PHEnex Journal/Revue phénEPS

Student and Teacher Responses to a High Autonomy Climate in Physical Education within a Sport Education Season

Les réponses des élèves et des enseignants à un climat de grande autonomie en matière d'éducation physique en moins d'une saison d'éducation sportive

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Abstract

The purpose of this study was to examine students' perceptions of a high autonomy version of Sport Education in which the needs of autonomy, competence and relatedness were deliberately structured. The participants in this study were 48 grade four students and their teachers from two elementary schools in the rural southern United States. The season plan followed an "event model" competition format (Siedentop, Hastie & van der Mars, 2011) in which the students interspersed practicing jump rope skills with competitions that counted for team points. The season was designed to promote the six features of the TARGET intervention particularly "authority" (where students are given curriculum choices), and "time" (where students were able to make decisions about how to best spend their time engaged in these activities (see Ames, 1992). Through the use of student and teacher interviews, results from this study show that when a Sport Education unit is combined with the structures of a TARGET intervention, students' perceptions of their competence and feelings of autonomy can be enhanced.

Résumé

Le but de cette étude était d'examiner les perceptions des étudiants dans une version de grande autonomie de l'Éducation du Sport dans lequel les besoins d'autonomie, de compétence et de milieu semblable ont été délibérément structurés. Les participants à cette étude étaient de 48 élèves de 4ᵉ année et leurs enseignants provenant deux écoles primaires dans le sud rural des États-Unis. Le plan de la saison faisait suite à un modèle d'événement de format compétitif (Siedentop, Hastie & van der Mars, 2011) dans lequel les étudiants dispersés pratiquent des aptitudes corde à danser avec des compétitions officielles. La saison a été conçu pour promouvoir les six caractéristiques de l'intervention TARGET (Ames, 1992). Grâce à l'utilisation d'entrevues avec les élèves et les

enseignants, les résultats de cette étude montrent que quand une unité d'éducation sportive est combiné avec les structures d'une intervention cible, les besoins psycho-sociaux du milieu, la compétence et l'autonomie peut être pris en charge.

Introduction

Sport Education as a pedagogical model was designed with one essential feature in mind, to provide positive motivational sport experiences for all students in physical education through simulating key contextual features of authentic sport (Siedentop, Hastie, & van der Mars, 2011). Indeed, in his first musings on the idea of sport within physical education, Siedentop noted how many physical education classrooms were led by drill oriented teaching (Siedentop, 1998). Consequently, Siedentop believed that Sport Education, through a combination of direct instruction, cooperative work, and peer teaching, could be an effective pedagogical model for providing motivational sport experiences in physical education.

Of particular interest is that early research on Sport Education focused on student motivation, but in a way that did not directly or formally measure motivational indicators. Rather, the earliest papers report that students found the Sport Education model to be fun and enjoyable (MacPhail, Gorely, Kirk & Kinchin, 2008). They enjoyed a feeling of affiliation and being part of a team. Hastie and Sinelnikov (2006) found that enjoyment related to both skill and social portions of sport education. Students reported that fun came from improving and being part of a team.

Other studies have shown similar results. Carlson and Hastie (1997) found that students enjoyed team affiliation, increased time with classmates and some students found winning contributed to the fun of Sport Education. Earlier, Hastie (1996, p. 88) noted that students achieved "high levels of student engagement in game play and scrimmage contexts, and particularly high levels of congruent behaviors in the nonplaying roles" and reported "they enjoyed taking administrative roles." Further, students showed "a strong preference for student coaches over teacher instruction was also reported."

Research has also revealed that teachers find the Sport Education model as an attractive alternative to regular physical education due to the positive effect on teacher efficacy (Alexander & Luckman, 2001), increased involvement of students (Grant, 1992; Strikwerda-Brown, & Taggart, 2001) and improvement of student skill development (Alexander, Taggart, & Thorpe, 1996). In addition, studies have revealed that students have a better understanding of play (Browne, Carlson, & Hastie, 2004), an increase in perceived effort (Wallhead & Ntoumanis, 2004) and an increase in success rates along with more opportunities to respond (Hastie, 1998). Given this, more recent research has started to investigate the underlying reasons for its popularity (see Wallhead, 2012). From teachers' perspectives, Sport Education engenders a higher quality of working life because of greater perceptions of student investment and engagement, particularly as the teacher moves off center-stage.

