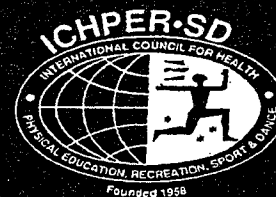


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Volume II. No. 1
Spring & Summer 2007

Situational Motivation during Seasons of Sport Education

by Oleg A. Sinelnikov, Peter A. Hastie, and Keven A. Prusak

Abstract

This study examined the motivational responses of students during participation in a season of Sport Education, particularly in the skill practice, officiating, and game play phases of the season. Two classes of sixth grade students and three classes of ninth grade students ($n = 103$) participated in a semester long physical education Sport Education unit. Situational motivation was assessed using the Situational Motivation Scale. While the sixth grade students were more self-determined during all phases of Sport Education, all students exhibited high levels of intrinsic motivation and low levels of no motivation or amotivation with no gender or context differences.

Situational Motivation during Seasons of Sport Education

Introduction

Self-determination theory focuses on the degree to which human behaviors are volitional or self-determined (Deci & Ryan, 1985, 2000). Self-determination is seen as an approach to human motivation and personality that takes into consideration the importance of humans' inner resources for personality development and behavioral self-regulation (Ryan, Kuhl, & Deci, 1997). The understanding of human motivation requires a consideration of three primary psychological needs – autonomy, competence, and social relatedness – which are seen as antecedents of intrinsic motivation (Deci & Ryan, 1985, 2000; Ryan et al., 1997).

Social contexts and individual differences that support satisfaction of these basic needs facilitate natural growth processes, including intrinsically motivated behavior and integration of extrinsic motivations; whereas, those that undermine such antecedents are associated with lower motivation, performance, and well-being (Ryan & Deci, 2000). Furthermore, motivation itself has been viewed as a key factor influencing student learning outcomes (Chen, 2001). Self-determination theory maintains that when students are intrinsically motivated, they experience enjoyment and feelings of competence and control. This is seen as a result of the change in the perceived locus of causality from extrinsic to intrinsic (Deci & Ryan, 1985). Vallerand's (1997, 2001) work, while further advancing the theory, also demonstrates the existence of three levels generality of where self-determined behaviors occur: global, contextual, and situational.

To further understand these theoretical constructs in the context of physical education, it is possible to focus attention on a particular student and examine how this student feels about engaging in an active lifestyle in general. Doing so determines the global level of generality for self-determined behaviors. The contextual level of generality, within which self-determined behaviors occur, relates to how that same student views engagement in physical education in the school. Within Vallerand's (1997) hierarchical model, situational motivation refers to the motivation that an individual experiences while engaged in a particular activity. Therefore, an

examination of situational motivation provides insights to the motivation of the student only to the extent that motivation is related to participation in the specific drill or activity during the course of the physical education lesson. The situational level of motivation can fluctuate in a physical education lesson when the activity changes; however, all levels of generality are interrelated (Prusak, Treasure, Darst, & Pangrazi, 2004).

A fundamental tenet of the self-determination theoretical perspective postulates that a more self-determined the motivation type (i.e., intrinsic motivation [IM] and identified regulation [IR]) results in more positive cognitive, affective, and behavioral consequences. When the motivational regulations are low in autonomy (i.e., high in amotivation [AM] and external regulation [ER]), consequences are less positive. The self-determined motivation types are predictive of positive outcomes in a number of contexts, including children's physical activity (Chatzisarantis, Biddle, & Meek, 1997; Parish & Treasure, 2003; Prusak, et al., 2004), education (Miserandino, 1996; Vallerand & Bissonnette, 1992), and health care (Williams, Rodin, Ryan, Grolnick, & Deci, 1998).

When further considering the situational level of motivation (i.e., the *here-and-now, in-the-moment* motivation), the type of behavior of the individual can be placed on the self-determination continuum, which extends from self-determined behavior to non-self-determined behavior. On this continuum, intrinsic motivation results in more self-determined behaviors, while amotivation is associated with non-self-determined behaviors (Prusak, et al., 2004). In general, it is desirable for individuals to have intrinsic motivation. Conversely, when people are rewarded for an activity that is interesting in itself, a decrease of interest in that activity may occur (Deci & Ryan, 1985).

