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The Impact of Hybrid Instructional Models on Game Performance Outcomes of Middle School Physical Education Students

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THE IMPACT OF HYBRID INSTRUCTIONAL MODELS ON GAME PERFORMANCE OUTCOMES OF MIDDLE SCHOOL PHYSICAL EDUCATION STUDENTS

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Title: The Impact of Hybrid Instructional Models on Game Performance Outcomes of Middle School Physical Education Students

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During one semester of an academic year, one physical education teacher taught two similar instructional territorial sport units to an intact seventh grade physical education class using a traditional instructional model called the multi-activity model. The same teacher also taught a different seventh grade intact class one of the same territorial sports for six weeks, but combined two contemporary instructional models (Sport Education model and Teaching Games for Understanding model) into a hybrid model for teaching that particular unit. The classes were filmed prior to any instruction, at the mid-point (the end of the first traditional unit), and at the end of the six weeks for subsequent observations using the Team Sport Assessment Procedure (TSAP) (Grehaigne, Godbout, & Boutier, 1997) to measure game performance outcomes of participants in both types of instructional models. Game performance (volume of play and efficiency index) was used as the primary indicator of student learning for this study (Grehaigne, et al., 1997; Mitchell, Griffin, & Oslin, 2008; Oslin, Mitchell, & Griffin, 1998). Results showed that participants' volume of play in the traditional group decreased from pre- to post-testing in the second three-week unit, $t(1, 29) = -2.177$, $p<.038$. No other differences occurred between groups from pre- to post-test in the other units or from after the mid-point of the hybrid unit. Because of this, it is possible to suggest that participants learned game performance tactics equally well in both types of units. Because both groups were assessed after three weeks of the same unit (ultimate frisbee), the lack of significant differences at that point may suggest that an

even longer instructional unit is needed to determine if game performance differences exist between the two instructional models. These results may also suggest that students in traditional units can learn to play the game tactically as well as students in a hybrid (Sport Education and Teaching Games for Understanding) unit if the hybrid unit is shorter than the recommended longer unit duration.

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CHAPTER ONE

INTRODUCTION

Sports have a huge impact on society today. Many sports figures are known throughout the world**.** Participation in sports has increased as opportunities for sport participation has grown for participants including women, minorities, individuals with disabilities, and senior citizens. Individuals are engaged in sports activities from early childhood into adulthood. At the same time, sport organizations in the communities have increased the number of opportunities for participants to engage in many types of sport activities (Semotiuk, 2007). This frequently provides these individuals with the recommended amounts of physical activity in order to be healthy (Hagberg, & Lindholm, 2005). Because of the relationship between sport participation and a healthy lifestyle engagement, physical education teachers continue to seek ways to teach sports units so that students can become as competent at game playing as possible and remain physically active. Games are characterized by an integration of skills, strategy, social dynamics, and opportunities that are both predictable and also unpredictable. This combination helps to make games meaningful and pleasurable (Butler & Griffin, 2010).

Curricula that include instructional models that provide students with engagement in instructional strategies and opportunities to apply these strategies in game-like situations allow students opportunities for success in physical education. Recent innovative instructional models that combine tactical skill practice with modified, simulated and/or small-sided authentic games are being used by physical educators today. Two of these more recent innovative instructional models that are used today include Teaching Games for Understanding (TGfU also called the Tactical Games Approach) and Sport Education model (SEM). The TGfU model was developed by Bunker and Thorpe (1983) and modified more recently by contemporary experts in physical

education teacher education (Butler & Griffin, 2010; Mitchell, Oslin, & Griffin, 2006) to provide students with learning experiences that are more realistic and which emphasize tactical decisions (strategies) by learners. The basis for this model's implementation is that physical educators want students to enjoy the excitement of playing games and be able to understand the strategies involved which could allow them more success in game play. This approach teaches students games by playing games. The small-sided games with simplified rules allow the students to play games which represent the real games. The modified games allow the students opportunities to practice game skills and strategies before being asked to execute them in real game settings. Games are categorized into four categories: net games (badminton, volleyball, tennis, etc.); target games (archery, horseshoes, bowling, golf, etc.); striking or fielding games (softball, baseball, cricket, etc.); and, invasion games (soccer, basketball, lacrosse, hockey, team handball, etc.). Games within each group have similar strategies that can be used for solving problems within game play. Teachers are encouraged to point out the similar strategies involved in each game type so students can transfer the strategic information to the next sport (Mitchell, Oslin, & Griffin, 2006). Mitchell, Oslin, and Griffin (2006) developed a contemporary version of the TGfU instructional model that had been implemented in the schools in England with an emphasis on critical thinking and decision making during modified game play in physical education (Griffin, Mitchell, & Oslin, 1997).

Another model that has been recently established in contemporary physical education programs is the SEM**.** Siedentop (1994) introduced this model to the physical education community and then other professionals in the field began to advocate its use in the schools (Kinchin, Quill, & Clarke, 2002) and investigate its impact on student outcomes (Carlson & Hastie, 1997; Hastie, 1996, 1998a, 1998b, 2000; MacPhail, Gorely, Kirk, & Kinchin, 2008;

Sinelnikov & Hastie, 2010). SEM attempts to provide students with the opportunity to engage in game play but also to gain an appreciation of the traditions, strategies, and structure of the sport. The students are involved with the sport from more than just the perspective of the player. SEM is based on six key features of the sport experience that form the basis for authenticity: (a) sport is implemented by seasons; (b) players are members of a team and remain with that team for the entire season; (c) seasons are formed by formal competition with teacher and student directed practices sessions; (d) there is a culminating event to each season; (e) students are responsible for record-keeping throughout the season; and, (f) there is a festive atmosphere throughout the season. The seasons typically last nine weeks or longer in contrast to the multi-activity units which may last no more than three weeks and typically do not incorporate many of the features of the sport experience (Siedentop, Hastie, & van der Mars, 2004). Siedentop, et al. (2004) designed the model to promote the development of competent (psychomotor and cognitive learning domains), literate (cognitive and affective domains), and enthusiastic (affective) sportspersons. Their goal was that by being engaged with the model, students would become players of the sport, understanding it from a variety of perspectives. Participants are not just "playing a game" but they are developing an understanding of traditions, organization, and all that is involved with the game.

Several theories form the basis for these instructional models. Both instructional models align with Applebee's (1996) theme by providing students with opportunities to engage in knowledge in action and Brian Cambournes' Condition or Learning Theory (1988), which focuses on the motivation of students to perform successfully. Also, play theory (Huizinga & Caillois, 1955) provides the basic foundation for SEM in that sport is a form of play and this theory suggests that play is passed down between generations in society and is a part of the

traditions of various populations. In addition to play theory, the situated learning theory also provides the theoretical framework and connection between SEM, TGfU, and Cooperative Learning (Dyson, Griffin, & Hastie, 2004). All of these theories focus on student-centered learning curricula as opposed to a teacher-centered teaching curriculum. This combination of instructional models promotes active learning that involves the processes of decision making, social interaction, and cognitive understanding for students (Dyson, Griffin, & Hastie, 2004). These models allow students to develop tactical and skill competency in more authentic modified game activities rather than the traditional approach that focuses more on the technical approach that emphasizes more individual and partner-based isolated skill drills before some version of the full-sided game is played (French, Werner, Taylor, Hussey, & Jones, 1996; Metzler, Lund, & Gurvitch, 2008).

Traditional models for teaching sport in physical education typically overlook the more realistic phenomena that occur in athletic seasons and do not focus on the tactical components necessary for meaningful participation during games (Hastie, 2003). Recently, these two instructional models (TGfU and SEM) have been combined in middle school and high school physical education units in order to allow students to benefit from both models (Gubacs & Collins, 2010; Pritchard & McCollum, 2009). Although the two models have been studied in the literature in terms of student outcomes, little has been published on student outcomes generated within a combined unit that uses elements of both models. The primary intent of TGfU's approach, according to Metzler (2006), is to develop student tactical knowledge that allows for competent skill work in small-sided games. These small-sided games are frequently used in TGfU (and SEM), affording students more opportunities to be involved more in the game action and to use on-the-ball and off-the-ball skills more than full-sided games (Kern & Calleja, 2008).

The SEM involves using a variety of instructional strategies and creates more realistic environments for playing the games in order to allow opportunities for students to become competent, literate, and enthusiastic sports players (Siedentop, et al., 2004, 2011).

Statement of the Problem

Little has been published on student outcomes generated within a combined unit that uses elements of both the SEM and the TGfU model. Consequently, it is important to study the game performance outcomes of students in a hybrid model that combines these two models. In this study, a physical education teacher tought one middle school class using such a hybrid instructional model and another class using traditional strategies typically found within the multi-activity model (Metzler, 2006). The classes were filmed and participants' game performance will be assessed with an observation instrument that is designed to determine game decisions and involvement of participants. This allowed the investigator to determine the impact of the hybrid instructional model on the game performance of middle school students.

Statement of Purpose

Student opportunities for successful participation and positive attitudes toward lifelong success in pursuing a healthy lifestyle can be affected by the instructional strategies implemented in a physical education class. The TGfU instructional model and the SEM are designed to impact student outcomes positively in physical education for both male and female students by providing appropriate learning opportunities. A trend has recently emerged in the literature in which these two models have been combined together by practitioners in some format thus allowing K-12 students to receive the benefits of both models (Gubacs & Collins, 2010; Pritchard & McCollum, 2009). By using the TGfU model (Butler & Griffin, 2010; Griffin & Butler, 2004; Mitchell, et al., 2008; Slade, 2010) and the SEM (Bulger, Mohr, Rairigh, &

Townsend, 2007; Siedentop, et al., 2004, 2011), teachers would be able to use a combination of pedagogical strategies that integrate physical activity and tactical-based sport instruction in meaningful, realistic game-like situations that promote critical thinking and social interaction within small groups. Research has found that boys and girls prefer such instructional models like this rather than the traditional technical model often seen in physical education in many schools (Gurvitch & Lund, 2009). The purpose of this study was to determine the impact of a hybrid version of SEM and TGfU on middle school students' game performance outcomes.

Research Questions/Hypothesis

The primary research question for this study was:

Will middle school students improve game performance more following instruction in traditional sport-based lessons or during physical education lessons when a teacher uses a hybrid instructional model that combines the Sport Education Model and Teaching Games for Understanding?

Game performance (volume of play and an efficiency index) will be used as the primary indicator of student learning for this study (Grehaigne, Godbout, & Boutier, 1997; Mitchell, Griffin, & Oslin, 2008; Oslin, Mitchell, & Griffin, 1998). The hypothesis states that the implementation of a hybrid instructional model combining SEM and TGfU will impact middle school students' game performance outcomes more than the traditional instructional model. The null hypothesis states that there would be no difference between the two groups on the game performance score.

Significance of the Study

By looking at game performance levels of K-12 students in hybrid and traditional units, it is possible to begin a research stream on such hybrid model outcomes in the physical education

literature. With positive results, it might be possible then for physical educators to implement instructional units regularly that incorporate effective components from both SEM and the TGfU within the same units. The literature is clear that students prefer the structure of contemporary instructional models over traditional instructional models which typically do not develop game competency and focus on isolated practice of skills. In these two contemporary models which have been blended into a hybrid model, skills are still practiced by students but in more meaningful game-related contexts so that tactical strategies can be learned concurrently. This then allows students to learn to use the skills while playing the game, thus teaching them to play the game better rather than to be really good at discrete skill practice with partners. If more students learn to play sports more competently and tactically, it is possible that they will continue to play as they transition into other life stages (Semotiuk, 2007). Perhaps such regular participation may help decrease the obesity and diabetes levels in our country because individuals are engaged more in physical activities at which they are more competent (Hagberg & Lindholm, 2005).

Definitions

Hybrid Model--an instructional model that combines elements of the Sport Education Model and Teaching Games for Understanding based on the recommendations of the literature (Gubacs-Collins & Owens, 2010; Pritchard & McCollum, 2009).

Sport Education Model--produces competent, literate, enthusiastic sportspersons.

Success--competent, literate, tactically thinking, enthusiastic sportspersons.

Teaching Games for Understanding--combines decision-making processes with game-play competence.

Student Learning--assessment of game performance measured with the Games Performance Assessment Instrument (TSAP) developed by Grehaigne, Godbout, and Boutier (1997) for invasion games.

Limitations

1. Possible inadequate skill and tactical development due to the role of students as coaches in a unit.

2. Physical inactivity may be limited when students are engaged in the non-playing roles in the Sport Education mode (ex: scorekeeper, statistician).