From students' perspectives, there have been suggestions that the structural characteristics of the Sport Education curriculum, such as team continuity and peer coaching could facilitate a task-involving climate. Essentially, the tenet is that Sport Education provides an autonomy supportive climate that positively

affects enjoyment, perceived effort, and perceived competence (Wallhead & Ntoumanis, 2004). Since the Wallhead and Ntoumanis paper, others have empirically investigated students' positions with regard to perceptions of a task-involved climate. Spittle and Byrne (2009), in a similar study to Wallhead and Ntoumanis, found that Sport Education had a positive impact on maintaining high levels of intrinsic motivation, task orientation, and mastery climate compared to traditional teaching of secondary physical education. Sinelnikov and Hastie (2010) wanted to measure the objective motivational climate during a season of Sport Education. Results from their study found that the motivational climate had elements of both mastery-oriented and performance-oriented tasks. That is, depending upon the extent to which the teacher involves student voice and choice during the skill practice and preseason phases, and depending upon the extent to which the formal competition is driven solely by teams' win-loss records (or if other factors such as fair play are included), a Sport Education season can potentially produce a climate that privileges a mastery or a performance focus.

With regard to students in elementary schools, only the study of MacPhail et al. (2008) collected data specifically identifiable with student motivation. In that study, fifth grade students reported a preference for Sport Education over their previous physical education lessons, which were typically short, multi-activity units, leading the authors to suggest this may be in part due to greater opportunities for autonomy, affiliation, competition, and perceived learning.

One theory used to study motivation is known as self-determination theory (Deci & Ryan, 1985). Self-determination theory is made up of three critical psychological needs of everyday life. These needs are composed of three different sources of self-motivation used by individuals; autonomy, competence, and relatedness. Using self-determination theory Perlman and Goc Karp (2010) assessed the motivation of secondary students within physical education. Through qualitative measures, results showed that aspects of Sport Education provided support for needs of autonomy, competence, and relatedness. The researchers believe that by focusing attention on certain features of the Sport Education model, the psychosocial needs of students can be positively enforced. In a separate study, Perlman (2010) wanted to examine the effects of Sport Education on amotivated students at the secondary level in physical education. Results showed that Sport Education could have a positive effect on the enjoyment and relatedness of amotivated students compared to a more teacher-directed, skill/drills centered approach to teaching. Because of this combination, teachers using Sport Education may focus on team affiliation for amotivated students as a way of increasing relatedness and thus having a positive effect on enjoyment.

Although elementary students show very positive responses to Sport Education (Sinelnikov & Hastie, 2010; MacPhail, Kirk, & Kinchin, 2004; Mowling, Brock, & Hastie, 2006) little research exist that specifically investigates their perceptions of added responsibility and freedom of choice during physical education. Wallhead, Hagger, and Smith (2010) found that Sport Education had a positive effect on the autonomous motivation in physical education for elementary and junior high students. With a need for increasing physical activity time in non-school settings, these results clarify the benefits of creating an autonomy supportive climate in the physical education classroom.

From the self-determination theory perspective, Wallhead (2012) believes that a setting should be created that supports all three psycho-social needs. With an emphasis on competence, relatedness, and autonomy the desired result is a move towards more self-determined forms of motivation. An intervention known as TARGET (Ames, 1992) can potentially foster a mastery climate of learning. Ames identified six teaching structures that make up TARGET.

    (1) Task-instructional practices are designed with variety and individual challenge. Students establish self or group goals for improvement.

    (2) Authority-students are included in the instructional process by being involved in the decision-making process, task design, and developing self-management skills.

    (3) Recognition- a focus should be placed on individual progress, improvement, and effort.

    (4) Grouping- students should have a choice in grouping strategies and the opportunity to work with mixed ability, cooperative groups.

    (5) Evaluation- students should be involved with self-assessment and teachers should individually offer feedback.

    (6) Time- maximum opportunity for practice and learning. Teachers must be flexible with scheduling.

The Sport Education model provides connections with the TARGET structures, which can produce a task-involved climate (Wallhead & Ntoumanis, 2004). This task-involved climate may influence positive motivational responses from students. Morgan and Carpenter (2002) found that when the TARGET structures were adjusted to promote a mastery climate, students' motivation in athletics lessons improved. From an examination of previous studies, Wallhead (2012, p.144) believes that,

> evidence would suggest that Sport Education is most efficacious in developing student perceptions of relatedness, and to some degree competence. Since students may prioritize one or a combination of these needs as influential for their autonomous motivation, further research is needed to examine the influence of Sport Education on the satisfaction of specific needs and the influence this satisfaction has on changes in autonomous motives for physical education.

From this, Wallhead (2012) suggested that future research of Sport Education should include an examination of an autonomy supportive teaching climate that emphasizes students' choice and control within tasks. Therefore, the purpose of this study was to examine students' perceptions of a high autonomy version of Sport Education in which the needs of autonomy, competence and relatedness were deliberately structured.