In light of these findings, the importance of students having high levels of intrinsic motivation or displaying high degrees of self-determined behaviors during physical education lessons seems hard to underestimate. In fact, there is a curriculum and instructional model that has been described as autonomous and student driven, and particularly bodes well with typically marginalized physical education class population (e.g., low skilled students, girls). This model is known as Sport Education (Siedentop, Hastie, & van der Mars, 2004). As a vehicle of developing competent, literate and enthusiastic sportspersons, the Sport Education model has been reported to result in students who work harder than in regular physical education, show greater effort, have increased levels of enjoyment and enthusiasm (Alexander & Luckman, 2001; Carlson & Hastie, 1997; Grant, 1992; Wallhead & Ntoumanis, 2004), and demonstrate improvements in skills and tactics (Hastie, 1998b).

The Sport Education Model is characterized by the following distinct features: team affiliation, formal competition, culminating event, festivity, and record keeping. Participation in a season of Sport Education sees students involved in team practices and competitive games, all leading to a culminating event. In addition, students are engaged not only in playing roles (each as a member

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of the team), but in officiating or scorekeeping duties as well (Siedentop et al., 2004). When compared with traditional approaches to teaching sport activities, a Sport Education curriculum increases perceptions of a task involving climate and perceived autonomy and, therefore, enhances motivation of high school students toward physical education (Wallhead & Ntoumanis, 2004).

In contrast to the Sport Education Model, Russian physical education lessons incorporate social contexts with a controlling environment from the standpoint of curriculum and teaching methods. The curriculum in Russia is nationally standardized with only minor deviations allowable for different geographic localities and existing school facilities (Bondarenkova, 2005). The prescribed and diligently followed method of teaching physical education in Russian schools is one of a direct instructional style, along with the national recommendation of 50-60% of lesson time dedicated to the development of *general physical preparedness* (i.e., physical fitness). Lessons are taught using what resembles a military command method of teaching, which is a pedagogical carryover from the Soviet times.

Today's students in Russian schools, however, were born after the collapse of the Soviet system. Nonetheless, the national aims of physical education are still listed as preparing "students for life, work, studies, *boys for military service, and girls for homemaking duties*" [italics added] (Bondarenkova, 2005, p. 4). One of the problems plaguing Russian physical education in schools has been low levels of student motivation toward physical education, especially in the middle and high school levels. In particular, 56.6% of high school girls, and 28.6% of boys reported feelings of indifference to the subject of physical education and 11.8% of girls had negative views of it (Kardialis & Zuoziene, 1999). Moreover, Ntoumanis, Pensgaard, Martin, and Pipe (2004) reported that a lack of motivation, or amotivation, during physical education lessons resulted in non-attendance, low involvement in class, and low intention to be physically active after leaving school.

The purpose of this study was to explore the situational motivation of Russian students during their participation in Sport Education, particularly in the three phases of the season (skill practice, officiating, game play). It was hypothesized that students would show high degrees of self-determination, with significantly higher levels of intrinsic motivation and internal regulation than extrinsic motivation and amotivation. It is important to note that recent cross-cultural research in the United States and Russia has validated the relevance of an intrinsic-extrinsic distinction for the population in both countries, confirming that these concepts have similar meanings in both cultures (Ryan, Chirkov, Little, Sheldon, Timoshina, & Deci, 1999).

Methods

Participants and Setting

A total of 103 students (48 boys and 55 girls) participated in this study. These students were from three schools located in the central region of the Russian Federation. At one school, 22 boys and 23 girls from two sixth-grade classes (ages 11 & 12) participated in a season of basketball. At a second school, 14 boys and 23 girls from ninth grade classes (ages 14 & 15) also played basketball. At a third school, one class of ninth-grade students (12 boys and 9 girls) participated in a season of volleyball. The classes in all three

settings were co-educational and met three times a week for 50-minutes over a period of one full academic quarter (18 lessons).

Sport Education Seasons

Sport Education seasons in all settings followed a similar format. Consistent with the Sport Education Model, the students were divided into teams following initial lessons of learning the basic skills and the rules of the game. These teams then remained constant through a period of training, then a number of practice games and finally, formal competition. The students took team administrative roles, including equipment captain and trainer (coach), and during practice and competitive games, they refereed matches and kept statistics. A complete season outline representative of all seasons in the three schools is presented in Table 1.

