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Change in Affect and Needs Satisfaction for Amotivated Students within the Sport Education Model

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The purpose of this study is to examine the influence of the Sport Education Model (*SEM*) on amotivated students affect and needs satisfaction. 78 amotivated students from an original pool of 1,176 students enrolled in one of 32 physical education classes. Classes were randomly assigned to either the *SEM* (N = 16) or traditional class (N = 16). Data were collected using a pretest/posttest design measuring affect (enjoyment) and needs satisfaction. Analysis of data used repeated-measures ANOVAs to examine differences. Results indicated significant changes in amotivated student's perceptions of enjoyment and relatedness satisfaction within the *SEM*.

Keywords: amotivation, affect, self-determination

Motivation is becoming a popular area of research within physical education. This popularity can be attributed to various mental, physical and affective consequences within activity-based settings (Vallerand, 2001). However, Ntoumanis, Pensgaard, Martin and Pipe (2004) suggested that there is "little research on the lack of motivation or amotivation" (p. 197). A reason for this lack of research could be due to the limited engagement and/or participation by amotivated students within physical education providing difficulty in attaining adequate data.

The concept of amotivation is grounded in self-determination theory (SDT) (Deci & Ryan, 1985). SDT posits that motivation within a social setting can be classified as intrinsic, extrinsic, or amotivated. Intrinsic motivation is viewed as engagement due to internal prompts such as the feeling of pleasure or fun. Extrinsic motivation are behaviors prompted by external factors, such as earning an award. Amotivation is the lack of desire to engage in or participate within a specific setting. As such, SDT postulates that amotivation is the most concerning form of motivation, due to various negative mental, physical and affective outcomes. For instance, an amotivated student may perceive physical education as meaningless and may exhibit avoidance behaviors, such as making excuses not to participate in class (Ntoumanis et al., 2004).

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Facilitation of amotivation occurs through the lack of attainment within a social context of three psychological needs; relatedness, competence and autonomy (Deci & Ryan, 2000). Relatedness is defined as having a connection with peers who are deemed significant to the student (Baumeister & Leary, 1995). Competence is the perception and experiencing of effectiveness within a specific setting (Deci 1975). Autonomy is the perception of volition over one's own behavior (Deci & Ryan, 1985; Ryan & Connell, 1989). Physical education is an ideal social setting for application of SDT, in particular focusing on amotivation, as students desire support for all three psycho-social needs (Ntoumanis, 2001; Standage, Duda & Ntoumanis, 2003).

Ntoumanis et al. (2004) conducted a qualitative examination of adolescent amotivated students in physical education. Findings from this study indicated that amotivated students desired their physical education setting to enhance affect, students reporting that they would be more willing to engage and participate in class if it were more enjoyable. Findings further indicated that students desired all three psycho-social needs be supported or satisfied in the physical education setting. Ntoumanis et al. (2004) indicated that amotivated students required support for each psychological need within physical education by working in smaller groups with friends, receiving praise from authority figures, and having their voice heard. A model of instruction which has provided empirical evidence and alignment with the aforementioned aspects is the Sport Education Model (Siedentop, Hastie & van der Mars, 2004; Wallhead & Ntoumanis, 2004).

Sport Education Model

The Sport Education Model (*SEM*) was designed to provide students with an authentic and educationally rich sporting experience which focuses on teaching how to perform all aspects of sport (Siedentop, 1994). Siedentop (1994) posit that combining pedagogically sound practices and proper sporting behaviors within physical education would provide each student the opportunity to learn about sport beyond the role of participant. According to Siedentop (1994) students would become "literate, enthusiastic and competent sportspeople" (pg. 4). A literate sportsperson understands and values the rules and rituals of the game. An enthusiastic sportsperson demonstrates proper behavior and participation that keeps the spirit of the game true and honest. Students will play the game by the rules as it was intended to be played. Finally, a competent sportsperson has a level of skill that allows him/her to successfully participate. Accomplishment of these goals in the *SEM* is conducted through the implementation of six features: seasons, affiliation, formal competition, record keeping, festivity and culminating events. The *SEM* features and student benefits are well recognized within the physical education literature (Kinchin, 2006). Relevant research on the *SEM* demonstrates how students perceive positive affect change (i.e., enjoyment), and support for all three psycho-social needs.