Method

Participants

The participants in this study were 48 fourth-grade students and their teachers from two elementary schools in the rural south of the United States. The schools enrolled 472 and 398 students respectively; of which 16% received free or reduced school meals and 89% had English as their first language. All participants provided assent to participate and their legal guardians gave informed consent. The university's Institutional Review Board for Human Subjects research approved the protocol for the study.

Description of the Season

   Typically, Sport Education seasons follow the patent of professional sports where teams have a training camp, some preseason games, and a period of formal competition and playoffs. There are however, other competition formats used more in individual sports such as track and field, swimming and motor sports. This is called the event model format (Siedentop, Hastie & van der Mars, 2011). An event model is characterized by students competing individually, but their points count towards a team total. The format for each sport is determined by the number of skills to be learned and the amount of time needed to properly test. For this study, two practice days were scheduled prior to each formal competition test.

   Jump rope was chosen for two reasons. First, it was not a "sport" like football or volleyball, and hence the students would not have preconceptions of the activity with regard to its competitive context. Second, while all students had previous experience with jump rope, lessons followed a particularly direct instructional style, in which all students simultaneously completed skills selected by the teacher.

   During all lessons of the seasons, students took specific responsibilities associated with the roles of chart manager, fitness leader, equipment manager, and mascot manager. Students on each team were responsible for selecting individuals to fulfill each role. In order to create an accountability system for the student-led selection process, daily points were awarded for warming up and completing fitness challenges, collecting and retrieving equipment and score charts, and bringing their team mascot to class.

   On team practice days, students would first complete a warm up under the guidance of their "fitness leader", and then had the opportunity to practice any of the skills listed on five master posters distributed throughout the work area. Each poster had a specific point's value and gave a visual description of a number of skills. On competition days each team was paired with another team from the class, and these teams alternated scoring each other. Each student judge had a master poster and a score sheet on which they registered the point value that was earned by the jumper if they were successful. Table 1 provides a sample list of jumps and their determined point value.

Table 1
Sample Jump Rope Skills and Point Values

Name of jump	Description	Number required	Point value
Skier	Jump side to side like you're skiing	5	5
Heel to heel	On your first jump touch your heel with your toes pointed upward. Then switch feet and touch your other heel. Continue to alternate feet.	10	10
Jogger (fwds/bkwds)	Using a jogging motion attempt to jump the rope forwards and backwards.	8	15
Leg over	Pull your right leg up and jump the rope with your left leg, while putting your right arm under your right knee. Now pull your arm out from under your leg and do a side swing	10	20
Double jump	With one jump, pass the rope under your feet two times.	2	25

Each team was allocated seven minutes in which all students were able to earn points for their team. Total team points were then calculated and transferred to the main class score chart. On the final day of the season, students participated in an awards ceremony, which recognized individuals and teams on their accomplishments during the Sport Education season. Table 2 details the 17-lesson plan for a season of Sport Education in which jump rope was the selected activity.

Table 2
Sport Education Jump Rope Season Plan
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Lesson	Content
1	Introduction
	Jump Test (used to select teams)
	Free practice
2	Team announcement, explanation of roles, team selection of names, colors & mascots.
	Explanation of jump rope skills and introduction of the posters and the scoring system
	Free practice from posters within teams
3	Introduction of daily protocols (class entry, warm up, equipment protocols)
	Explanation of the competition format and competition score sheet
	Free practice in teams
4	Free practice in teams
5	Introduction to competition protocols
	Practice competition
6	Free practice in teams
7	Free practice in teams
8	Formal Competition 1
9	Free practice in teams
10	Free practice in teams
11	Formal Competition 2
12	Free practice in teams
13	Free practice in teams
14	Formal Competition 3
15	Introduction to long rope challenges
	Free practice in long rope skills
16	Free practice in long rope skills
17	Long rope competition
	Awards ceremony

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The season was designed to promote the six features of the TARGET intervention. Table 3 provides details on how TARGET was promoted.

