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ELEMENTS AND SKILLS OF COOPERATIVE LEARNING FOR
STUDENT LEARNING IN PHYSICAL EDUCATION

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Education:
Kinesiology

by
Enrique Aguilera

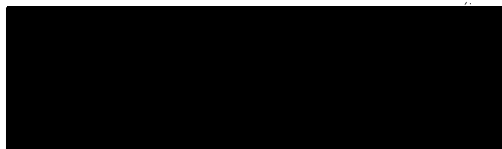
March 2009

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March 2009

Approved by:



Hosung So, First Reader

3/12/2009
Date



Christopher C. Grenfell, Second Reader

ABSTRACT

The purpose of this project was to identify and examine the elements and skills of cooperative learning for student learning in physical education. The method for this project was a literature review from peer-reviewed articles. The findings were that there are five elements and four skills in teaching cooperative learning. The five elements are team formation, positive interdependence, individual accountability, positive social interaction skills, and debriefing. The four skills are forming, functioning, formulating, and fermenting skills. In conclusion, cooperative learning is an excellent instructional format for physical education which its elements and skills can be transferred to other teaching settings. The first step for teaching cooperative learning is that physical education teachers need to understand and master the elements and skills of cooperative learning. Then, teachers need to set up an activity where students are going to be successful using the elements and skills of cooperative learning. If cooperative learning is delivered and provided correctly, students will have a profound rewarding experience working in groups.

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DEDICATION

To my parents, Esperanza and Enrique Aguilera, who always give me their unconditional love and support.

To my sisters, Teresa and Elisa Aguilera, who always give me their good vibration and positive energy to continue in life.

To all my students, friends, and extended family, who have always given me all those happy and positive moments in life that fuels my conscious.

TABLE OF CONTENTS

ABSTRACT	iii
ACKNOWLEDGMENTS	iv
CHAPTER ONE: INTRODUCTION	
Introduction of the Project	1
Purpose of the Project	3
Scope of the Project	4
Significance of the Project	4
Limitations of the Project	4
Definition of Terms	5
CHAPTER TWO: METHODS	6
CHAPTER THREE: REVIEW OF LITERATURE	
Learning	7
Elements	9
Skills	15
CHAPTER FOUR: CONCLUSIONS	23
APPENDIX A: TWELVE COUNT LOCOMOTOR ROUTINE	26
REFERENCES	28

CHAPTER ONE

INTRODUCTION

Introduction of the Project

Research has shown positive outcomes from cooperative learning in many areas. Many reviewers of cooperative learning literature agree that cooperative learning usually has a positive effect on student achievement (Slavin, 1991). For many years, it was believed that physical education teaches cooperation (Silverman & Ennis, 2003). Now, there is a wide variety of literature that supports cooperative learning in physical education (Silverman & Ennis, 2003).

A group of five students have to learn the basic mechanics of a lay-up. As a group, they have to make twenty lay-ups before they can move to the next station. The most athletic student makes ten out of the twenty lay ups. The non-athletic student tried to make a lay up once.

This is typical to see when middle school students are divided into groups and have to accomplish a task. The most athletic student will dominate most of the action. The non-athletic student will try the activity once, or he or she becomes a by-stander.

Physical education is changing with new ideas, strategies, concepts, and instructional formats. The new physical education brings the concept of learning skills, not worrying about losing or being eliminated, everyone is successful, include everyone, and cooperative activities (Sullivan, 2006). Cooperative learning addresses national standard five and six for physical education (Hannon & Ratliffe, 2004).

The goal of physical education is student learning (Lund & Tannehill, 2005). Student learning is accomplished when students master the content. The purposes of cooperative learning are to master content, and produce social and affective outcomes (Siedentop & Tannehill, 2000). In addition, all three learning domains are addressed (Hjelm & Stork, 2006). Cooperative learning has indications of positive impacts on motivation for learning (Glatthorn, 1993). Cooperative learning is a student-centered model and the teacher becomes the facilitator putting the responsibility for learning on the student (Dyson, Griffin, & Hastie, 2004). Two reasons why the use of cooperative learning are unlimited because cooperative learning is the foundation for many lessons in physical education, and the social aspects from cooperative learning

found in many physical education activities (Kelly & Melograno, 2004). The elements and skills learned from cooperative learning are transferred over to other instruction formats that are used in physical education.