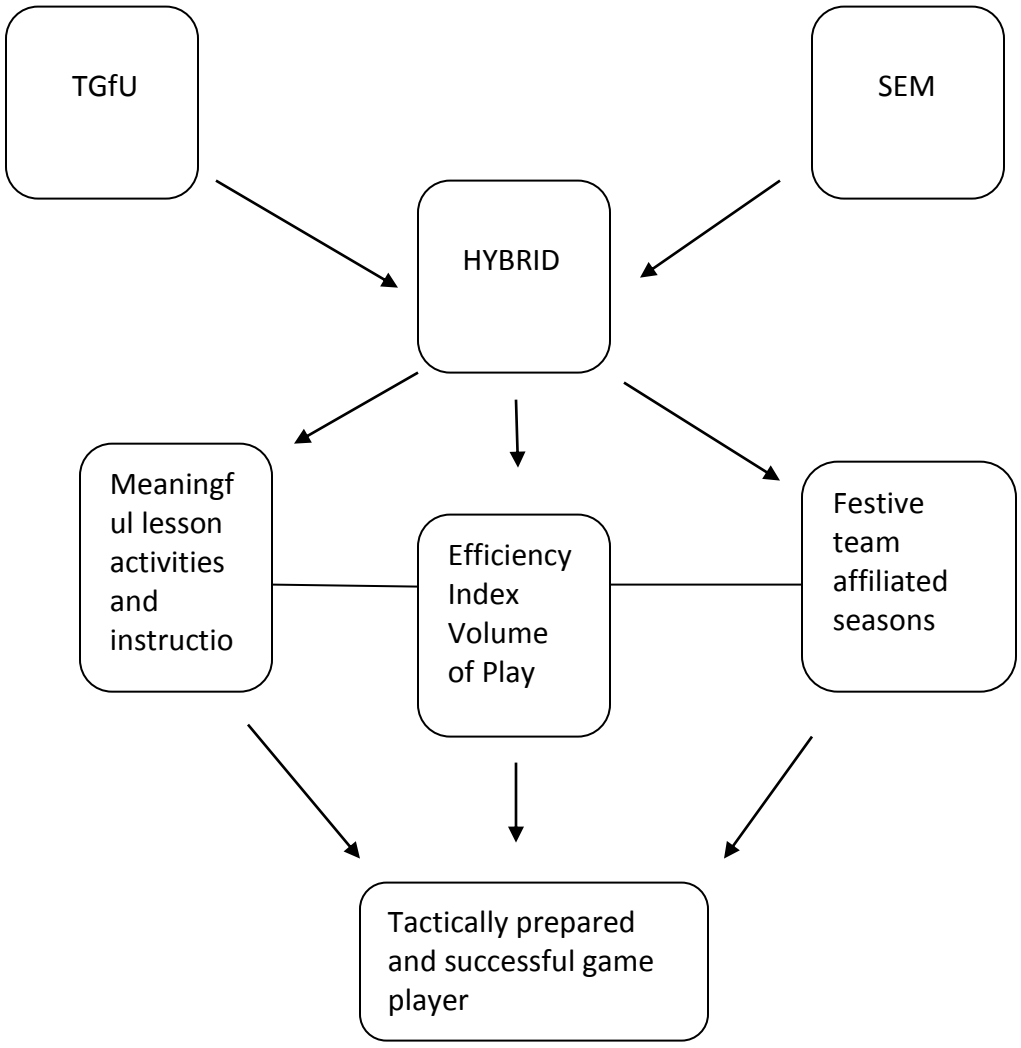

Figure 1. Conceptual framework for Teaching Games for Understanding and Sport Education Model.

Tactical problem- attacking the goal

Lesson Focus – Create passing lanes by using on-the-ball and off-the-ball movement

- Teacher creates four teams of five students randomly. Teacher will send each team to a specific half court area (may need to use the sidelines as well). Students play two v two; cones should be placed to mark two v two areas for five-minute game play. Pennies and Frisbees are needed.
- Demonstrate passing and catching with a partner. Designate lines. Send teams back to their area to begin.
    - Partner passing; two minutes
    - Triangle passing with a passive defender; one minute each
    - Triangle passing with an active defender; one minute each
    - Rotate positions on the whistle.
- Five v five game play; Offense must complete two passes before scoring; two games going on simultaneously five minute games; rotate teams
- Questions:

    1. What was the goal of your game?

    Complete two passes before scoring.

    2. When you were passing, what did you do to keep the defense from stealing the ball?

    Used arms and body to protect the ball; used ball fakes and jukes to throw off the opponent.

Figure 2. Teaching Games for Understanding sample lesson plan for ultimate frisbee.

Based on the results from the previous lesson, the teacher created five teams of four students based on ability level for balanced competition in the ultimate frisbee unit.

- Teacher will send each team to a specific half court area (may need to use the sidelines as well for the fifth team). Pennies and frisbees are needed. Students will play two v two; cones should be placed to mark two v two areas for five-minute game play.
- The teacher will bring all students to the middle and go over the team roles (coach, equipment manager, statistician, scorekeeper, referee). The teacher will give each team three minutes to designate primary roles (roles may switch based on need) and create a team name. Paper and pencils will be needed.
- Demonstrate passing and catching with a partner. Designate lines. Send teams back to their area to begin.
    - Partner passing, stationary; two minutes
    - Partner passing moving towards the cone; two minutes
- Four v four; two games going on simultaneously with team five being the referees and scorekeepers. Five minute games; rotate teams
- Closure includes a review of the concepts learned in the lesson.
- Teacher will create folders with team name and rosters.

Figure 3. Sport Education Model sample lesson plan for ultimate frisbee.

CHAPTER TWO

REVIEW OF LITERATURE

Curriculum in our schools tends to be based on what someone thinks is worth knowing. Superficial knowledge is stressed as opposed to knowledge-in-action (Applebee, 1996) which emphasizes understanding the meaning and the why of a particular content. Knowledge-in-action stresses critical thinking on the part of the students and allows opportunities for students to understand the content's deeper meaning. Traditions, meaning the handing down of statements, beliefs, legends, and customs can provide students tools with which to understand various experiences and use that understanding to learn from the past to better the future. Traditions in sports involve players wearing uniforms, the use of referees, announcers, beginning play with a jump ball in basketball and a coin toss in football, keeping statistics on game play, etc. Traditions can play a powerful role in education in students' understanding of how various traditions relate to the content of what educators teach and how the content is taught (Applebee, 1996). Traditions can also transform students' minds to think beyond themselves and be used as tools the students' can use to understand and change the world.

The SEM and the TGfU model are both instructional models that provide students with opportunities to learn the traditions of games and to engage in small-sided games so they can apply the skills and strategies in game like situations in preparations for being successful in game play. These instructional models provide students with the opportunities to share and transfer information, interact socially, and know when to appropriately use different ways of interacting (think critically). Several theories form the basis for these instructional models. Both instructional models align with Applebee's (1996) theme by providing students with opportunities to engage in knowledge in action and Brian Cambournes' Condition or Learning

Theory (1988), which focuses on the motivation of students to perform successfully. Also, play theory (Huizinga & Caillois, 1955) provides the basic foundation for SEM in that sport is a form of play and this theory suggests that play is passed down between generations in society and is a part of the traditions of various populations. In addition to play theory, the situated learning theory also provides the theoretical framework and connection between SEM, TGfU, and Cooperative Learning (Dyson, et al., 2004). All of these theories focus on student-centered learning curricula as opposed to a teacher-centered teaching curriculum. This combination of instructional models promotes active learning that involves the processes of decision making, social interaction, and cognitive understanding for students (Dyson, et al., 2004). The SEM and the TGfU model provide students with the opportunities to share and transfer information, interact socially, and know when to appropriately use different ways of interacting (think critically) which will allow students to be successful in game play.

Theoretical Framework

Relevance of Cambourne's Condition or Learning Theory

The basis for providing students with opportunities for successful participation and positive attitudes toward lifelong success in pursuing a healthy lifestyle can be found in Brian Cambournes' Condition or Learning Theory (1988). He suggests that the minimum daily requirement for a motivated individual includes the following: (a) immersion; (b) engagement (safe from ridicule and punishment); (c) demonstration; (d) expectations; (e) responsibility (giving choices builds responsibility); (f) approximation (not being overly concerned about mistakes); (g) use (time and opportunities to use skills); and, (h) response (feedback).

The TGfU instructional model and the SEM allow students opportunities to engage in the listed requirements suggested by Cambourne. The students are immersed in the sports in a

variety of roles such as player, coach, scout, statistician, referee, etc. Being a part of a team provides a safe environment. Coaches, players, and teachers provide demonstrations of skills, sport strategies, and expectations for success. Students are given opportunities to demonstrate responsibility in fulfilling the roles as part of their team. The focus is on team play and interactions so that there is not much concern over individual mistakes. Teams are provided practice time and modified game time to work on skill and strategies in game situations. Students are given feedback by coaches, teammates, and the teacher. These instructional models are designed to impact student outcomes positively in physical education for both male and female students by providing appropriate and authentic learning opportunities.

Relevance of Applebee's Knowledge-in-Action Theory

Arthur Applebee (1996) suggests that learning is knowledge in action which leads to individuals engaging in an authentic learning experience. Both the SEM and the Tactical Games Approach (TGA) provide students with opportunities to learn the traditions of games and to engage in small-sided games so they can apply the skills and strategies in game like situations in preparations for being successful in game play (Mitchell, et al., 2006; Siedentop, et al., 2004, 2010). Traditions in our society play a big part in molding our learning experiences. According to Applebee (1996), the traditions at home and in the community form the initial basis of our learning. Then as we move into school settings traditions having to do with formal learning begin to take place. Some examples include how we share and transfer information, interact socially, and knowing when to appropriately use different ways of interacting. Storytelling is also another example of knowledge in action. Our knowledge base can increase as we mature and learn what is and is not appropriate in different situations. School and work settings provide opportunities to experience new ways of doing things and learning how to respond appropriately.

This is all based on traditions that have been taught to us and are valued in our culture. Traditions provide us the" tools for making sense of and living in the world." The SEM and TGfU provide students with the opportunities to share and transfer information, interact socially, and know when to appropriately use different ways of interacting. Both instructional models align with Applebee's (1996) theme by providing students with opportunities to engage in knowledge in action.

Relevance of Play Theory

Play theory provides the basic foundation for SEM in that sport is a form of play. Huizinga and Caillois (1955) suggest that play is passed down between generations in society and is a part of the traditions of various populations. Music, art, and drama are also forms of play which share similar characteristics of sport in society. Student opportunities for successful participation and positive attitudes toward lifelong success in pursuing a healthy lifestyle can be affected by the instructional strategies implemented in a physical education class. Along with play theory, Situated Learning provides a framework to theorize and analyze pedagogical practices in physical education (Kirk & Macdonald, 1998). Within the blending of TGfU with SEM, students are able to learn in a structure that utilizes the festivity of realistic seasons passed down from generation to generation in society today.

Relevance of Situated Learning Theory

Situated learning theory is one component of a broader constructivist theory of learning in physical education. Perkins (1999) suggests that there are three parts of constructivism: (a) the active learner; (b) the social learner; and, (c) the creative learner. Active learners are students who are not passive recipients of knowledge, but instead are involved in tasks that provide opportunities for decision making, critical thinking, and problem solving. As social learners,

students are given opportunities to engage in social interaction with their peers, facilitated by their teachers.

As creative learners, students are provided with experiences in which they can discover knowledge themselves and create their own understanding of the subject matter drawing on prior knowledge and experiences (Griffin & Placek, 2001). Situated learning provides the theoretical framework and connection between SEM, TGfU, and Cooperative Learning (Dyson, et al., 2004). The structures of SEM, TGfU, and Cooperative Learning focus on student-centered learning curricula as opposed to a teacher-centered teaching curriculum. This combination of instructional models promotes active learning that involves the processes of decision making, social interaction, and cognitive understanding for students (Dyson, et al., 2004). The TGfU and the SEM are designed to impact student outcomes positively in physical education for both male and female students by providing appropriate learning opportunities. This is meaningful because physical education provides one avenue with which to pass down sport traditions in our culture (Metzler 2005).

The rationale for implementing these two models cannot be isolated within one theoretical model without giving up any substance of the instructional models involved. It is apparent that these multiple theoretical models each comprise elements that relate specifically to these two models. This is demonstrated further in the evolving research that continues to be generated in relation to these two and other contemporary instructional models in physical education.

Empirical Research

In physical education, contemporary instructional models such as the SEM and the TGfU model, have been found to effectively impact student outcomes (Mitchell, et al., 2006;

Siedentop, et al., 2004, 2010). They have also been recognized by teacher education experts as conducive to providing authentic learning experiences. These instructional models align well with Applebee's (1996) Authentic Learning Theory because of the structures that enable students to be placed in authentic learning situations. While Ennis' Sport for Peace (2003) and Hellison's Teaching Personal and Social Responsibility (Hellison, 2003) models offer teachers alternatives for reaching certain goals and objectives, the primary instructional models that align with the Authentic Learning Theory are the TGfU model, SEM, and the Tactical Games Model (TGM), which is a simplified version of TGfU (Butler & Griffin, 2010). For the purpose of this paper, the TGM was considered apart from TGfU only when specifically referred to as a part of the literature review. Otherwise, references to the model were considered also as references to TGfU. Collier, Oslin, Rodriguez, and Gutierrez (2010) provide further understanding of the differences by noting that Bunker and Thorpe (1983) originally included six stages within the TGfU model, while the TGM collapsed those six stages into the following: (a) The game form emphasizing modification-exaggeration; (b) decision making; and, (c) skill development.

Butler and Griffin's (2010) TGfU theoretical sequel provides a description of how TGfU encompasses the TGM:

> Within both the Tactical Games Model and TGfU, each lesson begins with a conditioned game with a clearly stated goal. The game is followed by a question-and-answer segment intended to guide students toward one or more solutions to the tactical problem set forth in the initial game. Students are then given a task in which to practice the solutions before returning to game play to apply the solution. The TGA is to utilize the tactical frameworks to highlight developmentally appropriate levels of performance and game categories to promote curricular implications of TGfU. (Collier, et al., 2010, p. 50)

Therefore, although the TGM is included in the literature as its own entity, it was considered as part of TGfU for the purposes of this paper. With that in mind, the two contemporary instructional models discussed in the remainder of this paper are TGfU and SEM.

In support of the types of benefits these two instructional models provide to learners, Kirk (1983) developed the idea of "intelligent performance" in an effort to define the "understanding" approach. The intelligent performance suggests that there is more to understanding than simply knowing the facts and being able to perform the skills. The intelligent performer can choose the appropriate strategy needed for a particular situation, thus providing evidence of knowledge in action. Both instructional models presented allow students opportunities to not only know the facts and skills but to also effectively use them in game situations. It is necessary to look more deeply at these models and relevant literature findings to support their use to impact student outcomes.