Sport Education, Affect and Needs Satisfaction

The effect of the *SEM* on student enjoyment is well documented (Alexander & Luckman, 2001; Carlson & Hastie, 1997; Grant, 1992; Wallhead & Ntoumanis, 2004). The *SEM* promotes enjoyment for students who possess negative feelings

toward physical education through team affiliation and a connection with peers unseen in other classes. Wallhead and Ntoumanis (2004) examined self-report measures of enjoyment during a basketball season and found significantly higher levels when compared with a traditionally taught class. In addition, students enjoy the increased level of responsibility, as the teacher takes on a more passive role throughout each season (Carlson & Hastie, 1997).

The development of positive social relationships (i.e., relatedness) is evident within the *SEM* (MacPhail, Kirk & Kinchin, 2004). Clarke and Quill (2003) indicated that low-skilled students perceive a heightened sense of inclusion within the *SEM* due to features such as team affiliation. In addition, communication between peers is perceived as positive when compared with other physical education classes (Hastie & Sharpe, 1999; Carlson & Hastie, 1997). The most noteworthy findings indicate that students feel comfortable in voicing their opinion with both classmates and teachers when engaged in the *SEM* (Kinchin and O'Sullivan, 2003; O'Donovan, 2003).

A primary goal of the *SEM*, identified by Siedentop (1994), was to develop a competent sportsperson. Competence within the *SEM* relates to the demonstration of ability to both participate and understand how to play. Students are provided opportunities to experience competence through various roles beyond that of player (e.g., coach, statistician). In support of this claim, Wallhead and Ntoumanis (2004) found students possessed higher levels of perceived competence when compared with a traditionally taught class. In addition, Hastie (1998) identified a measurable increase in actual success for female students during a single season of the *SEM*.

Siedentop (1994) designed the *SEM* to allow students greater responsibility and control over their learning through infusion of strategies such as team-led practices. Clarke and Quill (2003) found that students became more self-directed and less teacher dependent when engaged in the *SEM*. In addition, studies by Wallhead and Ntoumanis (2004) and Sinelnikov, Hastie and Prusak (2007) suggest that the autonomy-supportive environment of the model facilitated changes in student motivation. Based on these studies, it seems plausible that the *SEM* can enhance perceptions of enjoyment and can satisfy psychological needs.

Amotivated students could be classified as a critical population to study, as they represent the lowest form of motivation, and display concerning behaviors, such as decreased levels of engagement and higher levels of absenteeism. The work of Ntoumanis et al. (2004) suggested that amotivated students require a physical education experience that satisfies their psycho-social needs, as well as, enhances their level of enjoyment. Therefore, the purpose of this study is to examine the affect and needs satisfaction of amotivated students within the *SEM*. Specifically, this study investigated amotivated student's differences in enjoyment, and perceptions of autonomy, competence and relatedness, between their traditional physical education program and the *SEM*.

Method

Participants and Setting

Identification of amotivated students was conducted from an original pool of 1,176 students (Male = 624; Female = 552) from a Year 9–12 school in the United States.

All 1,176 students were in Year 9 and enrolled in a semester-long required sport-based physical education course. Classes ($N = 44$) met three to four times per week (i.e., rotating schedule) for a total of 60 min each day. The primary focus of the curriculum was to offer students an array of sport-based invasion games, utilizing the skill-drill-game approach. Each unit lasted an average of four weeks or 15 lessons. It should be noted that this study was conducted over a two-year period, in an attempt to provide a more robust sample size.

One physical education teacher was assigned by the high school to teach the Year 9 physical education classes over the two-year period. He possessed eight years of teaching experience and was well-versed in the skill-drill-game approach adopted within his school district, as well as the *SEM* which he had been selectively using as a framework for instruction during the previous 5 years with elective year 11 and 12 classes.

Classes were heterogeneous groups of between 20 and 30 students. The first week of class provided students with administrative activities (e.g., locker assignment) and free-play (i.e., needs assessment). Upon completion of week one, students engaged in four different sport-based units (i.e., basketball, volleyball, soccer and lacrosse).