Students need to practice and develop an understanding for the elements and skills in cooperative learning because they are life long skills that can be used for any group work. Elements and skills learned from cooperative learning can be transferred to situations students face outside of school. These elements and skills will help students to work effectively in groups. Students will learn to work together and accomplish the task. Students will learn to understand and accept differences in ideas, opinions, beliefs, and perspective and still be able to come to a group agreement.

This project identified and examined the elements and skills of cooperative learning for student learning in physical education.

Purpose of the Project

The purpose of this project was to identify and examine the elements and skills of cooperative learning for student learning in physical education.

Scope of the Project

This project is intended for junior high and middle school physical education teachers who want to be informed on cooperative learning for student learning in physical education. Cooperative learning is the main topic of this study. This project searched for the elements and skills in cooperative learning.

Significance of the Project

Physical education teachers in junior high and middle schools can use this project to guide them through a new instructional format that they have less frequently used before. Teachers can apply the information to develop lesson plans on cooperative learning for physical education.

Limitations of the Project

Some limitations of this project were the selection of articles. The articles were retrieved from ESCOHost, Illumina, ProQuest, and Wilson Web. A total of fourteen articles specifically related to the topic of cooperative learning in physical education were selected for review.

Eleven books and one web site from the Internet were used in the project.

Definition of Terms

- A. Cooperative learning is defined as "small group instruction and practice that uses positive student interactions as a means of achieving instructional goals" (Dyson & Grineski, 2001).
- B. Instructional format is defined as "the way a teacher organizes and delivers instruction and provides practice for students" (Siedentop & Tannehill, 2000).

CHAPTER TWO

METHODS

Review of literature method was used to complete this project. A total of fourteen peer-reviewed articles from scholarly journals, eleven books, and one article from the Internet were used in this project. The articles were retrieved from EBSCOhost, Illumina, ProQuest, and Wilson using databases from Academic Search Premier, SportDiscu, PsycINFO, and ERIC. The articles were selected from various journals, such as, Journal of Education, Journal of Teaching in Physical Education, Journal of Physical Education, Recreation, & Dance (JOPERD), QUEST, Intervention in School & Clinic, Journal of Teaching Education, Journal of Education, and Strategies. The terms used for searching articles were cooperative learning, cooperative skills, physical education pedagogy, team building, and instruction in physical education. The articles were photocopied and reviewed.

CHAPTER THREE

REVIEW OF LITERATURE

Learning

According to Rink (2001), teachers cannot assume that a particular learning process is occurring because a teaching methodology has the potential for that process to occur. The purpose of her study was to investigate the assumptions of pedagogy in particular between learning theories and teaching methodologies from a researcher and teacher perspective. Almost all teaching methodologies will fall under a continuum from two orientations of instruction, which are from direct to indirect teaching. In levels of processing, constructivist theory can be present in direct and indirect instruction.

Constructivist theory is when a student finds his or her own way to accomplish a task without the direct guidance from the teacher. Students will elicit different levels of processing. A student who experiences a high level of processing can elicit a low level of processing in another student. The learner will need content information for any given task. It is dependant on teacher clarity. The teacher begins with giving clear expectations of what

students should do. The degree of student engagement and process is related to student motivation. Student motivation is crucial for student engagement. Student engagement is a key for learning. Deciding what learning task to use is an important decision that teachers have to face. The appropriate task that is used will depend on the teacher's experience to balance student meaning and student success. A critical issue around pedagogy is for whom and under what conditions is a pedagogy appropriate (Driver, Asoko, Leah, Mortinmer, & Scott, 1994).

The results of this study indicate that there is not a single theory of learning that explains learning and therefore not a single instructional methodology approach to teaching. There may not be a particular way to do the best teaching. However, for teaching a particular content to a particular learner, there may be a best way to teach. A problematic issue on teaching methodology to teachers is not putting attention to the underlying assumptions in methodology. Teachers need to be knowledgeable of what processes should occur and should be given strategies to confirm the processes.

According to Siedentop and Tannehill (2000), working in small groups has different types of variations which

cooperative learning is one of them. Cooperative learning is a type of instructional format and not just any activity (Kagan, 1990). In cooperative learning, students search for clarification on content for and from their group members. Students will be assigned to accomplish a problem, a task, or a goal in a group. A group's success depends on student's cooperative skills and disposition to work together. Those cooperative skills need to be taught, and students need to be given the opportunity to practice them. Cooperative learning produces mastery of content. In addition, social and effective outcomes are expected. The number of members in a group is important in cooperative learning. Small groups force everyone to be involved, and it increases participation. There are different ways to form small groups, such as self-selection and mixed ability grouping. Results indicate that cooperative learning is a structured activity that requires interdependence and individual accountability from everyone in the group.