Teaching Games for Understanding

The TGfU model was developed by Bunker and Thorpe (1983) and modified more recently by contemporary experts in physical education teacher education (Butler & Griffin, 2010; Mitchell, et al., 2006) to provide students with learning experiences that are more realistic and which emphasize tactical decisions (strategies) by learners. The basis for this model's implementation is that physical educators want students to enjoy the excitement of playing games and be able to understand the strategies involved which could allow them more success in game play. This approach teaches students games by playing games. The small-sided games with simplified rules allow the students to play games which represent the real games. The modified games allow the students opportunities to practice game skills and strategies before being asked to execute them in real game settings. Games are categorized into four categories:

net games (badminton, volleyball, tennis, etc.); target games (archery, horse shoes, bowling, golf, etc.); striking or fielding games (softball, baseball, cricket, etc.); and, invasion games (soccer, basketball, lacrosse, hockey, team handball, etc). Games within each group have similar strategies that can be used for solving problems within game play. Teachers are encouraged to point out the similar strategies involved in each game type so students can transfer the strategic information to the next sport (Mitchell, et al., 2006).

Research on Teaching Games for Understanding Outcomes

In one of the earliest published studies on the model, Thorpe, Bunker, and Almond (1984) looked at the problems teachers may have when implementing TGfU and found two basic difficulties with the TGfU model: (a) teachers had trouble breaking from the traditional way of teaching; and, (b) teachers struggled to find resources to help with modifying games. Many teachers want to continue to teach using the multi-activity model which provides students two-to-three-week units exposing them to a variety of sports which is a much shorter unit than most SEM units which can last up to nine weeks. The developers of the TGfU model also suggest the use of small-sided games which some teachers have found difficult to create. In a recent study, investigators studied what five in-service teachers in a large European city thought about planning and implementing TGfU into their program (Diaz-Cueto, Hernandez-Alvarez, & Castejon, 2010). Results indicated that teachers were hesitant to use the model due to anxiety related to the newness of the model to them but that their satisfaction with the model increased after implementing the model. They found that students participating in TGfU-based lessons improved decision-making in games, tactical problem-solving, and their overall comprehension of the game Diaz-Cueto, et al., 2010).

In the 1990s, a line of empirical research was established that compared TGfU to the more traditional approach (multi-activity model). Turner and Martinek (1995, 1999) and Allison and Thorpe (1997) conducted studies demonstrating the effectiveness of the TGfU model in contrast to more traditional strategies. Turner, Allison, and Pissanos (2001) also reported that TGfU contributed to students' improvement of skillfulness, including tactical knowledge related to invasion games. Additionally, Rink (1996) and Rink, French, and Graham (1996) compared the effects of a three-week and six-week unit of technical skill with instructional units that combined tactical and skill instruction during a badminton unit in a ninth grade physical education class. They found a significant improvement in students who learned the game over six weeks as opposed to those who learned the game over a three-week period. A similar investigation by the authors structured three consecutive two-week units over a six-week period and studied the differences in student outcomes of that type of instructional structure with a six-week structure that used the TGfU approach. It appears that the characteristics of these models may play a part in the decisions by teachers to use them to guide their teaching.

Characteristics of Teaching Games for Understanding

Griffin, Mitchell, and Oslin (1997) modified the TGfU approach by focusing the games teaching on using small-sided games to focus on a particular tactical problem. The game-practice-game format allows students to experience game-like situations before focusing on practicing specific skills. The teachers' role involves helping the students understand the game, observe game play, identify performance problems, and provide feedback to help students improve their game performance. Game performance observation can be difficult because student responses to game situations can be difficult to define. Observers need to be able to identify not only "on the ball" skills but also "off the ball" skills which involve aspects of game

play used when students do not have possession of the ball. Mitchell and Collier (2009) provide a framework used for diagnosing performance problems in invasion games. This framework provides teaches with a plan for assessing student performance during game play. Mitchell, et al. (2006) simplified the TGfU by condensing the model to emphasize three components of the initial model: (a) modified game play; (b) developing tactical game play and decision making; and, (c) integrating simple tactical problems, frameworks, and levels of complexity. They identified this new version as the TGM, thus demonstrating the difference between the primary TGfU model and TGM which is also considered part of TGfU as previously discussed. Butler and Griffin (2010) suggest revising the TGM based on four pedagogical principles. The first principle indicates the need for games to be presented to children in the simplest form. Modifications have been attempted but Butler and Griffin suggest the need to reduce even more the problems and technical demands children face during game play. Rule changes, adjusting the playing area, times frames, modifying the size of the implements and ball types used, and decreasing the technical demands placed on the children are all modifications suggested by Butler and Griffin to increase the student success in game play. The second principle involves the need for physical educators to shape the games in order to meet the developmentally appropriate needs of the children. Shaping involves creating appropriate learning opportunities to meet the needs of the students. Developing game sense is the third principle. Physical educators need to provide students the opportunities to understand games and make intelligent decisions which will help students develop game sense. Butler and Griffin (2010) define game sense as "representing a whole mind-set in which players accumulate the wisdom to make intelligent decisions about their play." Game sense not only helps their understanding of the game but it also allows the students the ability to see themselves and how they fit into the overall

game scheme. The fourth principle is the pedagogy of engagement. According to Butler and Griffin, this was not addressed in the first wave of TGA. This involves teachers reaching out to students, connecting and engaging with them, pulling out their confidence, and seeing their potential and capabilities. By effectively implementing the four principles offered by Butler and Griffin (2010), the tactical approach will allow students to have the opportunity to understand why each skill is important in relation to the whole game experience.

Another point of emphasis related to TGfU by Butler and Griffin (2010) involves applying movement concepts (Laban, 1963) to these models. Laban defines movement based on body awareness (what the body does), space awareness (where the body moves), effort (when and how the body moves), and relationship (with whom the body moves). These concepts can easily be applied to describe a variety of movements in which players engage during game play. Taught in a developmentally appropriate progression, they can enhance the students' development of tactical skills. Butler and Griffin (2010) contend that by students applying these movement concepts to their game play, they will gain a better understanding of the overall concepts of the game which can improve their decision making ability during game play. Rovegno (2008) advocates applying the movement skill to developing tactical skills as early as kindergarten. For example, the skill of catching can be used to develop tactical skills when performed by students as teachers modify the following types of conditions: (a) placing students in different areas of the playing field; (b) having students perform while stationary; (c) having students perform skills such as catching while moving to create passing lanes; (d) having students catch while moving at different speeds with and without defenders; (e) and, catching with different types of balls. Also, teaching students' new terminology and language can help them better understand and apply tactical skills. For example, instead of asking students to "get

open," Butler and Griffin (2010) suggest communicating to students to create a passing lane by moving from personal to general space. This can allow students to learn skills from the movement of play rather than from isolated drills. The TGfU model provides students with developmentally appropriate learning experiences that are more realistic (game-like) and which emphasize tactical decisions (strategies) by learners. For example, when the focal point of the lesson is offense, teachers may want to increase the number of offensive players to allow for more offensive opportunities for success. An example of this might be putting three players (defense) against four players (offense) in a modified game. Another example would be that teachers could increase the size of the playing field or scoring area to allow for more opportunities for the offense to succeed. Teachers may also place certain conditions on the game to emphasize certain tactics or skills. For example, the players must pass the ball three times before they can attempt a shot on goal. This promotes the opportunity to practice maintaining possession of the ball, passing skills, creating open space, evading the defender, and emphasizing team play. This is supported in recent research by Grehaigne, et al. (2010) who studied over 198 video sequences of student soccer performance related to plays that led to shots on goal. After analyzing ball exchanges within teams and the number of player restarts, patterns of play sequences were documented. This allowed the researchers to determine that eight offensive configurations were more effective than others in generating better ball circulation tactics in game play in soccer (Grehaigne, et al., 2010).

In a related study, the TGfU model was used by two high school soccer coaches during their practice sessions (Harvey, Cushion, & Massa-Gonzalex, 2010). Both coaches attempted to change their practice sessions to include parts of the TGfU model but neither coach totally adopted the model. Changing their established ways of coaching was difficult. The research did

demonstrate the positive effects of using TGfU with high-school soccer players. Players engaged in small-sided games which led to faster player responses and quicker off-the-ball movements as compared to the traditional drill practice focus. They also found an increase in the number of appropriate game responses by the players (Harvey, Cushion, Wegis, & Massa-Gonzalez, 2010). This showed the effectiveness of TGfU's constructivist approach in using modeling and efficient-action rules (if this happens, then do this) and the usefulness of the model to help physical education professionals design effective learning games to promote game understanding better.

TGfU is a learner-centered approach intended to develop tactical understanding through modified game play. Physical educators want students to enjoy playing games and being physically active and to be able to understand the strategies involved which could allow them more success in game play. It is clear that the literature supports the use of TGfU due to findings that suggest students receive more equitable opportunities for learning and benefit socially (Light & Butler, 2005). It is difficult to find a more representative statement than a summary recently written by Pope's comment that "TGfU has the potential to confirm the humanness of physical education and sport through the ways that it highlights interaction and the effective dimensions of games" (Pope, 2005, p 271). However, another instructional model offers benefits that students need if they are to learn to play specific sports competently.

Sport Education Model

SEM (Siedentop, 1994) began as a response to criticism of how team sports had been traditionally taught within physical education. Many programs across the United States have used the multi-activity model, which typically involved large–sided games, short units, and not much time spent teaching the strategies involved in the particular game (Siedentop & Tannehill,

2001). In an effort to provide students with an authentic sport experience, Siedentop helped establish SEM as an authentic model which provides students with the following a team affiliation, formal competition, and a culminating event such as a championship game**.** Siedentop found that this authenticity of sports was rarely reproduced in physical education classes. SEM is based on six key features of the sport experience that form the basis for authenticity: (a) sport is implemented by seasons; (b) players are members of a team and remain with that team for the entire season; (c) seasons are formed by formal competition with teacher and student directed practices sessions; (d) there is a culminating event to each season; (e) students are responsible for record-keeping throughout the season; and, (f) there is a festive atmosphere throughout the season. The seasons typically last nine weeks or longer in contrast to the multi-activity units which may last no more than three weeks and typically do not incorporate many of the features of the sport experience (Siedentop, et al., 2004). Siedentop designed the model to promote the development of competent (psychomotor and cognitive learning domains), literate (cognitive and affective domains), and enthusiastic (affective) sportspersons. His goal was that by being engaged with the model, students will become players of the sport, understanding it from a variety of perspectives. Participants are not just "playing a game" but they are developing an understanding of traditions, organization and all that is involved with the game. Much of the learning is based on cooperative learning strategies. Students are engaged in various roles all working together including roles such as coach, referee, statistician, scorekeeper, broadcaster, journalist, and other roles throughout the sport season which is typically 9 weeks long (or 20 or more lessons). Student roles allow them to engage not only in skill learning and game play but opportunities for leadership positions and ownership and responsibility for their team. This combination offers students a complete sport experience. As

the season progresses, less class time is spent on practicing skills and more time is spent involved in formal competitions. Game points are given in the traditional sense but showing good sportsmanship also earns teams points (Siedentop, et al., 2011).

Additionally, cooperative learning (CL) is used in SEM as students work with their individual teams to determine specific needs (Dyson, et al., 2004). The focus of learning is shifted to the student. CL promotes opportunities for each student to become a meaningful participant in learning. Students work in small groups (teams) to learn the material and are also responsible for helping their team-mates (Antil, Jenkins, Wayne, & Vadasy, 1998; Putnam, 1998). At the beginning of the instructional unit, direct instruction is used to set the overall structure for the season. Reciprocal teaching is used as the students engage in the coaching, referee and fitness instructor roles contributing to the main goal of developing students to be competent, literate and enthusiastic sportspeople. A competent sportsperson involves one who can participate successfully in game play. A literate sportsperson is one who understands the rules and traditions involved with the particular sport. An enthusiastic sportsperson is one who participates in the sport in a positive manner. This is significant because research has found that students have been enthusiastic about the culminating event, in particular, suggesting that students will be more motivated to participate in subsequent SEM seasons (Kinchin, Macphail, & Chroinin, 2009) when they know that a culminating event will be part of the structure. Why is SEM unique in generating intended game performance student outcomes?

The Uniqueness of the Sport Education Model

SEM has three main differences from formal sport. One being that participation is required by all students. Small-sided games allow for more opportunities for student success thus making participation by students more beneficial for students who may or may not typically

achieve success. Secondly, the competition is developmentally appropriate. Equipment and rules are modified to allow for more student success. The third difference involves the students being engaged in a variety of roles, including referee, statistician, scorekeeper, newsletter editor, blogger, broadcaster, etc.

Siedentop (1994) lists 10 specific learning objectives for those students involved in a sport unit using the SEM: (a) students will develop skill and fitness specific to particular sports; (b) students will appreciate and be able to execute strategic plays in sports; (c) students will participate at a level appropriate to students' development; (d) students will share in the planning and administration of sport experiences; (e) students will provide responsible leadership; (f) students will work effectively within a group toward common goals; (g) students will appreciate the rituals and conventions that give particular sports their unique meanings; (h) students will develop the capacity to make reasoned decisions about sport issues; (i) students will develop and apply knowledge about umpiring, refereeing, and training; and, (j) students will decide voluntarily to become involved in after-school sport. Students who have had a positive experience with sport in their physical education class will be more likely to engage in sport beyond the physical education class (Metzler, 2005). It is important, though, to identify the specific types of outcomes generated through instruction aligned with this model.

Outcomes of the Sport Education Model

The impact of the model on student outcomes has been tremendous, especially in the affective domain. Hastie and Carlson (1998) found student responses to SEM included student perception of improved skill ability, preference for the team concept (they like playing with the same group over a period of time), preference toward student coaches, and they liked the responsibilities involved with the various roles. Hastie and Sharpe (1999) studied how including

two specific fair-play interventions affected the student compliance with the games, student interactions, and leadership behaviors. Results indicated an increase in positive reactions among students and "accurate" monitoring of student social interactions. Subsequent studies resulted in the revision of an instructional model called Teaching for Personal and Social Responsibility (TPSR) model developed originally by Don Hellison (Hastie & Buchanan, 2000; Hellison, 2003; 2011). Hastie and Buchanan (2000) hoped to improve the performance of middle school physical education students by implementing fair play requirements into the sport education model. This model, Empowering Sport, was based on Hellison's (2011) TPSR model, and focused on sport, skill competence and social responsibility. These models have demonstrated a positive impact on students' attitude before, during, and after game play.