Measures

Identification of Amotivated Students. Identification of amotivated students was accomplished using an abridged self-regulation questionnaire for physical education (SRQ-PE) and the amotivation subscale of the academic motivation scale for physical education [AMS-PE] (Goudas, Biddle & Fox, 1994). Students responded to 12 items measuring 3 subscales of motivation (intrinsic motivation, identified regulation and amotivation). Each item required students to rate their agreement using a 7-point Likert scale ranging from 1="strongly disagree" to 7= "strongly agree". Mean item scores were calculated and selection of amotivated students followed guidelines established through the work of Ntoumanis et al. (2004) who indicated that amotivated students in physical education score >4.5 on the amotivated section of the AMS-PE and <3.5 on both the intrinsic and identified regulation subscales of the SRQ-PE.

Enjoyment. To assess student's enjoyment within their physical education program, students responded to the 7-item enjoyment subscale of the Intrinsic Motivation Inventory (McAuley, Duncan and Tammen, 1989). Each item was rated on a 7-point Likert scale ranging between 7="very strongly agree" and 1="very strongly disagree". Enjoyment scores were calculated by initially reverse scoring appropriate items followed by calculating mean scores for each student. Appropriate reliability and validity have been documented for use in secondary physical education (Mitchell, 1996).

Need Satisfaction. Assessment of need satisfaction was measures using the Basic Psychological Needs Scale in Physical Education [BPNS-PE] (Ntoumanis, 2005). BPNS-PE is a 21-item questionnaire, using a 7-point Likert scale ranging from 1= "not true at all" to 7= "very true". Subscale scores for autonomy, competence and relatedness were calculated through mean scoring of the responses to each item within the subscale. Appropriate validity and reliability have been documented for use within secondary physical education (Ntoumanis, 2005).

Procedures for Assignment of Treatments

The original pool of 1,176 students completed the SRQ-PE and AMS-PE during the first day of class. Data collection for IMI and BPNS-PE followed a pretest/posttest design. All 1,176 students completed the IMI and BPNS-PE during the second and last day of class. Participants were informed that information would be used to improve their current physical education program and required 30 min to complete. Upon completion of the initial surveys, data were entered into SPSS (SPSS, Chicago, IL), by a graduate student unaffiliated with the study. Analysis of initial data focused on student's scores of the SRQ-PE and AMS-PE to identify those students deemed amotivated following the guidelines (>4.5 on the amotivated section of the AMS-PE and <3.5 on both the intrinsic and identified regulation subscales of the SRQ-PE) established through the work of Ntoumanis et al. (2004). Analysis of data identified 78 (Male = 24; Female = 54) amotivated students enrolled in 32 different classes. Ntoumanis and colleagues (2004) noted that amotivated students categorized using the aforementioned method verbally acknowledged possessing low levels of motivation within physical education. In addition, a similar percentage of physical education students were deemed amotivated (5.5–6.6%) within this study as compared with the Ntoumanis et al. (2004) study.

Assignment of classes to teaching-approach (i.e., *SEM* or Traditional) was conducted randomly by an unaffiliated graduate student. As such, 16 classes were taught using the *SEM* while 16 classes were taught using the traditional-approach. Student distribution among classes were 40 (Male = 14; Female = 26) in the *SEM* and 38 (Male = 10; Female = 28) in the traditional-approach.

Teaching Approaches

Sport Education Model. Implementation of the *SEM* units/seasons focused on infusing all six key features; team affiliation, record keeping, seasons, formal competition, festivity and culminating event (Siedentop, 1994). Each season began with a skill/tactical focus, followed by intra/interteam games, concluding with a postseason tournament. Skill/tactical development was primarily teacher-led focusing on developing students' ability to successfully perform and/or understand game specific skills or tactics. In addition, these lessons placed students on heterogeneous teams with the infusion of various roles (e.g., captain, duty team, official). Intra/interteam game play allowed teams time to practice, learn and apply learned skills/tactics within formal team practices. Each lesson began with a team practice and concluded with small-sided games. During this phase of the lesson, students and teacher collaborated on the development of a fair play/sportspersonship rubric. Each game was evaluated by winning/losing, completion of roles and fair play/sportspersonship. Finally, postseason tournaments were nonelimination round-robin, with a championship game during the final day of the season. Furthermore, an award ceremony concluded each season and provided students with awards, such as overall champion, most improved, and team who portrayed the most sportspersonship.