Table 3
TARGET Structures during Sport Education Season

Name	Description
Task	Students were given the freedom to decide on level of difficulty during practice and formal competition.
Authority	Students were allowed to choose the jumps that they would like to practice and attempt during formal competition. Teams could work together to develop strategies or group goals.
Recognition	Points were earned for completing a jump challenge. Teams were recognized for jumping accomplishments (rather than individuals).
Grouping	Throughout practice, students could work independently or with classmates. During formal competition students were able to select their partner to assist with judging.
Evaluation	Students had multiple opportunities to increase their score. Students were able to seek out assistance from the teacher or their classmates.
Time	Maximum opportunity for practice of skills

Data Collection

Student interviews. Students were interviewed either individually or with a partner in their classroom while other students were participating in the physical education lesson. In accordance with Steward and Steward's (1996) recommendations when interviewing children, the interviewers begin with an open-ended question to elicit a spontaneous narrative, and then used direct questions to fill in the blanks in that narrative. In this study, that open-ended question was "tell me about the jump rope season." Follow up questions included "what were the things you liked, or the things you didn't like?" "give yourself a score out of 10 for how good you were at jump rope before the season started, and a score for where you are now", and "what did you think of having the charts, where you could chose what skills you could do in practice and in the competitions?" The second open-ended question asked the students to "tell me about your jump rope lessons in physical education before this season", with follow up questions including "do you like one way better than the other?" and "can you tell me the reason for your response?"

Teacher interviews. Interviews with the teachers and aide were conducted privately in the teacher's office. Each interview was recorded and later transcribed. The researcher began with open-ended questions to elicit an account of their perceptions of the unit. Questions such as "How do you see the students responding?" and "how does this compare to previous jump rope lessons?" were posed. Follow up questions included "did you see any major differences in the behavior of the students?" and "do you think they were enjoying the activity?"

Another follow up question was "how are they handling the extra freedom with choices?"

Data Analysis

The data were analyzed using constant comparison (Lincoln & Guba, 1985) and analytic induction methods (Patton, 2002) in order to identify and extract common themes and patterns. Firstly, the interview transcripts were read and re-read, with key words being extracted and coded. Then, common themes were generated by clustering quotes to form a category consistent with a single topic or idea. If data did not fit into an already existing category, a new category was created. Finally, identified themes were then compared and contrasted and the data were re-examined. A search for disconfirming or negative evidence (Miles & Huberman, 1984) was also conducted. This process involved researchers searching through the data for evidence that was consistent with or disconfirmed the preliminarily established themes.

Results

Student Responses

Themes were generated from the responses of the students, which related to the six structures of the TARGET intervention. These were titled "Task," "Authority," "Recognition," "Grouping," "Evaluation," and "Time." In response to the question "tell me about the jump rope season," students identified words associated with the Sport Education setup. Words including mascots, teams, team names, tests and jumps were identified the most often. The task structure states that instructional practices are designed with variety and individual challenge. Students identified the purpose of learning new jumps within the Sport Education season. Specifically a student stated, "You could learn new jumps and get more points by learning new jumps." The authority structure of TARGET states that students should be involved in the decision making process. A number of students listed "tests" as something that they liked about the jump rope season. One reason for this enjoyment could be the freedom to choose the skills to complete during the competition. One student stated, "I liked doing the tests the most because you could do any jumps." Students also had a choice in the jumps to attempt during the formal competition. The most common answer to "what strategies did you use when choosing your skills for testing" was choosing the "easiest" and the ones "that I knew." The recognition structure of TARGET states, "a focus should be placed on individual progress." Students were able to choose jumps, which would lead to points for their team "when we did it (jumping) a lot it got me started doing it better and stuff. I learned some different jumps and stuff." The most common response to the question "what were the things you like" was being on teams. In addition, having "fun" and working with friends were mentioned, "I liked it because it was fun and you actually knew the people you was jump roping with and yall [sic] could get along together and it was fun." Using the Sport Education format, students were grouped together to form teams and received the opportunity to work alongside classmates during practice and competition. When asked "tell me about your jump rope lessons in physical education before this season" students mentioned that there were no teams and that most of the work was completed on their own. Another interesting theme from the student responses was their evaluation of their jump rope ability.

Students were asked "give yourself a score out of 10 for how good you were at jump rope before the season started, and a score where you are now." Each student believed that their overall ability improved from participating in the Sport Education jump rope unit. One student shared their opinion "I am better, I can jump more like longer than I used to and I can do more tricks." Raw data shows that the average score before the unit was 5.69, whereas the average score after the unit was 8.31. In response to the question "what did you think of having the charts" many students found the charts to be "helpful." "The charts helped a lot because a few of them when people tried to describe them to me, it didn't really work but when I looked at the charts it helped a lot more" was expressed by one student." The TARGET intervention is intended to provide maximum opportunity for practice and learning. The charts provided quick instruction, which led to more time for students to practice different skills.