Elements

Dyson and Grineski (2001) defined cooperative learning as small-group instruction and practice that uses positive

student interactions as a means of achieving instructional goals. There are five elements for cooperative learning that many physical educators do not know about when they have their students doing cooperative activities. The five elements of cooperative learning are team formation, positive interdependence, individual accountability, positive social interaction skills, and group processing. In team formation, groups are heterogeneous in gender, race, economic status, and abilities. In positive interdependence, each group member depends on the group and the group depends on each group member. In individual accountability, students demonstrate what they have learned as a result from working in a group. Positive social interaction skills are social skills that are needed for group members to cooperate. Group processing that is also called debriefing is time for students to discuss if the group is working effectively towards its goal. Cooperative learning activities offer students to learn responsibility. In cooperative activities, the responsibility is shifted from the physical education teacher to the students. Results indicate that lessons should include all five elements, which allows students to attain numerous positive

outcomes in the psychomotor, cognitive, and affective skills.

Similarly, Kane and Kane (2004) presented five elements that Dyson and Grineski had identified in 2001, which are heterogeneous grouping, individual accountability, positive interdependence, positive interaction skills, and debriefing. First, heterogeneous groups are groups that are diversified in abilities, gender, race, and socioeconomic status. Second, individual accountability is when students are individually assessed on the contribution they provided to the group. Third, positive interdependence is when the group success is depended on contribution of every group member. Fourth, positive interaction skills are skills needed for direct interaction between group members. Last, debriefing is when the teacher gives time to each group to reflect on how the group is working towards the group's goal.

It is a challenge to teach health related fitness, but it becomes less challenging when the correct teaching strategy is used. One of those teaching strategies is cooperative learning. Five cooperative learning activities for health related fitness are fitness think pair share, the pacer, cooperative distance run/walk, muscular strength

and endurance challenge, and cooperative aerobic dance routine. Results indicate that physical educators need to motivate and commit to a cooperative learning culture. The physical education teacher consumes time in preparing equipment and supplies, organizing equipment, strategic grouping, explaining the activity process, monitoring and debriefing. The activities presented can work as a foundation for any physical education teacher who wants to implement cooperative learning.

According to Hjelm and Stork (2006), the beauty of cooperative activity is that it enforces all three learning domains. The purpose of this article was to understand the purpose of learning in cooperative tasks. Teachers need to understand that their role in cooperative tasks is to be an active facilitator. The teacher needs to encourage and give feedback to students. Cooperative task addresses the physical education curriculum in the National Standards five and six, "exhibit responsible personal and social behavior and value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction, respectively." Certain considerations need to be looked when implementing cooperative task. In progression of tasks, the first cooperative tasks should be done in

partners and then moving on to small groups and then to large groups. The focus of cooperative tasks is process over product. It is important to finish a task (product), but the strategies (process) are more important.

Appropriate supervision from the teacher is required; even though, students most likely will not need help from the teacher. Teachers should only help students when they have reached an impasse. Teachers should use specific praises when students demonstrate good strategies. A debriefing at the end of the cooperative task is to consciously reflect on the activity and their participation. The results of this article indicate that learning should have a purpose. Students need to cognitively and physically be engaged in the cooperative tasks. The teacher's responsibility is to direct the students' attention to parts of the cooperative tasks that will have an impact on the learning objective.

Hannon and Ratliffe (2004) also stated that standards five and six from the national physical education standards can be achieved by using cooperative learning activities. Cooperative learning can be defined simply as working as a group. According to Hannon and Ratliffe (2004), five steps are identified for cooperative learning activities in

physical education. First, activities should be simple and in pairs at the beginning and then move to more difficult activities. Second, each member needs to have a role in the group. Third, the teaching environment needs to be safe in terms of emotional and physical. Fourth, a teacher shows appropriate behavior, and becomes a role model to the students. Last, groups understand the objective of the task. Cooperative learning is a tool to teach health related fitness. Results indicate that cooperative learning helps to improve social skills, and gives teachers more time to make personal connections with students. Cooperative learning is sure to gain popularity as physical education teachers learn and master the five steps.