More recent research related to the affective domain as it pertains to SEM has focused on integrating fair play concepts (Vidoni & Ward, 2009), influence on student motivation (Spittle & Byrne, 2009), and the relation of SEM to satisfy those students who are typically unwilling to participate in normal class activities (Perlman, 2010). All three investigations demonstrate the effectiveness of SEM to generate positive affective outcomes. Perlman and Karp, (2010) found that social support from their teammates, playing, winning or losing as a team, affected the students motivation to engage in game play. Another study related to student motivation, determined that an SEM unit was instrumental in motivating students to engage in physical activity during an optional lunch time physical activity time (Wallhead, Hagger, & Smith, 2010). Additionally, the instructional model has been found to generate positive student interactions, depending on the particular status of the students who are participating (Brock, Rovegno, & Oliver, 2009). Economic level, attractiveness, athletic ability, and personality were the key types of status on which the authors focused in this study. Findings suggest that status influenced in

participation and social interaction as well as the amount of playing time students received in model-based lesson activities. To sum, group interactions frequently denied participating students opportunities to make decisions and even though access to group conversations was difficult to attain for the researchers, it was determined that status made a difference as to the social interactions between students in SEM activities in this particular situation (Brock, et al., 2009).

The SEM has provided positive benefits for teachers too. Alexander and Luckman, (2001) found that one of the major attractions of the SEM for teachers is that it allows them more opportunities to meet the needs of the individual students. SEM can generate positive student outcomes if teachers align the season's organization with student ability levels related to the playing and non-playing roles. Alexander, Taggart, and Thorpe (1996) reported that teachers who used SEM had "a spring in their steps." Teachers need to develop expertise in combining the competitive sport structure and instruction that is developmentally appropriate. The SEM model relies on game structures that are modified to meet the students' needs at their particular level of development. Turner and Martinek (1999) found that students involved in the traditional (multi-activity model) group demonstrated decreased amounts of improvement in game performance as compared with those in the SEM group. They concluded that the lower game performance level could be attributed to the traditional lessons which were not providing game-like opportunities for the students which were characteristic of the SEM lessons. Further supporting SEM's impact on game performance was a study of an ultimate frisbee unit using the SEM, Hastie (1998) also found improvements in students' game performance levels. Equity in the SEM is demonstrated in that all students play various roles. Teams are designed to be as fair as possible.

Research on Implementing the Sport Education Model

Research is limited in regard to how teachers learn to effectively implement SEM within their curriculum. A few studies have suggested that it takes time for even experienced teachers to effectively implement this model into their physical education program (Hastie & Curtner-Smith, 2006; Pope & O'Sullivan, 1998). Stran and Curtner-Smith (2009) studied the impact of teaching using the SEM on two preservice teachers. Occupational socialization (transitioning from preservice teaching into the work place) was used as the theoretical foundation for determining the preservice teachers engagement with the SEM. Results indicated the preservice teachers demonstrated a commitment to teaching using the model and the ability to implement the model during their student teaching experience. Some of the commitment to teaching using the model and the ability to effectively implement the model appeared to be more likely if opportunities were provided for preservice teachers to practice teaching using the model in early clinical teaching experiences prior to their student teaching experiences. The authors followed up more recently with this line of investigation by focusing on the type of knowledge that two student teachers perceived to be most useful when implementing SEM (Stran & Curtner-Smith, 2010) in middle school physical education classes. Within this study, the two student teachers who had been formally trained to use SEM in coursework and early field experiences were asked to provide key information related to which of the following knowledge types worked most effectively while teaching within the model. Results indicate that the following knowledge types contributed more significantly to instructional success in the model: (a) general pedagogical knowledge; (b) content knowledge; (c) pedagogical content knowledge; and, (d) knowledge of learners. This was in contrast to more ineffective knowledge types: (a) knowledge of educational contexts; and, (b) knowledge of educational ends, purposes, and values. The

researchers concluded that curricular knowledge played the most important role in the level of success the student teachers had in delivering SEM to middle school students. Additionally, the authors suggested that the preparation program at the university was very instrumental in preparing the student teachers for success teaching within this model structure due to the curriculum which supported SEM as an instructional model (Stran & Curtner-Smith, 2010).

Challenges of the Sport Education Model

The SEM is not without its challenges. Some challenges involved with implementing the SEM include the need to develop a strong management system. Also, because the coaches are students, teachers may need to help the student coaches extend the tasks to better meet the needs of the students. If a teacher wishes to emphasize health-related physical fitness, the focus of the SEM on non-playing roles limits the amount of physical activity engagement for some students during some class lessons. However, it is possible to modify the model to account for many of the criticisms. At any rate, the overwhelming research support for the benefits to the students of the model indicates the need to continue using the model in school physical education in some form.

Game Performance Assessment

The final research stream related to these models involves game performance assessment in physical education. Assessment of students' performance, knowledge, and behaviors can be done in various ways. Teachers can monitor game play by using records provided to assess student performance from the beginning of the season to the end. Another assessment strategy may involve recognizing students' performance in playing the game but also their performance in the specific roles in which they are engaged (referee, coach, etc.). Two primary instruments have been used more recently to measure the game performance of students within team sports.

The Team Sport Assessment Procedure (TSAP) developed by Grehaigne, Godbout, and Boutier (1997), and the Game Performance Assessment Instrument (GPAI) created by Mitchell, Oslin, and Griffin (2006) can be used to measure the performance levels of the participants in instructional units. Both instruments are designed to allow observers to record how often participants exhibit various game actions and decisions during game play situations. A performance index is generated in the TSAP which demonstrates the tactical performance level of students and how active participants are during game play. Teachers can then identify ways to assess whether students apply their knowledge and skill throughout the season.

The GPAI played an important role recently in one of the earliest published studies of SEM and its impact on performance outcomes (Pritchard, Hawkins, Wiegand, & Metzler, 2008). The investigators compared the impact of SEM as compared to the traditional multi-activity model on student outcomes that included motor skill achievement, knowledge, and game performance outcomes. The researchers filmed 20 lessons within a volleyball unit taught to one intact class using SEM and one class instructed with the traditional approach that employed more of an emphasis on technical skill development from isolated practice situations before moving into tournament play. The films were analyzed via the GPAI to determine the differences in game involvement and decisions, skill execution, and adjusting to opponent attacks within game play. Results indicated that the model generated significant differences between groups on game performance, decisions made, skill execution during game-play, adjusting during game-play, and game involvement. No differences were found between groups on skill achievement in isolated practice or on knowledge.

Combining Teaching Games for Understanding and the Sport Education Model into a Hybrid Model

There is a transition occurring within many physical education programs which involves moving from the traditional multi-activity model to models where students are provided more responsibility by engaging more in the decision making, organization, and active involvement in game play. These ideas suggest some changes in physical education curriculum. Rink (1996) proposed that two main principles should be involved in the physical education teacher's decision as to the sport content for the class. The first principle to consider should be to choose sports that will allow students opportunities for success. This will probably involve modifying the game to allow for the greatest amount of participation possible. Secondly, the students should be given ample time to play. By modifying games, students are given more opportunities to apply game strategy and skills which will then transfer to game play later in the unit. Implementing the proposed principles will take time. Longer units will be needed in order for students to engage appropriately in the tasks involved. The teacher's role moves more to one of facilitator which can allow him/her more time to work individually with students to meet their specific needs. Successful teachers have found that organization and classroom management are key to success when using these models. Gubacs-Collins and Olsen (2010) described the process of implementing TGfU with SEM. They suggest that combining the two models provides more opportunities for students to demonstrate significant improvements in their overall success during game play. They also note that students can experience meaningful engagement in the physical, cognitive, and affective domains. After experiencing physical education using these two models, the authors indicated that students "enjoyed going to physical education class." In a

similar position paper, Pritchard and McCollum (2009) also provided a description for physical educators to incorporate various aspects found within SEM and TGfU.

One of the first documentations of combining SEM and TGfU (Alexander & Penney, 2005) occurred in a way that highlights how assessment can guide instruction. By setting up lessons which focused on tactical demands in small-sided games within this hybrid model, physical education professionals were able to "teach under the influence." That is, their instructional planning was influenced by formative performance assessment. This can be seen in their unit organization to provide teachers ways to use game performance assessments on game day to plan for the subsequent lesson focus on the next class day which was called a clinic. These "clinics" on the subsequent days eventually moved from teacher control to student control. This hybrid combination was called Clinic Game Day (CGD) by these professionals.

However to date, few empirical research studies have been published related to the impact of combining these contemporary instructional models. In one study, the combining of the TGA with SEM found that combining these models increased how involved students were within lesson focus tasks during lessons (Nye, 2010). The researcher collected data related to real-time variables associated with Academic Learning Time in Physical Education (ALT-PE). Nye found that by organizing lessons within this combined model process, student engagement was maximized. This was done primarily by increasing the complexity of the task was seen in TGfU, under which the TGA falls, so that the students would stay motivated to participate due to being challenged.

Using behavioral variables related ALT-PE as one measurement component in their study on SEM, Pritchard, Hawkins, Wiegand, and Metzler (2008) studied the model in comparison to the traditional multi-activity model recently, but not as a combined hybrid model. They found

that students engaged in lessons guided by the SEM increased their game performance success significantly over time in comparison to the traditional approach. The researchers measured success by using motor skill tests, cognitive knowledge tests, and game performance. The main findings revealed that group differences were primarily seen in the game performance and skill execution during game play as opposed to during discrete, isolated skills testing (Pritchard, et al., 2008). These findings suggest the importance for determining the impact on game performance outcomes of a combined hybrid model that utilizes key components of SEM and TGfU.

Tactical problem- attacking the goal

Lesson Focus – Create passing lanes by using on-the-ball and off-the-ball movement

- Teacher creates four teams of five students randomly. Teacher will send each team to a specific half court area (may need to use the sidelines as well). Students play two v two; cones should be placed to mark two v two areas for five-minute game play. Pennies and frisbees are needed.
- Demonstrate passing and catching with a partner. Designate lines. Send teams back to their area to begin.
    - Partner passing; two minutes
    - Triangle passing with a passive defender; one minute each
    - Triangle passing with an active defender; one minute each
    - Rotate positions on the whistle.
- Five v five game play; Players must complete two passes before scoring; two games going on simultaneously five minute games; rotate teams
- Questions:

    1. What was the goal of your game?

    Complete two passes before scoring.

    2. When you were passing, what did you do to keep the defense from stealing the ball?

    Used arms and body to protect the ball; used ball fakes and jukes to throw off the opponent.

Figure 4. Teaching Games for Understanding sample lesson plan used during the ultimate frisbee unit.

Based on the results from the previous lesson, the teacher created five teams of four students based on ability level for balanced competition in the ultimate frisbee unit.

- Teacher will send each team to a specific half court area (may need to use the sidelines as well for the fifth team). Pennies and frisbees are needed. Students will play two v two; cones should be placed to mark two v two areas for five-minute game play.
- The teacher will bring all students to the middle and go over the team roles (coach, equipment manager, statistician, scorekeeper, referee). The teacher will give each team three minutes to designate primary roles (roles may switch based on need) and create a team name. Paper and pencils will be needed.
- Demonstrate passing and catching with a partner. Designate lines. Send teams back to their area to begin.
    - Partner passing, stationary; two minutes
    - Partner passing moving towards the cone; two minutes
- Four v four; two games going on simultaneously with team five being the referees and scorekeepers. Five minute games; rotate teams
- Closure includes a review of the concepts learned in the lesson.
- Teacher will create folders with team name and rosters.

Figure 5. Sport Education Model sample lesson plan used during an ultimate frisbee unit.

CHAPTER THREE

METHOD

A common criticism targeted at sport-based physical education instructional models is that the traditional and more commonly used models focus more on isolated skill practice between partners for a few lessons and then transition into game play immediately from there. The criticism specifically revolves around the lack of meaning and tactical competency development in these commonly used instructional models. More contemporary models have been implemented over the last couple of decades, providing K-12 students more opportunities for meaningful instruction that develops tactical competencies better. The TGfU and SEM have been found to affect student's game performance positively in physical education (Nye, 2010; Pritchard, et al., 2008). The basis for this model's implementation is that physical educators want students to enjoy the excitement of playing games and be able to understand the strategies involved which could allow them more success in game play. This approach teaches students games by playing games. The small-sided games with simplified rules allow the students to play games which represent the real games. The modified games allow the students opportunities to practice game skills and strategies before being asked to execute them in real game settings. Games are categorized into four categories: net games (badminton, volleyball, tennis, etc.); target games (archery, horse shoes, bowling, golf, etc.); striking or fielding games (softball, baseball, cricket, etc.); and, invasion games (soccer, basketball, lacrosse, hockey, team handball, etc). Games within each group have similar strategies that can be used for solving problems within game play. Teachers are encouraged to point out the similar strategies involved in each game type so students can transfer the strategic information to the next sport (Mitchell, et al., 2006). The primary intent of TGfU's approach, according to Metzler (2006), is to develop student tactical knowledge that allows for competent skill work in small-sided games. The SEM

involves using a variety of instructional strategies and creates more realistic environments for playing the games in order to allow opportunities for students to become competent, literate, and enthusiastic sports players (Siedentop, et al., 2004). SEM attempts to provide students with the opportunity to engage in game play but also to gain an appreciation of the traditions, strategies, and structure of the sport. The students are involved with the sport from more than just the perspective of the player. SEM is based on six key features of the sport experience that form the basis for authenticity: (a) sport is implemented by seasons; (b) players are members of a team and remain with that team for the entire season; (c) seasons are formed by formal competition with teacher and student directed practices sessions; (d) there is a culminating event to each season; (e) students are responsible for record-keeping throughout the season; and, (f) there is a festive atmosphere throughout the season. The seasons typically last nine weeks or longer in contrast to the multi-activity units which may last no more than three weeks and typically do not incorporate many of the features of the sport experience (Siedentop, et al., 2004). Siedentop, et al. designed the model to promote the development of competent (psychomotor and cognitive learning domains), literate (cognitive and affective domains), and enthusiastic (affective) sportspersons. Their goal was that by being engaged with the model, students will become players of the sport, understanding it from a variety of perspectives. Participants are not just "playing a game" but they are developing an understanding of traditions, organization and all that is involved with the game. Research has found that boys and girls prefer such instructional models like this rather than traditional technical models often seen in physical education in many schools (Gurvitch & Lund, 2009). Additionally, each of these two models offers components which benefit K-12 students, thus providing the rationale for combining the two models into one hybrid version that utilizes the strengths of each model. The

impact on game performance of these two models in contrast to the more traditional multi-activity model is important to be determined. The purpose of this study was to determine if a hybrid version of these two instructional models impacts students' game performance more than instruction guided by the traditional multi-activity instructional model.