Teacher Responses

Similar to student responses, themes were generated from the interviews with the teachers. Particularly, responses supported the structures of the TARGET intervention and its impact on student involvement. From a task perspective one teacher believed that the students liked the variety in activity "all of that (unit) was different and I think that they liked the variety of the lessons." Whereas the other teacher felt the students were more engaged "I think the students are more engaged, they seem to be able to pick up on skills they want to work on and expand their knowledge and skill level." The teachers believed that the students had more authority in their class involvement. The setup of the unit allowed more decision-making and self-direction.

> This gives them an opportunity to start where they feel comfortable and expand on that and it's self-directed and that's a big advantage to go to the chart and reference it and go back and try that skill. You leave a lot of the accountability to the students and taking the measuring off of us teachers that is nice, because they're able to figure out what their peers can do and where they need to be versus a number scale.

Because of the point system the teachers believe that students take more recognition in their own progress and effort that is given "I see kids that typically get frustrated by jump rope willing to try something because they know their points count." Similar to the students, the teachers also believe that the establishment of teams (Grouping) led to more enjoyment of the activity. Instead of having a teacher tell you what to do, the possibility of finding a solution with a teammate or a group of students was a better alternative. The higher autonomy with peer support also had an impact on evaluation. As opposed to being told what to practice, students could choose their own skill progression "If they felt like they had gotten some things down, they had the freedom to move on to something different…that's a nice freedom to be able to move around and try different things." The teachers also believe that students spent more time on task due to the aforementioned engagement. "I see a lot of kids that typically are not engaged that are now engaged in this, I think the point system helps that, I've seen skills that I haven't seen before which is a good thing." Overall, the teachers saw the task part as the strongest component. The teachers believed that student enjoyment increased which led to more knowledge and an expanded skill level.

The higher autonomy with peer support gave them the freedom to choose their own path and whether to complete the task individually, or with a teammate. Sport Education essentially provided an outlet for students to take more of a vested interest in the outcome of their team and overall achievement.

Discussion

One of the central tenets of self-determination theory is that the quality of social contexts influences the motivation, performance, and well-being of individuals who operate within them. The theory uses the concept of *autonomy* support versus control to characterize the quality of social environments, hypothesizing that *autonomy*-supportive social contexts tend to facilitate self-determined motivation, healthy development, and optimal functioning (Black & Deci, 2000). Results from this study show that when a Sport Education unit is combined with the structures of a TARGET intervention, the psychosocial needs of relatedness, competence and autonomy can be supported. Student interviews revealed that being placed on teams and working alongside classmates led to an increase in perceived student enjoyment. Previous research stated that working in cooperative groups is helpful for promoting student enjoyment (Hastie, 1996). An increase in enjoyment and, as a result, more engagement in activity can be due to the student freedom to choose the activity. Morgan and Carpenter (2002, p. 222) believe that freedom of choice can impact student performance stating that students are "more likely to choose more challenging tasks and continue to strive for improvement in their standard of performance. Similarly, teachers believed that because of the structure of the class, students were more engaged which they believe led to higher achievement. Similar to the Perlman (2010) study, the teachers believed that there was more engagement from students who are normally off-task. They believe this is due to the structure of the unit and the contribution of each student to the success of the team. The new found freedom, along with the point system for competition, established an environment where students recognized their own effort and contribution to the team. Since all students were involved in the process, the teachers believed that the result was more time on task and a decrease in undesirable behavior.

Future research will need to continue to emphasize students' choice and control within tasks (Wallhead, 2012). This will be more evident during the skill practice portion of a sport education season. Specifically, more choices will be needed for traditional team sports. In jump rope, you have a number of jumps that can be practiced by an individual. Likewise, in other individual sports, practice options are available which allows the student to choose areas where improvement or skill refinement is needed. The type of skill should also be considered when planning a season for team activities. Practicing a closed skill (one way of performing the skill) may be beneficial for a number of individual sports. However, many team sports consist of an open skill environment. The challenge with team sports is identifying activities, which not only improve individual ability, but also team capabilities.

Research should also investigate the student role of leadership from participation in a Sport Education unit with an emphasis on student choice and control within tasks. When faced with the task of choosing your activity, learning how to complete the task and understanding the requirement of time, students may naturally develop leadership abilities. This notion is certainly something

future research might investigate. The teacher gives a directive and the student is required to comply. In the current study, control is in the hands of the student. Learning how to monitor the previous conditions can potentially develop leadership skills within the individual.

Finally, longitudinal studies are needed to determine the impact of high autonomy on physical activity levels. Results from the current study show that students indicate an increase in perceived enjoyment and engagement due to their contribution to the success of their team. The high autonomy climate can have an immediate impact on physical activity levels, but the significance for future learning is unclear.

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