Procedures

A modified version of the Situational Motivation Scale (SIMS) described by Guay and Vallerand (2000) was used to measure the students' motivational responses to various phases of their seasons. The SIMS was found to be a valid and reliable instrument, measuring situational motivation across diverse physical activity contexts (Standage, Treasure, Duda, & Prusak, 2003). The scale involved students responding to 14 statements on a 7-point Likert scale. The stem of the scale was, "Why are you currently engaged in this activity?" Depending on the phase of the season, the word "activity" was substituted for the following words: "skill practice", "officiating", or "game play/play in this match." Questions related to one of four dimensions of situational motivation – (1) intrinsic motivation (IM) (e.g., "because this skill practice is fun"); (2) internal regulation (IR) (e.g., "because I think this officiating is good for me"); (3) external regulation (ER) (e.g., "because it is something that I have to do"); and (4) amotivation (AM) (e.g., "I play in this match, but I am not sure it is worth it"). Students were read a consistent script providing instructions on how to complete the questionnaire in all three settings.

All students completed the SIMS three times during the season (see Table 1). The first was following the skill practice sessions during the first phase of the season (after 6 lessons). The second and third administrations were conducted during lessons 11 through 13 either after the students had played in a competitive game, or been an official. A total of 256 questionnaires were used for data analysis.

Data analysis

The 14 items of the SIMS were reduced to four subscales (IM, IR, ER, and AM), and internal consistency for each of the four subscales was determined using the Cronbach alpha technique (Cronbach, 1951). The subscales IM and AM had 4 items and subscales IR and ER had 3 items, respectively. The Self-Determination Index (SDI) was calculated using the following formula: $SDI = 2*IM + IR - ER - 2*AM$ (for a complete description, see Pelletier, Fortier, Vallerand, Tuson, Briere, et al., 1995). Higher SDI scores suggest students are more self-determined (i.e., more intrinsically motivated), while lower scores indicate students' participation is less intrinsically motivated and more amotivated.

Group differences for gender, grade, and participant role during the season were determined using one-way analysis of variance

(ANOVA). Each of the four subscales of the SIMS inventory and the measure of SDI were included as dependent variables. An alpha level of .05 was used to determine statistical differences between groups. Effect sizes were also calculated for gender and grade levels.

Previous research has reported that the Sport Education Model is attractive to typically marginalized students in physical education (e.g., girls) (Carlson, 1995; Hastie, 1998a), and has been conducted from fourth to tenth grade levels (Browne, Carlson, & Hastie, 2004; Hastie, 1998b; Wallhead, & Ntoumanis, 2004). However, this is the first attempt to make comparisons across grades within the same study.

Results

Reliability and Internal Consistency

The distributions of all scores were found to be normal, and all subscales showed internal consistency scores above .80, with the exception of intrinsic motivation for the game play context ($\alpha = .64$). By deleting one item of the IM subscale during the context of game play, the Cronbach's coefficient alpha level for game play IM equalled .98. Therefore, reliability statistics of the SIMS subscales were as follows: (1) for skill practice, IM $\alpha = .80$, IR $\alpha = .96$, ER $\alpha = .97$, and AM $\alpha = .99$; (2) for officiating, IM $\alpha = .91$, IR $\alpha = .92$, ER $\alpha = .99$, and AM $\alpha = .91$; and (3) for game play, IM $\alpha = .98$, IR $\alpha = .94$, ER $\alpha = .98$, and AM $\alpha = .84$. Acceptable reliability scores are generally considered to be those that exceed .70 (Nunnally, 1978).

Self-Determination Index

Table 2 provides the means and standard deviations for the SDI and effect sizes across different grades, gender, and phases of the seasons. Significant group differences for gender on the SDI ($F(1,102) = 8.02, p = .005$) indicated that boys were more self-determined than girls during the Sport Education season. The effect size ($\eta^2 = .49$) indicated a moderate effect of autonomy on the students' situational motivation (Cohen, 1988). There were no significant differences based on grade level or participant role; nor were there any significant interaction effects.

Situational Motivation Response

Means, standard deviations, significance levels, and effect sizes for the SIMS subscales across grade level, gender, and season are shown in Table 3. Significant differences across grade level were observed for IR and ER ($p < .05$). Despite these differences, however, the effect sizes of .24 (IR) and .29 (ER) suggest only a small effect on situational motivation.

It is important to note the high levels of group means for IM and IR, with low levels of AM throughout all three phases of the Sport Education season (skill practice, officiating, and game play). On the situational motivation continuum, Russian students clearly demonstrated higher intrinsic motivation and identified regulation than amotivation during the entire Sport Education season, regardless of the season phase.

