

I really hope that through some of what we do, students are learning how to have a conversation. The person compliments someone or says in a positive way "I didn't like it because" or "Could we do it this way?", "How's about trying it this way?" There's different ways to say something negative to someone without saying "That sucks!" or one of those type of comments.

Group processing or reflection time most frequently occurred when students and teacher assessed what happened in the game. She used this time to check the students' understanding of the lesson concept or skill and to assess the results of each team's strategy. Anne stated that she tried to "focus on the positive and to have the students leave with feelings that at the end of the lesson they did something right, so they would be enthusiastic on other days".

Students also discussed communication as an important part of their lessons, but emphasised different aspects of it than their teacher did. Students most often defined communication as offering encouragement and/or praise to each other. Communication was a goal in itself but also a means to other goals. Sarah reported, "Communication really helps because you encourage the other people and they have more confidence and they think they are playing better so they play harder". Jody, a grade eight student, stated that her goal for the lesson "was to communicate because [until this year] I never did. Before I just sat there . . . [Today] I even encouraged the other team."

Students felt positive communication involved encouraging, cheering, complimenting, and clapping. Lesley stated "We were all communicating, cheering each other, playing like a team". Amber believed that "the person

cheering would also receive benefits . . . It's more fun to cheer because it puts you in a good mood". In both classes the students were constantly communicating with and encouraging each other. Field notes indicated that being on a team and encouraging one's teammates created a positive learning environment. Grade eleven students frequently made comments during class: "That's it Jody, take a shot." "I'm open Susan." "Switch Jill." "D-E-F-E-N-S-E, Good work guys." "We'll get it back." "Move with it Sarah." "Good save Sharon." On the other hand field notes reported that students in the grade eight class often needed to be reminded to encourage.

At times, students also discussed communication as verbal and physical signals to inform team members of specific offensive or defensive strategies. Teri, a grade eleven girl, commented on her team's secret communication signals. "We communicated well today. We used signals that are only known by our team." In addition, students believed that a lack of communication resulted in less effective play. Lesley, a grade eleven student, commented, "Nobody was communicating today. So everyone was moving slow and aimlessly. This means that it is easier for [the other team] to catch and block you."

The students had a strong social focus in their physical education classes which has also been found in traditional physical education programmes (Cothran & Ennis, 1998). Students' comments suggested that they developed friendships and good interpersonal relationships with many other students in their classes. This finding is similar to Carlson and Hastie (1997) who reported that students' social agendas in Sport Education work with, rather than against, the objectives of the unit.

Having Fun

Anne pointed out that one of her desired outcomes was that students have fun. Having fun in class meant that people were laughing, showing team spirit, and being positive about their physical education experiences. She explained why she thought this goal was achieved. "I think the students enjoy physical education. They certainly talk about it. I think they enjoy the social atmosphere."

Having fun was also an important concept for students. Fun usually occurred in one of several ways: a novel task, a sense of achievement, encouragement of each other, co-operation, and participation in a positive learning environment. Rachel, a grade eleven student, commented "It was really fun today. I don't think there is ever anything negative about gym." Jackie, a grade eight student, stated, "Our class is different than math or science. It's co-operative and it's fun." Erin, a grade eleven student, agreed. "I like the way we learn. It's different than other classes. It's definitely more exciting and a lot more fun." In a study of urban high school physical education programmes Cothran and Ennis (1998) concluded that the emphasis teachers have on fun could be problematic if they do not have a clear educational focus. However, in these grade eight and eleven classes fun was a contributing element similar to the findings of other research that reported fun as enhancing teamwork, improving skills, and creating a positive learning environment (Carlson and Hastie, 1997; Dyson, 1995).

In both classes, students appeared to be having fun. In the grade eleven class students could often be found "laughing, smiling, cheering, hugging the opposition, and enjoying what they were doing". In the grade eight class "the students have a great time amongst their team and often with the other teams . . .

and really show that they are excited and enthusiastic about physical education" (Field note).

Anne's zeal for teaching also appeared to have an impact on the students. She explained her perspective. "I like to think that the kids are having fun because I am having fun. I enjoy teaching, I enjoy working with kids and from my experience if you go in with a positive attitude, the kids come out with a positive attitude."

Co-operating

Co-operation was a concept emphasised by the students in both grade eight and eleven. They viewed co-operation as working together as a team and helping each other. At times co-operation was a goal in itself, whereas at other times, it was a means to reach other goals. Students in both classes talked about co-operation (or the lack of it) as the reason for success or failure of the task at hand. In addition, the students perceived that the teacher met her goals based on whether the teams co-operated.

Students reported that working together helped them improve their skill, allowed them to have more fun, enabled them to contribute different ideas, and helped them learn about their classmates. Jenny, a grade eleven student, remarked, "It's a lot funner working with other people. They can help you out. If you don't understand something or you're not doing something properly they can tell you what to do and how to do it." Brenda talked about how students have different knowledge to bring to the group. "Working together - one person knows one thing, another person knows something else. It's more fun and easier to work together than having to do it all yourself." Chelsea, a grade eleven student, explained, "It brings people closer because you learn more about other people. You have to work together - you can't be strangers." Students' comments were similar to those reported in Sport Education studies that being a valued member of a team was an important outcome of the programme (Carlson & Hastie, 1997; Grant, 1992; Hastie, 1996; 1998; Pope & Grant, 1996).