Sample

The sample included 50 students (male and female) distributed between two seventh grade middle school physical education classes. All lessons were taught in two intact seventh grade physical education classes by one experienced physical education teacher in a rural town in North Central Pennsylvania. The physical education teacher had been involved in a pilot program the previous year using the SEM with seventh graders for a mini-unit. The teacher also completed an inservice day of instruction led by two university professors on using the SEM along with a brief overview of the TGfU model in physical education classes. Most participants came from low to lower-middle socioeconomic backgrounds and the majority of students' previous experience in physical education classes involved being taught with a direct style of instruction. None of the participants had any prior exposure to either the SEM or the TGfU model which were blended (hybrid group) for this study. Participants were selected by virtue of being enrolled in each of the two intact classes used as treatment groups in the study. Although using intact classes prevents a true random sampling of a population, this method is typically used in many investigations involving K-12 research in classrooms. Students not enrolled in the specific classes listed above were not included in the participant population. Furthermore, students without parental consent and student assent to participate were excluded from participation as well by engaging in alternate learning activities out of view of the camera on game performance assessment days.

Data Collection Procedures

During one semester of an academic year, the physical education teacher taught one seventh grade physical education class using the traditional multi-activity model focusing on two invasion games (ultimate frisbee and speedball) within a six-week period. This model was designed to expose students to many types of sports within a school year; therefore, the units are shorter in duration, frequently being completed in two or three weeks with a week of skill focus immediately followed by tournament play (Metzler, 2005; Siedentop & Tannehill, 2002). For a closer look at instruction aligned with the multi-activity model in physical education, please refer to Figure 1 which shows a sample scope and sequence of instruction. Participants within a second treatment group were seventh graders taught as an intact class for the same six-week period during which instruction on one unit (ultimate frisbee) was aligned with a contemporary instructional model which blends aspects of two contemporary models, the SEM and TGfU. For a closer look at a scope and sequence of instruction aligned with this hybrid instructional model (the combination of two models), see Figure 2. Because the structure of the models differs due to the traditional duration of instructional units, it was necessary to organize data collection to account for these differences. This was due to the short duration of the model and the longer duration of the contemporary hybrid model used for the other treatment group. The classes were filmed prior to any instruction, at the mid-point (the end of the first traditional unit), and at the end of the six weeks for subsequent analysis using the TSAP (Grehaigne, et al., 1997) to measure game performance outcomes of participants in both types of instructional models. Once the participant groups were filmed before, at the middle (end of the first traditional unit), and after each instructional unit for both treatment groups, the investigator analyzed the data using the TSAP. The lessons were filmed, focusing on each of the games to document the frequencies of

participants engaging in specific actions found on the TSAP instrument recording form in certain categories related to gaining possession and disposing of the ball during game play. The game performance efficiency index and game performance scores were entered into a spreadsheet (SPSS statistical software package) for all participants for all pretests and post-tests.

Day	SEM/TGfU	Traditional
1	Introduction to Ultimate Frisbee Game play (needs assessment) Teacher selection of teams/coaches	Introduction to Ultimate Frisbee Game play (needs assessment)
2	Announcement of Teams/Coaches Team roles/Team name Passing Team practice on home court Modified game play	Passing Skill practice Game play
3	Modified game play with individual Teams Passing to a moving target Modified game play	Passing Skill practice Game play
4	Modified game play with individual Teams Defensive strategy Statisticians role Modified game play	Defense Skill practice Game play
5	Modified game play with individual Teams Defensive strategy Fair play points Modified game play	Defense Skill practice Game play
6	Modified game play with individual Teams Offensive strategy Modified game play	Offense Skill practice Game play

Figure 6. Comparisons of scope and sequence planning for the Hybrid Instructional Model and the Traditional Multi-Activity Model.

7	Modified game play with individual Teams Offensive strategy Modified game play	Warm-up Tournament
8	Team warm-up/practice Season play begins (4 v 4)	Warm-up Tournament
9	Team warm-up/practice Season play (4 v 4)	Introduction to speedball Game play (needs assessment)
10	Team warm-up/practice Season play (4 v 4)	Passing Skill practice
11	Team warm-up/practice Season play (4 v 4)	Passing Skill practice Game play
12	Team warm-up/practice Tournament play (4 v 4)	Offense Skill practice Game play
13	Team warm-up/practice Tournament play (4 v 4)	Defense Skill practice Game play
14	Team warm-up/practice Tournament play (4 v 4)	Class warm-up Tournament
15	Team warm-up/practice Tournament play (4 v 4)	Class warm-up Tournament
16	Team warm-up/practice Tournament finals (4 v 4) Awards ceremony	Class warm-up Championship No awards ceremony

Figure 6 (continued). Comparisons of scope and sequence planning for the Hybrid Instructional Model and the Traditional Multi-Activity Model.

In a previous lesson, the teacher created 5 teams of 4 students based on ability to allow for balanced competition during the ultimate frisbee unit. Need Frisbees, pennies, and flip scoreboards.

- Teacher will send each team to a specific half court area (may need to use the sidelines as well for the 5th team). Pennies and Frisbees are needed. Students will play 2 v 2; cones should be placed to mark 2 v 2 areas for five-minute game play.
- Bring students all to the middle. Go over the team roles (coach, equipment manager, statistician, scorekeeper, referee) 3 minutes; give each team 3 minutes to designate primary roles (roles may switch based on need) and create a team name. Paper and pencils will be needed. .
- Demonstrate passing and catching with a partner. Designate lines. Send teams back to their area to begin.
    - Partner passing; 2 minutes
    - Triangle passing with a passive defender; 1 minute each
    - Triangle passing with an active defender; 1 minute each
    - Rotate positions on the whistle.
- 4 v 4; 2 games going on simultaneously with team 5 being the referees and scorekeepers. 5 minute games; rotate teams.

Figure 7. Sample lesson outlines for Hybrid Instructional Model.

- Questions for closure:

  1. What was the goal of your game?

  Complete 2 passes before scoring.

  2. When you were passing, what did you do to keep the defense from stealing the ball?

  Used arms and body to protect the ball; used ball fakes and jukes to throw off the opponent.

- Teacher will create folders with team name and rosters.

Figure 7 (continued). Sample lesson outlines for Hybrid Instructional Model.

- The teacher will go over the rules of ultimate Frisbee.
- Teacher will have students work on passing the frisbee with a partner while standing stationary (isolated skill practice).

  - students will increase the distance between partners

  - students will pass the frisbee towards a target on the wall
- Students will play 11 v 11 for 15 minutes.
- The teacher will review the concepts presented during today's lesson.
- Pennies and Frisbees are needed.

Figure 8. Sample lesson outline for Traditional Multi-Activity Model.

Instrumentation for Data Collection

The TSAP developed by Grehaigne, Godbout, and Boutier (1997) was used to measure the game performance levels of the participants in two different types of instructional units. Oslin, Mitchell, and Griffin (1998) suggest that the purpose of the performance assessment of team sport outcomes is to "measure game performance behaviors that demonstrate tactical understanding, as well as the player's ability to solve tactical problems by selecting and applying appropriate skills." The TSAP is designed to allow observers to record how often participants move and make decisions appropriately during game play situations. A performance index is generated which demonstrates the tactical performance level of students and how active participants are during game play. The game components within the TSAP include the following:

- Gaining Possession of the Ball
    - Conquered Ball (CB): A player is considered having conquered the ball if he or she intercepted it, stole it from an opponent, or recaptured it after an unsuccessful shot on goal or after a near loss to the other team.
    - Received Ball (RB): The player receives the ball from a partner and does not immediately lose control of it.
- Disposing of the Ball
    - Lost Ball (LB): The player is considered having lost the ball when he or she loses control of it without having scored a goal.
    - Neutral Ball (NB): A routine pass to a partner who does not truly put pressure on the other team.

    - Offensive Ball (OB): An offensive ball is a pass to a partner who contributes to the displacement of the ball toward the opposing teams' goal.
    - Successful Shot on Goal (SS): A shot is considered successful when it scores or one's team retains possession of the ball.
- Performance Index and Performance Score Computation Formulas:
    - Volume of Play Index = CB + RB
    - Efficiency Index = CB + OB + SS / 10 + LB
    - Performance Score = (Volume of Play / 2) + (efficiency index X 10).

Measuring performance outcomes in this manner provides a more specific look at the students' overall performance. Because inappropriate decisions and inefficient skill executions are included as well, students can be evaluated on their overall game performance. If a student has a score greater than one, this is an indication that a student performed more appropriate/efficient responses than inappropriate/inefficient responses. This scoring process was field tested with undergraduate physical education students. The students took turns being the coders and using the TSAP while they observed an individual student performing under game conditions (Richard, Godbout, & Grehaigne, 2000). For a closer look at The TSAP instrument recording form, see Figure 3.

Validity of the Instrument

The measurement process and the instrument components of the game performance instrument (TSAP) were designed and tested by experts in the field to determine its validity. To determine *face validity*, undergraduate students were given a questionnaire to assess the degree to which they thought the test was appropriate and fair. Of those students, 95% stated that they preferred being assessed during game play as opposed to the traditional skills testing completed

in isolation (Richard, Godbout, & Grehaigne, 2000). *Content validity* was obtained by physical education teachers and coaches by having them analyze the TSAP to make sure the content was appropriate and measured what it was intended to measure. Feedback from these professionals with 10-30 years of experience was used to improve the instrument until consensus between all the panel of experts was achieved (Richard, et al., 2000). *Construct validity* of the TSAP was field tested across three categories of games: invasion (soccer and basketball); net/wall (volleyball); and, field/run/score (softball) and was used in three separate studies of sixth-grade physical education classes (Richard, et al., 2000). For construct validity to be used, differences between groups are expected to occur when being assessed with the same instrument. For this process, the differences were analyzed statistically to see if the TSAP could be used to differentiate between high-level and low-level performers assessed previously with the instrument. Limited statistical significance in the construct validity findings can be explained by the relatively smaller effect sizes and the alpha level that had been set apriori at .01 rather than at the traditional level of .05.

PB = Volume of Play *(CB + RB)*

CB = Conquered Balls – interception, steal, recovered off missed shot

RB = Received Balls – catch without immediately losing control

LB = Lost Balls *(NB + LB)*

NB = Neutral Balls – routine pass which does not put opponent in jeopardy

LB = Lost Balls - turnover

AB = Attack Balls *(OB + SS)*

OB = Offensive Ball – pass which puts pressure on opponent and often leads to score

SS = Successful Shot – shot which scores or when possession is retained after it

<u>Instructions for observers:</u> Use a tally to record each time a student in the game completes an action on the chart.

Volume of Play = CB + RB

Efficiency Index

(CB + OB + SS) / (10 + LB)

Performance Score = (Volume of Play/2) + (efficiency index X 10)

Names	**CB**	**RB**		**NB**	**LB**		**OB**	**SS**

Calculate the Volume of Play for each student:_____

Calculate the Efficiency Index for each student: _____

Calculate the Performance Score for each student: _____

Figure 9. Team Sport Assessment Procedure (TSAP) developed by Grehaigne, Godbout, and Boutier (1997).

Instrument Reliability

In order to determine the reliability of the TSAP, the test-retest method (Baumgartner & Jackson, 1991) was used. In this process completed by Richard, Godbout, and Grehaigne (2000), participants completing a test finished two versions of the same test with a time interval (several days up to two weeks typically) between the administration of the two test versions. All correlation coefficients generated from this particular test-retest statistical analysis to obtain reliability during the design of the TSAP were above .84, indicating the instrument is reliable. The TSAP was created to be an observation instrument that would allow teachers to assess game performance of live or filmed games. The results from these studies suggest that this instrument procedure provides a valid and reliable method for assessing game performance. Although skills are an important part of game performance, without the ability to make tactical decisions and move efficiently during game play, it is difficult to be successful in playing a game.

Inter-Observer Agreement

Although the literature has indicated that the instrument has proven to be reliable with multiple users, it was necessary to ensure that the investigator's observation of game performance outcomes was consistent with how other observers assessed participant outcomes. To do this, the investigator enlisted the assistance of two other observers to view two five-minute game segments of the same film and record the frequencies of participants engaging in the game-related actions found on the TSAP in the specific categories (possession of the ball and disposing of the ball). The number of agreements and disagreements of the frequencies for each of these game segments was calculated to determine the percent of agreements for the observers. This calculation was generated with the following formula (Bakeman & Gottman, 1997):

$$\frac{agreements}{[agreements+disagreements]} \text{ X 100}$$

For the present study, two observers viewed two five-minute lesson segments from those that were filmed the first week of the study. The observers were to be trained on the categories within the TSAP and the coders (observers) would compare agreements and disagreements after observing 10 participants in the two game segments. Coding was to continue until the agreement on all participants in both lesson segments was above .80. This inter-observer agreement was to be established before any of the actual pretest and post-test films could be analyzed.