Discussion

This study investigated the situational motivation of students during their participation in three phases of a Sport Education

season (skill practice, officiating, and game play). While statistical analysis demonstrated a significant difference in self-determination between grades during skill practice (with the sixth grade students being more self-determined than the ninth grade students), the most telling finding of the study was the high levels of intrinsic motivation and low levels of amotivation exhibited by all students throughout the season with no gender or context differences. In other words, boys and girls were highly motivated to participate, not only in practice and game play, but also in officiating roles. Students freely engaging in activities they find interesting and enjoyable, and which offer the opportunity for learning or task accomplishment, characterize high levels of intrinsic motivation (Pelletier et al., 1995). The results suggest that the Sport Education curriculum, with its autonomy supportive social factors, affects students' self-determination resulting in high levels of students' motivation toward all phases of a Sport Education season during the lessons of physical education.

The results of this study also show that the students who participated in this intervention were strongly invested in their season. Findings of this study supported earlier findings of Wallhead & Ntoumanis (2004) that participation in Sport Education leads to students' perceptions of a task involving climate and perceived autonomy, and therefore enhances motivation of students toward physical education.

Although the results of the study showed significant group differences, with a moderate effect size for gender for the SDI (indicating boys were more self-determined than girls during the Sport Education season), another important finding was the high levels of self-determination exhibited by girls and their low levels of amotivation. This is a highly positive finding for the Sport Education model, considering that Kardyalis and Zuoziene (1999) reported the majority (68.4%) of Russian middle and high school girls were either indifferent or had a negative view of physical education.

Therefore, based on the findings of the study, further exploration of the possibility of including the Sport Education into the Russian physical education curriculum, at least from a motivational standpoint, is highly recommended. Another potential benefit of including Sport Education into the physical education curriculum may lie in the provision of authentic sporting experiences and the advantages of affiliation inherent in the model. This application of the Sport Education Model might prove particularly important since Russian children currently have a little opportunity to participate in authentic formal sports competition as the number of sports clubs and sports schools has decreased from over 13,000 in 1976 to less than 3,000 in 2001 (Federal Center, 2005). Such inclusion of Sport Education into the Russian physical education curriculum could help offset some of the deficits that have resulted in the dismantling of many of the sports clubs that were popular during Soviet times, as well as increasing intrinsic motivation to become more physically active.

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Table 1

Sport Education Season Outline

Lesson	Content	Teacher's role	Students' roles
1	Introduction Rules to game Beginning skills	Class leader	Participant
2	Skills testing Team announcement	Present team lists Discuss roles Discuss fair play	Determine team roles Decide on team name
3-7	Whole class skill instruction	Class leader	Participant
8-10	Pre-season scrimmages Players learn and practice duty roles	Head coach Referee advisor	Coaches, players Learn duty role
11-15	Formal competition	Head coach Program manager	Coaches, players Duty team roles
16-17	Play-offs	Program manager	Coaches, players Duty team roles
18	Championship game Awards presentations	Program manager Master of ceremonies	Coaches, players Duty team roles

Note. SIMS was administered during lessons 6 for skill phase, and during lessons 11 through 13 for officiating and game play phases.

*Situational Motivation***Table 2***Means and Standard Deviations of Self Determination Index and Respective Effect Sizes*

	Mean	SD	Effect size
Grade			
6th grade	7.99	4.16	.18
9th grade	7.02	5.10	
Gender			
Boys	8.80 *	4.30	.49 #
Girls	6.28	4.86	
Participant Role			
Skill practice	8.55	3.88	
Officiating	7.61	4.97	
Game play	7.40	4.76	

* $p \leq .001$. # Moderate effect (0.41-0.70).**Table 3***Means and Standard Deviations of SIMS Subscales and Respective Effect Sizes*

Subscale	6th grade		9th grade		
	M	SD	M	SD	ES
IM	6.36	0.46	6.16	0.56	0.08
IR	6.40 *	0.31	5.83	0.83	0.24
ER	5.96 *	0.59	5.29	1.00	0.29
AM	2.49	0.86	2.51	0.87	-0.01

Subscale	Boys		Girls		
	M	SD	M	SD	ES
IM	6.38	0.53	6.10	0.49	0.12
IR	6.14	0.84	5.97	0.59	0.07
ER	5.69	0.97	5.43	0.87	0.10
AM	2.32	1.06	2.68	0.57	-0.25

Subscale	Skill Practice		Officiating		Game Play		
	M	SD	M	SD	M	SD	ES
IM	6.26	0.49	6.29	0.51	6.16	0.60	.05
IR	6.29	0.67	5.90	0.67	6.04	0.84	.13
ER	5.61	0.64	5.42	1.13	5.64	0.97	.06
AM	2.21	0.89	2.85	0.81	2.45	0.82	.11

* $p < .05$. ■