Hagood, Lynn, and Riverso (2005) presented that the affective learning can be achieved by using cooperative learning activities because team building and communication skills are being taught. Several cooperative learning activities were described which are orienteering, hook, ladder and train, survivor, and traffic jam. The role of the physical education teacher is to be a facilitator during cooperative learning. The major responsibility of a facilitator is to make sure that students are learning the affective objective. Assessments of cooperative activities

will let teachers know if students have learned the affective objective. Four types of assessments for cooperative learning are debriefing, journal writing, self-evaluation, and teacher checklist. One of the best assessments is debriefing after finishing the activity. Results indicate that cooperative learning is a way to teach teamwork and communication skills. In addition, it addresses the affective objective. By assessing students, teachers will understand what students have learned and the outcome of the lesson.

Skills

Goodwin (1999) stated that students of all ages can be successful in cooperative learning. The main goal of cooperative learning is positive interdependence. Research has shown that because of cooperative learning students have improved in academic achievement, inter-group relations, and self-esteem (Slavin, Madden, & Leavy, 1984). The purpose of Goodwin's study was to present information in three areas of social skills for cooperative learning, which are to decide on what social skill to teach, decide on how to teach that social skill, and begin activities that address social skills. Cooperative skills are divided

into four levels, and they are forming, functioning, formulating, and fermenting (Johnson, Johnson, & Holubec, 1993). These levels are from simple to complex. They start with forming and then functioning. Then, formulating comes next and followed by fermenting. Students will not simply learn cooperative skills just because they are instructed to work together. Cooperative skills need to be taught to students because if not, they will not be able to work together effectively. Cooperative groups are the best setting to teach social skills. When teaching cooperative skills, the teacher needs to consider several factors. The teacher needs to provide the student with a need for the skill, understand the skill, find appropriate time for usage of the skill, practice the skill, provide feedback on how well the skill is being used, and practice the skill until it happens automatically (Johnson, Johnson, & Holubec 1993). Results indicate that there are four levels of cooperative skills. Some activities to use when beginning to teach social skills are think-pair-share, roundtable, three-step interview, and corners (Kagan, 1990). Cooperative skills need to explicitly be taught to students. The best instructional setting to teach those skills is in groups.

The purpose of an article, entitled as skills needed for cooperative learning was to present four cooperative skills needed for cooperative learning, including forming, functioning, formulating, and fermenting skills. In forming skills, students are learning skills to organize a group and establish basic norms for student behavior. In functioning skills, students work on managing group efforts and maintaining positive working relationships by students sharing opinions and ideas. In formulating skills, students work on strategies for higher reasoning, which enhance mastery and retention of information. For example, students verbally summarize information from memory and correct each other. In fermenting skills, students will learn to look at information and identify controversies. Results indicate that cooperative skills helped students to function in a group setting, learn group objective, and learn information beyond group objective.

According to Midura and Glover (2005), team building is the cooperative process that individuals in a group use to solve physical and mental challenges. Several aspects of the process of team building are identified as negative social behaviors, positive social behaviors, selecting team names, constructing a team pact, student roles,

instructor's role, setting up activity spaces and equipment, and selecting an activity or challenge. Students need to explicitly learn the difference between negative and positive social behaviors. Team members need to come up with a positive team name. Students find group identity when team names are used. In constructing a team pact, students need to develop a plan to accomplish the task successfully. There are five student roles that are important in team building. They are organizer, encourager, praiser, summarizer, and recorder. These roles need to be rotated during the challenges so everyone gets the chance to support one another.

The instructor's role is to be an observer and give positive feedback on how the team members are working together and strategies used to solve the challenge. Teachers should not solve the challenge for the students. It is important that students struggle and sometimes fail in the attempt to solve the challenge. In setting up activity spaces and equipment, it is important to always set up more stations than groups because a group might finish the challenge early. For selecting an activity or challenge, teachers first need to identify the goal that will be accomplished by a team building activity. The

activity needs to be developmentally appropriate as well. Results indicate that identifying and practicing social behaviors as well as student's roles in teams are crucial in team building.

Rogers (2004) identified six principles of team building activities: facilitation, full value contract, sequencing, debriefing, creativity, and equipment selection. Physical educator is the facilitation from the first to the last minute of class. Facilitation is required to encourage every student to participate and not just the one or two dominators. In addition, facilitation is in charge of leading the debriefing at the conclusion of the team building activity. Students need to agree to the full value contract so an encouraging environment can be developed and reinforced. Full value contract is having students agree to a challenge by choice where all group members are utilized, and their contribution is valued. Sequence refers to start team building activities with two students in a group and then over on to more students per group. Sequencing suggest to start cooperative activities were reciprocal style is used and then move on to complex activities. At the end of any team building activity, debriefing should be used so everyone can share his or her

point of view on how the activity went, and students get to know everyone better. Physical education teachers have to constantly modify activities in creative ways so students of all ages, abilities, and sizes are interested in the activity. The equipment selection will depend on the team building activity. Results indicate that the success of team building is dependent on the application of its six principles.