Traditional Approach. Implementation of the traditional approach followed a skill-drill-game approach. Lessons were led by the teacher-led who designed, developed and implemented class warm-ups, skill practices and drills, and

concluded with game play. Games traditionally followed the sport portrayed in elite or competitive athletics (e.g., 5 vs. 5 in basketball) and students had different teammates each lesson. It should be noted that some lessons provided game modifications that focused on a learned skill (e.g., using only the forearm pass and set within a volleyball game), yet these were minimal. Games were officiated by both students and teacher, although the teacher provided the final decision when students could not come to a compromise. Each unit ended with a round-robin tournament that placed students on teams for 4–6 lessons. The only statistic recorded during tournaments was team wins and losses. Table 1 provides a comparison of daily lessons between the *SEM* and traditional approach within the soccer unit to illustrate differences and similarities within both approaches.

Model Fidelity

Due to the examination of two different instructional-approaches over several content units, it was critical that implementation represented both approaches. Verification of implementation of both approaches followed a combination of guidelines from previous *SEM* comparative studies to ensure model fidelity (Hastie & Sinelnikov, 2006; Ko, Wallhead & Ward, 2006). Verification procedures included (a) development and assessment of materials, (b) training and communication between researcher and teacher, and (c) implementation evaluation.

Development and Assessment of Materials. Before beginning the study, the researcher and teacher met to develop unit and lesson plans for both approaches (i.e., *SEM* and Traditional). Materials (i.e., unit and daily lesson plans) for the traditional-approach were obtained from the school curriculum unit and lesson plan resource manual. This manual based on the skill-drill-game approach was created to standardize all physical education experiences for Year 9 students. In addition, meetings provided time to develop all *SEM* related plans and materials. A secondary focus of the meetings was to ensure that students were taught similar content and attempt to alleviate crossover teaching (e.g., implementation of fair play with the traditional approach). Once all materials were developed, two independent experts in the field of physical education used the observation benchmark check sheet (Table 2) for examining prestudy plans and materials (Ko et al., 2006). Interobserver agreement for course materials was 100% for the *SEM* benchmarks.

Training and Communication Between Researcher and Teacher. The physical educator possessed adequate qualifications and abilities to implement both approaches through his previous year's experiences. To examine teacher abilities to implement both approaches, a pilot study was conducted using four different classes engaged in two units a semester before the study. Upon completion of the pilot study, both researcher and teacher felt comfortable that the *SEM* and traditional approaches would be implemented appropriately. During the study, the teacher and researcher communicated and reflected upon each lesson on an alternating day basis. Reflection time allowed for clarification of any concerns or issues which would compromise implementation of the *SEM* and/or traditional approaches.

Table 1 Comparison of Daily Lesson Focus during Basketball for the *SEM* and Traditional Approach