Several grade eleven students recognised the long term benefits of working together. Melanie pointed out, "[Co-operative learning] helps when you have a job because you're learning to work with people. It makes your life a whole lot easier if you learn how to work with people." However, Sally, a grade eight student, explained the reality that sometimes concepts were difficult to put into practice. "Well, she [the teacher] got her point across but sometimes it doesn't work because we don't work together as a team to accomplish it."

Students reported that the co-operative learning format distinguished physical education from other classes and was well suited to this subject. Candice, a grade eleven student remarked, "working together as a team, other classes don't do that. Other classes don't teach you how to work with people." Joanna, a grade eleven student, pointed out, "[Co-operation] betters your self . . . When we come into the gym, whatever your differences are, you leave it outside. When you come inside everyone is friendly and having fun." Susan, another grade eight student, added, "No team sports you play by yourself. It's more appropriate to play in groups and to learn to play well with them." This quote illustrates the notion of positive interdependence which is an inherent part of team sports and considered a prerequisite for successful co-operative learning (Cohen, 1994b; Johnson, Johnson, & Johnson-Holubec, 1998; Kagan, 1992; Slavin, 1990). In order to complete a task or implement a strategy in a game students depend on each other.

Sapon-Shevin (1994) has stated that in co-operative learning the "curriculum and the tasks need to be structured so that students must work together in order to be successful" (p. 184).

Social Benefits of Co-operative Learning

Anne and students had noticed changes in their respective classes since they had begun the co-operative learning programme. Students reported that they had developed improved relationships with each other due to the co-operative learning structure and the way it was taught. This change was most apparent in the grade eleven class. Tricia stated, "Everyone gets along, everyone communicates". Tracy, a grade eleven student reported:

Our team has matured. In grade eight everyone was more segregated. Nobody was playing like a team. There were arguments, bickering. This year we have left that all behind. It doesn't matter any more . . . It was because of the groups we were put in at the beginning of the year. We all started bonding.

Donna added, "We can talk to each other a lot easier now. We have become really close-knit. My best friends come from phys. ed. class." Ennis et al., (1999) found that students developed strong friendships and created "a class community more conducive to engagement and participation" (p. 273) after teachers implemented the Sport for Peace curriculum which had students work together in small groups to achieve specific sports goals.

Three and a half years after the incorporation of her co-operative learning programme Anne changed her perception of this grade eleven class; she now believes that it is one of the best classes she has ever taught. Now the students can play with and get along with virtually everyone in the class. Anne commented, "Interestingly enough, the kids who were the worst in terms of causing the division, today are the leaders in the class". When other staff members were asked if they could see any benefits to the co-operative learning programme, they pointed to the social improvement of this grade eleven class over the three and a half years. A classroom teacher stated, "If you could see that [grade eleven] class in grade eight, you would see that Anne's co-operative learning really works."

Anne and the students also noticed positive social changes in the grade eight class. At the beginning of the unit she felt that the grade eight students "were not extremely cohesive as a group and that positive, encouraging comments to each other were non-existent". However, by the end of the unit Anne said that the students' attitude "has turned from a few positive kids to one where all the kids are positive. They understand the importance of communication with the group and its relationship to the game we are playing." Students in the grade eight class had already noticed more co-operation within the gymnasium since the beginning of the year. Susan stated that "at the beginning we were all little groups of people. Now we are all friends." Brittany added, "We used to call each other names. People used to argue all the time. We have forgotten about that stuff now."

CONCLUSION

Anne, the physical educator in this study, valued the development of both motor and social skills for students and believed that a co-operative learning structure

could facilitate their development. Improving basic motor skills and strategies was emphasised by Anne and frequent comments about developing these skills were reported by students. She believed that active participation was the sign of an effective physical education programme. The majority of students participated enthusiastically and believed that it was the team's responsibility for everyone to participate equally. Anne believed that there was a connection between motor skill development and social skill development. Her focus for the grade eight students was first learning social and communication skills and second on motor skill development. However, for the grade eleven students she focused on motor skills and tactics since they had already developed strong interpersonal skills and learned to take on greater responsibility in the gymnasium.

This social skill development included learning to: respect one's peers, accept responsibility, improve their communication skills, co-operate, work as team, and have fun. Anne stated that many of these skills must be taught explicitly. The students reported that the co-operative learning format had led to improved relationships with fellow students. Students expressed positive feelings towards each other, the teaching format, and the handball content during the lessons. These educational goals are similar to findings from the implementation of the Sport Education Model, Sport for Peace, and the Social Responsibility Model (Carlson and Hastie; 1997; Ennis et al., 1999; Hastie, 1998; Hellison, 1996; Siedentop, 1994). These goals are also similar to several of the essential social and co-operative skills stated in the New Zealand Health and Physical Education Curriculum (1999): working in co-operative ways, taking responsibility as a group member, exercising leadership, demonstrating respect for others, and demonstrating a sense of responsibility for the well-being of other people.

Anne attempted to reach these motor and social goals using Learning Teams (Grineski, 1996) as a co-operative learning structure and by incorporating the elements of co-operative learning into her programme: positive interdependence, individual accountability, promotive face-to-face interaction, interpersonal and small group skills, and group processing.

Co-operative learning appears to be an instructional strategy that could be used to meet two of the general aims of the New Zealand Health and Physical Education Curriculum (1999): to "develop understandings, skills, and attitudes that enhance interactions and relationships with other people" and to "develop motor skills through movement, acquire knowledge and understanding about movement, and develop positive attitudes towards physical activity" (p. 7). At Lennox high school co-operative learning positively influenced students motor and social skill development and attitude towards physical education.

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