Materials

The TGfU model was developed by Bunker and Thorpe (1983) and modified in 1994 (Siedentop, 1994) to provide students with learning experiences that are more realistic and which emphasize tactical decisions (strategies) by learners. Physical educators wanted students to enjoy the excitement of playing games and be able to understand the strategies involved which could allow them more success in game play. This approach teaches students games by playing games. The small-sided games with simplified rules allow the students to play games which represent the real games. The modified games allow the students opportunities to practice game skills and strategies before being asked to execute them in real game settings. Games are categorized into four categories: net games (badminton, volleyball, tennis, etc.); target games (archery, golf, bowling, etc.); striking or fielding games (softball, baseball, etc.); and, invasion games (soccer, lacrosse, basketball, hockey, team handball, etc). Games within each group have similar strategies that can be used for solving problems within game play. Teachers are encouraged to point out the similar strategies involved in each game type so students can transfer the strategic information to the next sport.

In an effort to provide students with an authentic sport experience, Siedentop (1994) helped establish SEM as an authentic model that provides students with the following: team

affiliation; formal competition; and, a culminating event such as a championship game. Siedentop designed the model to promote the development of competent (psychomotor, cognitive learning domains), literate (cognitive and affective), and enthusiastic (affective) sportspersons. He conveyed that his goal was that by being engaged with the model students, they would become players of the sport, understanding it from a variety of perspectives. The rationale is that participants are not just "playing a game" but they are developing an understanding of traditions, organization and all that is involved with the game. Much of the learning in SEM is based on cooperative learning strategies. Students are engaged in various roles all working together including roles such as coach, referee, statistician, scorekeeper, broadcaster, journalist, blogger, and other roles throughout the sport season which is typically at least six weeks long (or 20 or more lessons). Cooperative learning is used as students work with their individual teams to determine specific needs. Direct instruction is used to set the overall structure for the season. Reciprocal teaching (peer-to-peer) is used as the students engage in the coaching, referee, and fitness instructor roles. The main goal is to develop students to be competent, literate and enthusiastic sportspeople. A competent sportsperson involves one who can participate successfully in game play. A literate sportsperson is one who understands the rules and traditions involved with the particular sport. An enthusiastic sportsperson is one who participates in the sport in a positive manner. SEM has three main differences from formal sport, one being that participation is required by all students (Siedentop, et al., 2004, 2011). Small-sided games allow for more opportunities for student success. Secondly, the competition is developmentally appropriate. Equipment and rules are modified to allow for more student success. The third difference involves the students being engaged in a variety of roles including referee, statistician, scorekeeper, broadcaster, etc.

By using key aspects of these two instructional models within one instructional unit, this hybrid instructional model (treatment 1) allows students to benefit in ways not typically possible within the traditional multi-activity model (treatment 2) implementation. This occurs in the hybrid model by not only creating a festive atmosphere which allows game participants to become more competent and literature through game-playing and fulfilling roles, but the game modifications and questions asked of students by the teacher at various opportune times within lessons affords students the means of conceptualizing the tactical nature of each lesson aligned with this hybrid model.

Other than the instrumentation and sport-related equipment for physical education class, the only materials needed to conduct this study included filming equipment and multiple copies of TSAP sheets for recording data. A TV/DVD was used to view the films of the lessons which were analyzed with the TSAP for the performance levels of participants.

Research Design

A 2 X 2 (groups and time) quasi-experimental design was used with two non-equivalent groups using a pre-test and post-test method. This is primarily due to the lack of random assignment to groups of participants who are similar but not exactly equal in characteristics. Two groups of seventh graders were compared within the study with one treatment group being taught with a hybrid instructional model built around components of two contemporary instructional models (TGfU and SEM) and the other treatment group taught with the teacher's traditional model, the multi-activity model. The dependent variables to be measured were two categories of scores generated with the completion of the TSAP: (a) volume of play; and, (b) efficiency index score. The limitation to this research design is the threat to internal validity of prior experience in multiple groups' participants. That is, the degree to which groups are

comparable prior to the study can prevent researchers from concluding that the treatment caused any differences between the two groups. After entering scores into SPSS 16.0 statistical package (SPSS Inc. Headquarters, Chicago, IL), an Multivariate Analysis of Variance (MANOVA) was used to perform the 2 X 2 analysis for the comparison of scores between groups for the hybrid unit and the first traditional unit. The MANOVA was used to analyze the gain scores (post-test minus pre-test and mid-point test minus pre-test) of groups for the first traditional unit and the entire six-week long hybrid unit. This was because a second traditional unit was added due to the length of the hybrid unit. A statistical analysis of the second traditional unit was completed with two paired t-tests of the pre- and post-test scores within that group. For comparative purposes, two paired t-tests of the first traditional unit's pre- and post-test scores was completed as well. Because only two groups were involved, a post hoc test was not needed. The first treatment group was the hybrid instructional model and the second treatment group was the traditional multi-activity model preferred by the teacher in most instructional units. Table 1 indicates the specific details of the research design.

Anticipated attrition due to student absences led the investigator to document the number of participants as 20 in each of the two groups for a 2 (group) X 2 (time) research design.

Table 1

Specific Details of the Research Design

	Hybrid Instructional Model Group	Traditional Multi-Activity Model Group
Volume of Play	N = 15	N = 15
Performance Efficiency Index	N = 15	N = 15
Game Performance Score	N = 15	N = 15

An alpha level of.05 was set prior to the data collection and the null hypothesis stated that there was an assumption that there would be no difference between the two groups on the two game performance score categories.

CHAPTER FOUR

DATA AND ANALYSIS

A physical education class provides the setting for student opportunities for successful participation and opportunities to develop positive attitudes toward lifelong success in pursuing a healthy lifestyle. A recent combination of two current teaching models, the Teaching Games for Understanding (TGfU) instructional model and the Sport Education Model (SEM), has been described in the literature so that teachers have a guide for implementing the combined version of these models in physical education class (Gubacs & Collins, 2010; Pritchard & McCollum, 2009). Both models have been described separately in the literature, providing a theoretical foundation for the use of the models by practitioners in physical education. However, since both models have unique components that generate important student learning outcomes, the combination of these models into a hybrid model would provide new avenues with which to impact students. By using the TGfU model (Butler & Griffin, 2010; Griffin & Butler, 2004; Mitchell, Oslin, & Griffin, 2008; Slade, 2010) and the SEM (Bulger, Mohr, Rairigh, & Townsend, 2007; Siedentop, Hastie, & van der Mars, 2004, 2011), teachers are able to use a combination of pedagogical strategies that integrate physical activity and tactical-based sport instruction in meaningful, realistic game-like situations that promote critical thinking and social interaction within small groups. The purpose of this study, then, was to determine the impact of a hybrid version of SEM and TGfU on middle school students' game performance outcomes. The primary research question for this study asked "Will middle school students improve game performance more following instruction in traditional sport-based lessons or during physical education lessons when a teacher uses a hybrid instructional model that combines the Sport Education Model and TGfU?" The hypothesis states that the implementation of a hybrid

instructional model combining SEM and TGfU will impact middle school students' game performance outcomes more than the traditional instructional model. The null hypothesis stated that there would be no difference between the two groups on the game performance score.

The research procedures began with a physical education teacher teaching one intact seventh grade physical education class using the traditional multi-activity model focusing on two invasion games (ultimate frisbee and speedball) in two three-week units. Participants within a second treatment group were seventh graders taught as a second intact class for the same six-week period using a blend of two contemporary models, the SEM and TGfU, focusing on the invasion game ultimate frisbee. Prior to collecting data, inter-observer agreement (IOA) was established at 100% while watching these players based on the documentation of agreements and disagreements between observers. The results suggest that students game performance using the hybrid instructional model can improve with sufficient amount of time.

Review of Research Procedures

For six weeks, the physical education teacher taught one intact seventh grade physical education class using the traditional multi-activity model focusing on two invasion games (ultimate frisbee and speedball) in two three-week units. The multi-activity model units are typically two to three weeks in duration, with a skill focus immediately followed by tournament play (Metzler, 2005; Siedentop & Tannehill, 2002). Participants within a second treatment group were seventh graders taught as an intact class for the same six-week period. Instruction focused on one invasion game unit for the entire six weeks (ultimate frisbee) and was aligned with a contemporary instructional model which blends aspects of two contemporary models, the SEM and TGfU. Once the participant groups were filmed before, at the middle (which was the end of

the first traditional unit), and after each instructional unit for both treatment groups, the investigator analyzed the data using the TSAP (see Figure 10).

Although both treatment groups included 24 participants each to begin the study (N = 48), attrition due to student absences for one or more testing dates reduced the number of participants (N = 30), leaving 15 participants in the traditional group and 15 participants in the hybrid group. All lessons were taught in two intact seventh grade physical education classes by one physical education teacher in a rural town in North Central Pennsylvania. The physical education teacher had been involved in a pilot program the previous year using the SEM with seventh graders for a mini-unit. The teacher also completed an in-service day of instruction led by two university professors on using the SEM along with a brief overview of the TGfU model in physical education classes. Most participants came from low to lower-middle socioeconomic backgrounds and the majority of students' previous experience in physical education classes involved being taught with a direct style of instruction. None of the participants had any prior exposure to either the SEM or the TGfU model which were blended (hybrid group) for this study.

PB = Volume of Play *(CB + RB)*

CB = Conquered Balls – interception, steal, recovered off missed shot

RB = Received Balls – catch without immediately losing control

LB = Lost Balls *(NB + LB)*

NB = Neutral Balls – routine pass which does not put opponent in jeopardy

LB = Lost Balls - turnover

AB = Attack Balls *(OB + SS)*

OB = Offensive Ball – pass which puts pressure on opponent and often leads to score

SS = Successful Shot – shot which scores or when possession is retained after it

Instructions for observers: **Use a tally to record each time a student in the game completes an action on the chart.**

Volume of Play = CB + RB

Efficiency Index

(CB + OB + SS) / (10 + LB)

Performance Score = (Volume of Play/2) + (efficiency index X 10)

Names	CB	RB		NB	LB		OB	SS

Calculate the Volume of Play for each student:_____

Calculate the Efficiency Index for each student: _____

Calculate the Performance Score for each student: _____

Figure 10. Team Sport Assessment Procedure (TSAP) developed by Grehaigne, Godbout, and Boutier (1997).

Establishing Inter-Observer Agreement

Prior to collecting data, the investigator observed two five-minute games, assessing the actions of four players on a team for five minutes, recording game performance actions exhibited by those players as the guidelines of the TSAP observation instrument recommends. The results were compared with a second observer who followed the same players in the same film segments. IOA was established at 100% while watching these players based on the documentation of agreements and disagreements between observers. Figure 11 shows a comparison of the agreements and disagreements between the two observers of the same participants for establishing IOA. The observation categories (CB, RB, LB, OB, and SS) were

the components of the TSAP instrument which was selected as the game performance assessment instrument. Tallies were recorded for each of the TSAP components each time observers identified these actions (components) occurring in the five-minute games used for establishing IOA. By looking at Figure 11, it is easy to note that no disagreements occurred between observers which led to the 100% inter-observer agreement. IOA was calculated by dividing the agreements by the disagreements plus agreements and then multiplying that number by 100 to obtain the percentage. The calculation formula was: Agreements / [Agreements + Disagreements] X 100 = IOA (Bakeman & Gottman, 1997).

PB = Volume of Play *(CB + RB)*

CB = Conquered Balls – interception, steal, recovered off missed shot

RB = Received Balls – catch without immediately losing control

LB = Lost Balls *(NB + LB)*

NB = Neutral Balls – routine pass which does not put opponent in jeopardy

LB = Lost Balls - turnover

AB = Attack Balls *(OB + SS)*

OB = Offensive Ball – pass which puts pressure on opponent and often leads to score

SS = Successful Shot – shot which scores or when possession is retained after it

Observer #1 (both five-minute IOA segments)

CB	RB		NB	LB		OB	SS
0	4		0	18		1	1

Observer #2 (both five-minute IOA segments)

CB	RB		NB	LB		OB	SS
0	4		0	18		1	1

IOA = Agreements / [Agreements + Disagreements] X 100

[24 / 24 + 0] X 100 = 1 X 100 = 100% inter-observer agreement

Figure 11. Recorded agreements and disagreements for establishing inter-observer agreement.

Results

The primary research question for this study asked if middle school students learn more in the hybrid instructional unit that blends the SEM and TGfU than they would learn in a traditional unit, enabling them to play games better following instruction. Game performance (volume of play and efficiency index) was used as the primary indicator of student learning for this study (Grehaigne, Godbout, & Boutier, 1997; Mitchell, Griffin, & Oslin, 2008; Oslin, Mitchell, & Griffin, 1998). The TSAP was used as the data collection instrument for determining game performance of participants.

Data were collected and entered from the observations of five-minute games at different phases of the study. The data that were entered included the volume of play and the game efficiency scores generated from the various categories on the TSAP. Volume of play is calculated by adding together the number of conquered balls and received balls. The efficiency index is calculated by first adding the number of conquered balls, offensive balls, and successful shots then dividing that number by the addition of 10 plus the number of lost balls. The volume of play and game efficiency data collected during pre-test, mid-test, and post-testing for both treatment groups for all participants were entered into an Excel spreadsheet and those data were exported to SPSS for data analysis purposes. Gain scores were calculated by subtracting the pre-test scores from the post-test and mid-point scores of groups. A multivariate analysis of variance (MANOVA) was conducted to compare gain scores of both treatment groups on two different dependent variables, volume of play and efficiency index, after the first three weeks. This was used to determine whether significant differences occurred between groups for the end of unit and mid-point game performance assessments. These gain scores were calculated from the beginning to the end of the first unit of the traditional group (three weeks) and from the beginning to the mid-point of the hybrid unit. The gain scores from the hybrid unit from the beginning to the mid-point were used because the first traditional unit was completed at the same time (after three weeks). Gain scores were also calculated from the beginning to the end of the entire hybrid unit which lasted six weeks, calculated by subtracting the pre-test from the post-test. Additionally, since only the traditional group completed a second three-week unit, that group's pre-test and post-test scores were analyzed by two separate paired t-tests for the volume of play and efficiency index scores. This decision to use paired-t-tests for these data was due to the presence of two sets of scores (pre-test and post-test) for only one group (traditional multi-

activity group) for volume of play and game efficiency. For the statistical analysis of one group for two sets of scores, a MANOVA would not be appropriate. That is why the paired t-tests were used for these specific scores.