According to Dyson, Griffin, and Hastie (2004), three instructional models that are used in physical education are sport education, tactical games, and cooperative learning. The purpose of this study is to connect the three instructional models in physical education using situated learning. Situated learning is the physical, social, and cultural relationship from the context that is being learned (Lava & Wenger, 1991). Sport education is a model that uses sports culture. Tactical games model is for students to experience modified games first so they can have an awareness of tactics used in the game. Cooperative learning has four major approaches, which are conceptual, structural, curricular, and complex instruction. In the conceptual approach, teachers can learn the five elements in cooperative learning (Johnson & Johnson, 1989). The

five elements are positive interdependence, individual accountability, promotive face to face interaction, interpersonal skill and small group skill, and group processing. In the structural approach, it is the way groups are structured and organized for student social interaction. In the curricular approach, the material presented to students should be at their grade level, and they should be tested for individual accountability (Slavin, 1996). In complex instruction, students work in small groups, that requires them to work on open-ended discovery or on higher order thinking skills.

According to Dyson, Griffin, and Hastie (2004), results indicate that there are common aspects in all three models, such as, teachers are facilitators, students are active learners in groups or modified games, learning activities are interesting and challenging, and students are held accountable. The three models have a student center approach (Lave & Wenger, 1991). Sport education, tactical games, and cooperative learning models intersect in many ways. Sport education can have a tournament in a tactical unit. In cooperative learning and sport education, students are assigned roles.

According to Dunn and Wilson (1991), most adults are

inactive because of their boredom and lack of enjoyment in physical education. Physical educators need to adopt cooperative learning into their physical education program because it makes students self-motivated and self-directed to be active in their daily lives.

Teachers need to clearly explain and make sure that students understand what needs to be accomplished in cooperative learning activities. In addition, the teacher's role is to be a facilitator.

Results indicate that the first few group tasks should be done in pairs and should be simple that everyone is successful when promoting cooperative learning. Every student needs to have a role in the group. The working environment should be physically and emotionally safe. Teachers need to model the behavior that is expected from everyone in class. Students should always understand the task.

CHAPTER FOUR

CONCLUSIONS

The purpose of this project was to examine the elements and skills of cooperative learning for student learning in physical education. The elements and skills of cooperative learning are identified and explained.

Elements and skills from cooperative learning were also identified in other instructional formats. Results from this project indicate that elements and skills of cooperative learning need to be explicitly taught to students. The elements for cooperative learning are team formation, positive interdependence, individual accountability, positive social interaction skills, and debriefing. The skills for cooperative learning are forming, functioning, formulating, and fermenting skills. Cooperative learning is excellent instructional format for many teaching lesson in physical education but it is not the best instructional format for every single lesson in physical education. The elements and skills found in cooperative learning can transfer to other instructional formats. Some components of the elements and skills from cooperative learning that are transferred to other

instructional format are that students have roles, students are accountable for learning, student share decision making, students work in groups, and teacher is a facilitator.

Based primarily on the results of this project, the twelve count locomotor routine (Appendix A) was developed and created that can be used as an excellent activity to apply the elements and skills of cooperative learning. A prerequisite for this activity is for students to perform all locomotors correctly. For this activity, teacher creates the groups because he or she can put students in groups where they can be successful. Each group will use all locomotors except run; to make a continuous twelve count routine. Students will receive a worksheet where students write their name next to their role in the group, guidelines for the routine, locomotors, and a blank space to write the twelve locomotors that are used for the twelve count locomotor routine. Students will do debriefing on the back of the worksheet. Before students work in their groups, teacher needs to explain the responsibilities of each role.

For future investigation, it is strongly recommended to investigate why students have negative or positive

experiences when engaged in cooperative learning and why students are motivated or not motivated to work in cooperative learning.

APPENDIX A

TWELVE COUNT LOCOMOTOR ROUTINE

Twelve Count Locomotor Routine

Period: _____

Names: _____

Recorder: _____

Facilitator: _____

Encourager: _____

Supply collector: _____

Run
Walk
Slide
Gallop
Jump
Hop
Skip
Leap

12 Counts

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

Guidelines

1. Use at least 3 different locomotors
2. Run can not be used
3. Everyone does the routine together
4. Locomotors are done correctly
5. 2 grades, group and individual grade

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