Day	*SEM*	Traditional
1	Introduction to Soccer	Introduction to Soccer
	Game Play (Needs Assessment)	Game Play (Needs Assessment)
	Selection of Team Coaches	
2	Announcement of Teams/Coaches	Passing
	Passing	Skill Practice
	Team Practice on Home Court	Game Play (6v6)
	Introduce Game Play (3v3)	
	Introduce Duty Team	
	Choose team name	
3	Team Warm-up/Practice	Dribbling
	Dribbling	Skill Practice
	Intrateam Game Play (3v3)	Game Play (6v6)
	Student Roles and Responsibilities	
4	Team warm-up/practice	Shooting and Approaching the Net
	Shooting and Approaching the Net	Skill Practice
	Intrateam Game Play (3v3)	Game Play (6v6)
5	Team warm-up/practice	Goal Keeping
	Goal Keeping	Skill Practice
	Pre-Season Games (3v3)	Game Play (6v6)
	Fair play/Sportspersonship	
6	Team warm-up/practice	Heading and Throwing-in
	Heading and Throwing-in	Skill Practice
	Pre-Season Games (3v3)	Game Play (6v6)
7	Team warm-up/Practice	Skill Review Stations
	Pre-Season Games (3v3)	Game Play (6v6)
8	Team warm-up/Practice	Review of Skills
	Regular Season (3v3)	Game Play (6v6)
9	Team warm-up/Practice	How to Self-Officiate Games
	Regular Season (3v3)	Game Play (6v6)
10	Team warm-up/Practice	Class Warm-up
	Regular Season (3v3)	Game Play (6v6)
11	Team warm-up/Practice	Class Warm-up
	Regular Season	Game Play (6v6)
12	Team warm-up/Practice	Class Warm-up
	Regular Season (3v3)	Game Play (6v6)
13	Team warm-up/Practice	Class Warm-up
	Regular Season (3v3)	Game Play (6v6)
14	Team warm-up/Practice	Class Warm-up
	Regular Season (3v3)	Game Play (6v6)
15	Team warm-up/Practice	Class Warm-up
	Regular Season (3v3)	Game Play (6v6)
16	Team warm-up/Practice	Class Warm-up
	Regular Season (3v3)	Game Play (6v6)
17	Team warm-up/Practice	Tournament
	Post-Season Tournament	
18	Team warm-up/Practice	Tournament
	Post Season Tournament	
19	Team warm-up/Practice	Tournament
	Post-Season Tournament	
20	Final Competition	Championship
	Awards Ceremony	No Awards Ceremony

Implementation Evaluation. Evaluation of implementation was conducted using the *SEM* benchmark evaluation sheet (Ko et al., 2006) presented in Table 2. Specific aspects of traditional-approach lessons (e.g., teacher-led skill practice, use of full-sided games) were identified and listed for later videotape analysis. Each lesson was videotaped for the purpose of supporting fidelity of implementation of both approached to ensure consistency of instructional implementation across all 32 classes. Two independent physical education experts, through examination of all videotaped lessons, confirmed appropriate implementation of lessons using the *SEM* and traditional-approach. To ensure appropriate evaluation, two graduate students unaffiliated with the study, but who understood model-based instruction, provided a secondary check to support model fidelity. Both observers reviewed one tape per week (i.e., 6 lessons representing both the *SEM* and Traditional approach) and reached interobserver reliability of 98% for the *SEM* and 95% for the traditional-approach.

Table 2 The Sport Education Model Benchmark Observation Sheet for Planned Materials and Instruction

Season	Management/Organizational phase
	Team Selection phase
	Preseason scrimmage phase
	Regular Season Phase
	End-of-season event
Affiliation	Students involved in the process of team selection
	Persisting teams for duration of unit
Responsibility	Incorporates student duty roles within lessons
	Establishes contract and/or accountability for student performance of roles
	Teacher holds students accountable
	Teacher provides training for referees
	Teacher utilizes tasks to train students on effective verbal communication and feedback
	Teacher provides task sheets for coaches/captains
	Teacher adopts a facilitator approach during interactions with student groups
	Teacher encourages students to resolve conflict within groups
Formal Competition	A formal schedule of competition is established
	Fair play and sportspersonship awards used
Record Keeping	Teacher provides rubric for scorekeepers
	Incorporates peer assessment as part of record keeping process

(Ko, Wallhead & Ward, 2006)

Data Collection and Analysis

Before beginning this study human assurance was granted through the university institutional review board. Furthermore, all students who completed the initial surveys granted their consent before submitting any paperwork. Raw score data from pretest and posttest surveys were entered and checked for accuracy using a third party before completing all calculations. Cronbach alpha (i.e., reliability) and descriptive statistics (i.e., mean and standard deviation) were calculated on pre and posttest scores on all dependent variables by treatment group. Reliability scores were deemed acceptable at or above the .70 level (Nunnally, 1978).