Results from the MANOVA indicated that no significant difference occurred between the traditional group and the hybrid group for volume of play or efficiency index scores (Table 2). Game performance data and statistical results from the MANOVA for the volume of play and efficiency index for the hybrid unit (including gains from the pre-test, mid-point and post-test scores) and for the first traditional unit are reported in Table 2.

Table 2

Results from the Multivariate Analysis of Variance Comparing the Gain Scores Between Groups on the Volume of Play and Efficiency Index for the Hybrid Model (Hybrid VP and Hybrid EI) and the Traditional Model (Trad VP and Trad EI)

Variables	Gain Scores	Sum of Squares	df	Mean Squares	F	Sig
Hybrid VP	.033	.171	1	.171	.019	.892
Trad VP	2.6	7.24	1	7.24	.373	.552
Hybrid EI	.019	.003	1	.993	.122	.732
Trad EI	.106	.010	1	.010	.130	.724

The paired t-tests generated a significant difference on the volume of play from pre-test to post-test (-1.3 difference from pre to post) within the second traditional unit (speed ball), $t(1, 14) = -2.177$, $p<.038$. No significant difference was found, however, on the efficiency index within the second traditional unit from pre-test to post-test, $t(1, 14) = -1.39$, $p<.185$. Results on Efficiency Index barely missed generating a significant difference from the first unit pre-test to the end of the second unit, $t(1, 14) = -2.136$, $p<.051$. For a more detailed view of these statistical results, the data are provided in Table 3.

Table 3

Results from Series of Paired T-Tests Comparing the Pre-Test and Post-Test Scores Within the Traditional Group on the Volume of Play and Efficiency Index for the Traditional Model's First and Second Three-Week Units

Variables	Pre	Post	SD (gain)	St. Error	df	t	Sig
Unit 1 Trad VP	2.47	2.33	2.973	.768	14	.174	.865
6 Week Trad VP	2.33	4.93	3.815	.985	14	-2.504	.038*
Unit 2 Trad VP	4.93	2.07	3.011	.777	14	.343	.737
Unit 1 Trad EI	.10	.12	.254	.066	14	-.223	.827
6 Week Trad EI	.10	.22	.205	.053	14	-2.14	.051

The purpose of this study was to determine the impact of a hybrid version of SEM and TGfU on middle school students' game performance outcomes. The results in relation to the primary research question for this study, which is, "Will middle school students improve game performance more following instruction in traditional sport-based lessons or during physical education lessons when a teacher uses a hybrid instructional model that combines the Sport Education Model and TGfU?" suggest that students game performance using the hybrid instructional model can improve with sufficient amount of time. The hypothesis states that the implementation of a hybrid instructional model combining SEM and TGfU will impact middle school students' game performance outcomes more than the traditional instructional model. The results from the MANOVA suggest that there is no difference in the game performance when

comparing the two groups but there is a difference in the game performance from the beginning of the second three-week unit of the traditional group and the end of that traditional unit generated by the series of paired t-tests. The null hypothesis, which states that there would be no difference between the two groups on the game performance score, is rejected. This study used TGfU and SEM as the basis for implementation in the physical education unit to allow students the opportunity to enjoy the excitement of playing games and the chance to understand the strategies involved which could allow them more success in game play. This approach used a realistic, meaningful, sport season structure to teach students games by providing opportunities for them to play modified games with conditions for emphases of learning objectives and to focus on tactical actions within game play.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Studies have shown that student opportunities for successful participation in physical activity and positive attitudes toward lifelong success in pursuing a healthy lifestyle can be affected by the TGfU model (Butler & Griffin, 2010; Griffin & Butler, 2004; Mitchell, Oslin, & Griffin, 2008; Slade, 2010) and the SEM (Bulger, Mohr, Rairigh, & Townsend, 2007; Siedentop, Hastie, & van der Mars, 2005, 2011) when implemented in a physical education class. The recent combination of these two models by practitioners in some format allows K-12 students to receive the benefits of both models (Gubacs-Collins & Owens, 2010; Pritchard & McCollum, 2009). By using the TGfU model together with the SEM, teachers would be able to use a combination of pedagogical strategies that integrate physical activity and tactical-based sport instruction in meaningful, realistic game-like situations that promote critical thinking and social interaction within small groups. Research has found that boys and girls prefer such instructional models like these rather than traditional technical models often seen in physical education in many schools (Gurvitch & Lund, 2009; Rink, French, & Graham, 1996). In the present study, a hybrid version of these two instructional models provided boys and girls with appropriate interaction and learning opportunities.

The primary research question for this study asked if middle school students learn to play the game better following instruction in traditional sport-based lessons or during physical education lessons when a teacher uses a hybrid instructional model that combines the SEM and TGfU. This study used TGfU and SEM as the basis for implementation in the physical education unit to allow students the opportunity to enjoy the excitement of playing games and the chance to understand the strategies involved which could allow them more success in game play. This

approach used a realistic, meaningful, sport season structure to teach students games by providing opportunities for them to play modified games with conditions for emphases of learning objectives and to focus on tactical actions within game play. The small-sided games with simplified rules allowed the students opportunities to practice game skills and strategies before being asked to execute them in real game settings. The physical education teacher taught one intact seventh grade physical education class using the traditional multi-activity model focusing on two invasion games (ultimate frisbee and speedball) in two three-week units. Participants within a second treatment group were seventh graders taught as a second intact class for the same six-week period using a blend of two contemporary models, the SEM and TGfU, focusing on the invasion game ultimate frisbee. In this study, game performance was used as the primary indicator of student learning (Grehaigne, Godbout, & Boutier, 1997; Mitchell, Griffin, & Oslin, 2008; Oslin, Mitchell, & Griffin, 1998). Determining the volume of play and game efficiency of participants enabled the investigator to determine game performance, which is an outcome related to learning in physical education.

The combination of the TGfU instructional model and the SEM allows students opportunities to engage in the requirements identified by Cambourne's Learning Theory (immersion, engagement, demonstration, expectations, responsibility, approximation, use and response) for individuals to be motivated to continue participating in physical activity. This study used TGfU and SEM as the basis for implementation in the physical education unit to allow students the opportunity to enjoy the excitement of playing games and the chance to understand the strategies involved which could allow them more success in game play. The impact of the model on student outcomes has been tremendous, especially in the affective domain. In an informal interview with the teacher following treatments the teacher indicated

students almost unanimously requested all units to be taught with the hybrid approach. The results of this study in that student learning outcomes using the hybrid model were found to be just as effective if not better than the traditional multi-activity level approach. Future research comparing the game performance outcomes of two groups could focus on using the same or similar ball type in the activities taught and allowing for a nine week hybrid unit, as suggested by the Sport Education model, to provide for more time for students to improve their game performance.

Connection with Learning Theory

The basis for providing students with opportunities for successful participation in physical activity and positive attitudes toward lifelong success in pursuing a healthy lifestyle can be found in Brian Cambournes' Condition or Learning Theory (1988). The current study followed his suggestions that the minimum daily requirement for a motivated individual includes the following: (a) immersion (the students were involved in the sport experience from day one); (b) engagement (safe from ridicule and punishment); the students felt a part of a team and bonded with their teammates; (c) demonstration (the teacher demonstrated appropriate techniques and strategies which allowed for opportunities for success); (d) expectations (the teacher's demonstrations and explanations allowed the students to know what was expected of them in a game situation); (e) responsibility (giving choices builds responsibility); the students were given specific roles which involved responsibilities for each day; (f) approximation (not being overly concerned about mistakes); the small-sided games allowed the students opportunities to gain confidence in preparing for game situations; (g) use (time and opportunities to use skills); the small-sided games provided opportunities to put into practice skills and strategies learned; and

(h) response (feedback); the student roles and responsibilities freed the teacher to be able to provide more individual and team feedback to the students.

The combination of the TGfU instructional model and the SEM allows students opportunities to engage in the requirements identified by Cambourne's Learning Theory for individuals to be motivated to continue participating in physical activity. In this study, the students were immersed in the sports in a variety of roles such as player, coach, scout, statistician, referee, etc. Being a part of a team provided a safe environment. Coaches, players, and teachers provided demonstrations of skills, sport strategies, and expectations for success. Students were given opportunities to demonstrate responsibility in fulfilling the roles as part of their team. The focus was on team play and interactions so that there is not much concern over individual mistakes. Teams were provided practice time and modified game time to work on skill and strategies in game situations. Students were given feedback by coaches, teammates, and the teacher. The hybrid of these instructional models provided students opportunities, designed to impact student outcomes positively in physical education for both male and female students by providing appropriate and authentic learning opportunities. This description of what comprises the TGfU model aligns well with Cambourne's work.

Additionally, the TGfU model was developed to provide students with learning experiences that are more realistic and which emphasize tactical decisions (strategies) by learners (Bunker and Thorpe, 1983; Butler & Griffin, 2010; Mitchell, Oslin, & Griffin, 2006). This study used TGfU and SEM as the basis for implementation in the physical education unit to allow students the opportunity to enjoy the excitement of playing games and the chance to understand the strategies involved which could allow them more success in game play. This approach taught students games by providing opportunities for them to play games and focus on tactical

actions within game play. The small-sided games with simplified rules allowed the students opportunities to practice game skills and strategies before being asked to execute them in real game settings. For structural purposes within the TGfU model, games are categorized into four categories: net games (badminton, volleyball, tennis, etc.), target games (archery, golf, etc.), striking or fielding games (softball, baseball, etc.), and invasion games (soccer, basketball, etc.). Games within each group have similar strategies that can be used for solving problems within game play. To reiterate, Cambourne's Learning Theory is seen throughout these instructional models, particularly evident in immersion, responsibility, and feedback. In this study, the physical education teacher pointed out the similar strategies involved in each game type whether the students were using a frisbee or a ball so they could transfer the strategic information to the next sport (Mitchell, Oslin, & Griffin, 2006). Not only does this show that the model allows the teacher more flexibility to provide more appropriate feedback to students, but it shows the model provides opportunities for students to take responsibility to think critically for strategic and tactical planning for subsequent team success.

Impact on Students

In SEM, a reciprocal style of teaching is used as the students engage in the coaching, referee, fitness instructor, and other roles contributing to the main goal of developing students to be competent, literate and enthusiastic sportspeople. The impact of the model on student outcomes has been tremendous, especially in the affective domain. For example, Hastie and Carlson (1998) found student responses to SEM included student perception of improved skill ability, preference for the team concept (they like playing with the same group over a period of time), preference toward student coaches, and they liked the responsibilities involved with the various roles. This was found to be true in the current study as well. In an informal interview

with the teacher following treatments the teacher indicated students almost unanimously requested all units to be taught with the hybrid approach. This is supported in Metzler and McCullick's (2008) work which indicated a very favorable pupil response to similar contemporary instructional models being used and replacing the traditional technical model. In informal conversations with participants, they commented that they liked playing with the same teammates throughout the unit and they liked the responsibility involved with fulfilling the various roles. The physical education teacher also reported that students who normally do not participate were motivated to be engaged in the activities and be a contributing member of the team. The physical education teacher said that he never heard any of the students complain of being bored. At the conclusion of the unit, the participants in the hybrid model asked the teacher if they could have all of their physical education units based on the hybrid model which blended SEM and TGfU. The physical education teacher also indicated a desire to continue using the hybrid instructional model in future instructional units. This is supported in the work of Lund, Gurvitch, and Metzler (2008) who described cooperating teachers' intent to adopt and modify contemporary instructional models after supervising student teachers who used the models.

Research is limited in regard to how teachers learn to effectively implement the SEM within their curriculum, although a few studies have suggested that it takes time for even experienced teachers to effectively implement this model into their physical education program (Hastie & Curtner-Smith, 2006; Pope & O'Sullivan, 1998). The physical education teacher in this study was involved in a five week pilot program prior to this six week study and was also involved in an inservice training on the SEM. Perhaps due to his prior involvement and comfort level with the two models and the combination into a hybrid model, the contemporary models (combined or not) may be implemented regularly by this teacher in the future. Indeed, he did

indicate that he plans to implement this hybrid model in future physical education units for his classes. This anecdotal outcome may be based in part on the current investigation's primary purpose and the specific research question and findings.

Discussion of Current Study Outcomes

The purpose of the current investigation was to examine whether or not a hybrid version of SEM and TGfU or the traditional multi-activity model impacts game performance better in seventh grade physical education territorial sport lessons. The primary research question for this study asked "Will middle school students improve game performance more following instruction in traditional sport-based instruction or during instructional units when a teacher uses a hybrid instructional model that combines the SEM and TGfU?" The hypothesis stated that the implementation of a hybrid instructional model combining SEM and TGfU will impact middle school students' game performance outcomes more than the traditional instructional model. The null hypothesis stated that there would be no difference between the two groups on the game performance score and efficiency index scores.

Participants in the hybrid model treatment group focused on ultimate frisbee as an instructional unit for the entire duration of the study while the traditional group focused on ultimate frisbee for three weeks (typical length for the multi-activity traditional units) and speedball for the final three weeks. Results showed that participants' volume of play in the traditional group improved significantly and almost significantly for the efficiency index (see Table 3) from pre testing to post-testing in only the second unit which was focused on speedball. This may be due to contextual differences between the two territorial sports used as instructional units. For example, the flight of the frisbee in the first unit (ultimate frisbee) was typically slower from player to player during passing when compared to passing a ball during a game of

speedball. Although the tactical structures are similar because they are territorial games, it appeared that participants could generate more passes and shots in speedball games than in ultimate frisbee games. This appeared to show differences in the pace when participants attacked space. It also was clear that participants in general could throw and catch a ball more easily than a frisbee; therefore, the flow of the game during speedball allowed participants in the traditional group to be more active in the game than when they played ultimate frisbee. When noticing that no other differences occurred between groups from pre-test during ultimate frisbee and at either mid-point (hybrid treatment group) or post-test of ultimate frisbee (traditional treatment group), it is possible to suggest that participants learned game performance tactics equally well in both types of units. Because both groups were assessed after three weeks of the same unit (ultimate), the lack of significant differences at that point may suggest that an even longer instructional unit is needed to determine if game performance differences exist between the two instructional models. It also may suggest that students in traditional units can learn to play the game tactically as well as students in a hybrid (SEM and TGfU) unit if the hybrid unit is shorter than the recommended longer unit duration.

While the investigator wanted to study two territorial sports for the traditional groups in order to allow the hybrid group's unit duration to be long enough, in retrospect the two traditional units may have generated different results if the same object (ball or frisbee) had been used. This is not necessarily an indication that the results are not meaningful because of the mid-point testing of the hybrid group after three weeks which allowed comparison of game performance between the two treatment groups after the first traditional unit ended.

Results of this study demonstrate similar game performance gains for both types of instruction unit can be supported by research in the 1990s which established that a tactical games

instructional approach can be as effective, if not more, as the more traditional approach often found when teachers use the multi-activity model (Allison & Thorpe, 1997; Rink, 1996; Rink, French, & Graham, 1996; Turner, Allison, & Pissanos, 2001; Turner & Martinek, 1995, 1999) conducted studies demonstrating the effectiveness of the TGfU model in contrast to more traditional strategies. Rink and colleagues (Rink, 1996; Rink, French, & Graham, 1996) found a significant improvement in students who learned to play the game of badminton over six weeks as opposed to those who learned the game over a three-week period. This is similar to the results of this study in that student learning outcomes using the hybrid model were found to be just as effective if not better than the traditional multi-activity level approach.

As stated earlier, in an informal interview with the teacher following treatments the teacher indicated students almost unanimously requested all units to be taught with the hybrid approach. In informal conversations with participants, they commented that they liked playing with the same teammates throughout the unit and they liked the responsibility involved with fulfilling the various roles. The physical education teacher also reported that students who normally do not participate were motivated to be engaged in the activities and be a contributing member of the team. The physical education teacher said that he never heard any of the students complain of being bored. At the conclusion of the unit, the participants in the hybrid model asked the teacher if they could have all of their physical education units based on the hybrid model which blended SEM and TGfU. The physical education teacher also indicated a desire to continue using the hybrid instructional model in future instructional units. All of this suggests that using the hybrid model was found to be just as effective if not better than the traditional multi-activity level approach.

Implications

These instructional models are learner-centered approaches intended to develop tactical understanding and performance through modified game play. Physical educators typically want students to enjoy playing games and to be physically active, understanding the strategies involved which could allow them more success in game play. Findings suggest that it is possible for physical educators to use learner-centered instruction to provide students with opportunities to accomplish this, especially in light of the positive response of students in an informal interview at the completion of the unit and the lack of significant findings that one model affected learning more than the other (Metzler & McCullick, 2008). That is, the models within the hybrid model are known for impacting affective and cognitive outcomes in students. The model also allows the teacher more flexibility to provide more appropriate feedback to students and provides opportunities for students to take responsibility to think critically for strategic and tactical planning for subsequent team success. Given this, it is possible to say that since students respond so positively to the hybrid instructional model, teachers should consider using this model because it offers more meaningful, tactical experiences for students and may not affect learning any less than what is used already. At the conclusion of the unit, the participants in the hybrid model asked the teacher if they could have all of their physical education units based on the hybrid model which blended SEM and TGfU. Because of the positive response of students to the hybrid instructional model, it is apparent that instructional practice can be positively impacted by gradually moving teachers to plan instructional units in as many class periods as possible based on the hybrid model.

Limitations

While important outcomes can be concluded from the study, limitations were evident after the conclusion of the study. Limitations of the study involved the fact that some students did not return their consent forms which limited the number of participants involved in the investigation. Also, participant absence from the class on test days reduced the number of participants for the study and affected the team game performance and the individual game performance as well. For example, if students were used to playing on a team of four, an absent team member perhaps changed how a student could perform if only three members of a team were present. Another limitation had to do with the traditional group using a frisbee for the first unit (ultimate frisbee) and a ball for the second unit (speedball). This appeared to show differences in the pace when participants attacked space. It also was clear that participants in general could throw and catch a ball more easily than a frisbee. Therefore, the flow of the game during speedball allowed participants in the traditional group to be more active in the game than when they played ultimate frisbee. Results were not affected by games being too easy because what was measured was the tactical movement and involvement of students during games. Other limitations involve possible inadequate skill and tactical development due to the role of students as coaches in a unit. Finally, physical inactivity may be limited when students are engaged in the non-playing roles in the SEM (ex: scorekeeper, statistician). However, even with these limitations meaningful results occurred when comparing the two treatment groups from the pre-tests to the end of the first traditional unit (mid-point of the hybrid treatment unit).

Recommendations

Because findings from this study indicate that students do not necessarily learn to play games tactically better due to either type of instructional model, it is apparent that two things

should occur in the near future. First, teachers should begin to use a hybrid version of these two contemporary models or the individual models themselves because of the affective and cognitive (tactical understanding) aspects. By doing this, students would then benefit from components from both models being used within the hybrid unit. For example, students would gain competency due to the longer units of SEM and enjoy the team affiliation with specific duties to perform while gaining tactical understanding at a deeper level from the TGfU components. Second, further research should study different territorial sports (invasion games) than were used in this current study in order to determine if different results may occur. The literature is clear that the preference of students across the country prefer more meaningful sport-based instruction than what the traditional multi-activity technical approach offers. With more study of this issue, it is possible that more knowledge can be gained related to contemporary instructional models and their impact on game performance of students.

Future Research

Future research comparing the game performance outcomes of two groups could focus on addressing a few of the limitations mentioned. First of all, using the same or similar ball type may better affect the flow of the game as opposed to the use of a frisbee in one activity and a ball in the speedball activity. Secondly, future research could allow for a nine week hybrid unit, as suggested by the SEM, to allow for more time for students to improve their game performance. Curricula that include instructional models that will provide students with engagement in instructional strategies and opportunities to apply these strategies in game-like situations allow students opportunities for success in physical education. TGfU and SEM instructional models combine tactical skill practice with modified, simulated and/or small-sided authentic games and provide students the opportunity to engage in game play but also to gain an appreciation of the

traditions, strategies, and structure of the sport. These models allow students to develop tactical and skill competency in more authentic modified game activities rather than the traditional approach that focuses more on the technical approach that emphasizes more individual and partner-based isolated skill drills before some version of the full-sided game is played (French, Werner, Taylor, Hussey, & Jones, 1996; Metzler, Lund, & Gurvitch, 2008). The students are immersed in the sports in a variety of roles such as player, coach, scout, statistician, referee, etc. Being a part of a team provides a safe environment. Coaches, players, and teachers provide demonstrations of skills, sport strategies, and expectations for success. Students are given opportunities to demonstrate responsibility in fulfilling the roles as part of their team. The focus is on team play and interactions so that there is not much concern over individual mistakes. Teams are provided practice time and modified game time to work on skill and strategies in game situations. Students are given feedback by coaches, teammates and the teacher.

Traditional models for teaching sport in physical education typically overlook the more realistic phenomena that occur in athletic seasons and do not focus much on the tactical components necessary for meaningful participation during games (Hastie, 2003). Recently, these two instructional models (TGfU and SEM) have been combined in middle school and high school physical education units in order to allow students to benefit from both models (Gubacs & Collins, 2010; Pritchard, 2009). Although the two models have been studied in the literature in terms of student outcomes, this study focused on student outcomes generated within a combined unit that uses elements of both models. Student opportunities for successful participation and positive attitudes toward lifelong success in pursuing a healthy lifestyle can be affected by the instructional strategies implemented in a physical education class. These instructional models are designed to impact student outcomes positively in physical education for both male and

female students by providing appropriate and authentic learning opportunities. It is clear though that more investigation is needed on combining contemporary instructional models. The potential for impacting students positively is too great to ignore.

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Appendices

Appendix A

Letter to Teachers

October 10, 2010

Dear Mr. Bair:

As part of the process or completing my doctorate in Curriculum and Instruction at Indiana University of Pennsylvania, I am required to conduct research for my dissertation. I am writing to ask for your permission to conduct research in your physical education program during the winter and spring of the 2010-11 academic school year and to ask you to teach two different types of units to two different classes. Because of your familiarity with the Sport Education instructional model, I believe you would be excellent to work with to compare the differences in game performance outcomes of students who are taught with a traditional approach and those taught with a combination of Sport Education principles and components of the Tactical Games Model. I would need to film lessons at the beginning and end of units and will obtain all necessary permissions to do so. If you agree to allow me to work with you to complete this research in the manner described above, please sign your consent below. Thank you.

Respectfully,

Kim Everhart, Department of Health and Physical Education, Lock Haven University

---

Kim Everhart has my permission as the physical education teacher in the school targeted for her research to conduct this project in the manner described above during the winter and/or spring of the 2010-11 academic year.

_____

Signature of Physical Education Teacher

_____

Date

Appendix B

Parental Consent Form

October 10, 2010

Dear Parents:

My name is Kim Everhart and I am a faculty member at Lock Haven University in the Department of Health and Physical Education. I am writing to request permission to conduct a research project for my dissertation in your child's physical education class during the winter and spring of 2011. The physical education teacher will not change anything about how he teaches except for how he organizes his units during the project. The project is intended to determine if students can make better decisions during game play if they are taught the games differently. One physical education class in the school will be taught using the traditional instructional model used by the physical education teacher at that school, while the second class will be taught using a way of teaching that combines parts of the two most contemporary teaching models in physical education today. Apart from the length of units, nothing will change within the physical education program for this project. The teacher will not change his characteristics or his approach to teaching other than how he organizes the unit for the one class of students. Games will be filmed at the beginning and end of the units and the films will be analyzed by with a game performance instrument to enter how well the students are doing during the games that were filmed. All data, films, and records will be confidential and maintained responsibly and kept from unauthorized individuals. No information will be reported that uses names or information that would identify participants or schools involved in the project. Little risk is involved since participating in class is part of your child's educational activities anyway. We believe also that by engaging in this research project, we can improve what we are doing to help the learn how to play sports better and hopefully continue to stay active playing sports throughout life to maintain their health. Should you wish at any time for your child not to be filmed, please contact me at 570-484-2105 or keverhar@lhup.edu. Please provide your consent by signing below and having your child sign as well and send the consent form back to your child's physical education teacher. Thank you.

I agree to participate in physical education class and to be filmed for the project described above during the winter and spring of 2011.

Student's Name:

_____Signature:_____

I agree to allow my child to participate in physical education class and to be filmed for the project described above during the winter and spring of 2011.

Parent's Name: _____

Signature:_____

Appendix C

Permission for Performance Assessment Instrument

-----Original Message-----

From: jfgrehai@univ-fcomte.fr [mailto:jfgrehai@univ-fcomte.fr]

Sent: Tuesday, October 12, 2010 2:47 AM

To: Everhart, Kimberly A.

Subject: RE: GPAI help in regard to TGfU

Bonjour

Yes, you can use the Team Sport Assessment Procedure. It is now in the public domain.

Cordially

Prof Jean-Francis Grehaigne

IUFM, University de Franche-Comte

Appendix D

School Board Permission for Research

October 11, 2010

Keystone Central School Board:

My name is Kim Everhart and I am a faculty member at Lock Haven University in the Department of Health and Physical Education. I am completing my doctorate in Curriculum and Instruction at Indiana University of Pennsylvania and am writing to request permission to conduct a research project for my dissertation in two physical education classes in one school in your district. The project is intended to show the impact of a combination of two contemporary instructional models on the game performance of students taught with that blended model. One class will be taught using the traditional instructional model used by the physical education teacher at that school, while the second class will be taught using a blended instructional model that combines components of the two most common contemporary models being used today across the country in physical education. I would like to request working with Mr. Scotty Bair at Bucktail Area High School in his 7th, 8th, and/or 9th grade classes because of his familiarity and experience with one of the models and his enthusiasm for providing the best possible learning environment for his students. Nothing will change within his physical education program except the class taught with the blended contemporary model will require a period of 6-9 weeks as opposed to three weeks for the traditional approach. The teacher will not change his characteristics or his approach to teaching other than how he organizes the unit for the one class. The only assessment data to be collected will be stored on film for pretest games and post-test games during the units. From that point, I will view the filmed lessons and analyze the game performance outcomes of the students in both classes to determine the engagement patterns and tactical involvement during game play using a validated game performance assessment instrument (Grehaigne, Dogbout, & Boutier, 1997). All data will be confidential, stored in a secure location, and no names of students, school, or school district will be used in the dissemination of any findings from the project. I would like the permission of the school board to conduct this research project beginning in January 2011 and completing it after nine weeks. Please sign below if you will grant permission for me to conduct this research as described above.

Respectfully,

Kim Everhart, Department of Health and Physical Education, LHU

Kim Everhart has the permission of Keystone Central School District to conduct this research project in the manner described above during the winter/spring semester of 2011.

_____

Name and Signature of Approving School District Administration

Date:_____

Appendix E

Permission from Bucktail Area High School

Keystone Central School District
Bucktail Area High School
1300 Bucktail Avenue, Renovo, PA 17764
Telephone: (570) 923-1166 Fax (570) 923-2233

Justin Evey
Principal

Krista Shadle-Smith
Guidance Counselor

December 22, 1020

To Whom it May Concern,

I am writing this letter to verify that Kim Everhart has my permission and support to conduct a research project for her doctorate program. Kim will be working with Scott Bair, a physical education teacher at Bucktail High School. The project is intended to show the impact of a combination of two contemporary instructional models on the game performance of students taught with that blended model. I am confident that her research will be valuable to both teachers and students.

If you have any questions, please contact me directly.

Sincerely,

Justin J. Evey