Changes in Enjoyment and Psychological Needs

The primary research question examined whether students in classes using the *SEM* would report greater increase in enjoyment, autonomy, competence and relatedness than students in classes using the traditional-approach. Four separate repeated-measures ANOVAs for each dependent variable (i.e., enjoyment, autonomy, competence and relatedness) were calculated. A Bonferroni calculation was conducted ($p \leq .0125$) due to the use of multiple ANOVA calculations. The focus of these ANOVA calculations was a significant main (Time) or interaction (Time X Treatment) effect. Due to the large sample and class size, a Levene test for equality of variance was calculated for all dependent variables to ensure homogeneity.

Results

Descriptive statistics (mean and standard deviations) and reliability analysis (Cronbach alpha) for all dependent variables are displayed in Table 3. The high degree of similarity between pretest mean scores for all four dependent variables provides evidence of equality of means. In addition, Levene test for equality of variance demonstrates a lack of significant difference on all four measures, thus supporting the equality of variance between pretest measures (Table 4). Reliability alpha for pretest competence was below the established level (i.e., .68), yet was retained due to the importance within this study.

ANOVA calculations revealed significant main (Time) and interaction (Time X Treatment) effects for enjoyment (Time) $F(1,76)=19.68$, $p \leq .0125$, $\eta^2= .206$, (Time X Treatment) $F(1,76)=12.51$, $p \leq .0125$, $\eta^2= .141$ and relatedness (Time) $F(1,76)=20.41$, $p \leq .0125$ $\eta^2= .212$, (Time X Treatment) $F(1,76)=18.23$, $p \leq .0125$, $\eta^2= .193$ with students engaged in the *SEM* demonstrating higher levels of each measure compared with those in the traditional physical education program. Furthermore, results indicated a lack significance in regards to perceptions of satisfying the need for autonomy (Time) $F(1,76)=3.48$, $p \geq .0125$, $\eta^2= .044$, (Time X Treatment) $F(1,76)=0.06$, $p \geq .0125$, $\eta^2= .001$ and competence (Time) $F(1,76)=1.82$, $p \geq .0125$, $\eta^2= .023$, (Time X Treatment) $F(1,76)=0.64$, $p \geq .0125$, $\eta^2= .008$.

Table 3 Group Pretest and Posttest descriptive statistics and reliability analysis (alpha) for enjoyment, autonomy, competence and relatedness (mean and standard deviations) for sport education and traditional physical education classes

		Sport Education		Traditional		
		M	*SD*	M	*SD*	
		(*N* = 40)		(*N* = 38)		α
Enjoyment	Pre	2.01	.56	1.99	.67	.74
	Post	2.29	.52	2.02	.61	.80
Autonomy	Pre	3.33	.55	3.38	.57	.70
	Post	3.20	.63	3.28	.69	.72
Competence	Pre	2.39	.59	2.39	.71	.68
	Post	2.24	.82	2.34	.68	.70
Relatedness	Pre	3.07	.83	3.28	.97	.88
	Post	3.63	.61	3.30	.91	.85

Table 4 Levene Test for Equality of Variance

	F	df1	df2	Sig.
Enjoyment	1.708	1	76	.195
Autonomy	0.183	1	76	.670
Competence	0.521	1	76	.473
Relatedness	1.227	1	76	.271

Discussion

The primary emphasis of this research was to examine the influence of the *SEM* on affect and needs satisfaction of amotivated students. Results indicated that amotivated students in the *SEM* perceived significantly higher levels of enjoyment and satisfaction of the need for relatedness than students taught by the traditional-approach. While there was no difference in the need for autonomy and competence.

Influence of the *SEM* brought about positive psychological change (i.e., enjoyment and relatedness) for amotivated students within a sport-based physical education class. This supports and extends previous psychological studies which identify the positive student benefits when exposed to the *SEM* (Wallhead & Ntoumanis, 2004; Sinelnikov et al., 2007). In addition, these findings support Wallhead and Ntoumanis (2004), and Alexander, Taggart and Medland (1993) who found that students perceive an increased level of enjoyment when engaged in the *SEM*. Facilitation of enjoyment within the *SEM* has been attributed to opportunities provided students to be more involved in their educational experience, such as peer leadership within teams (Grant, 1992; Carlson & Hastie, 1997). Moreover, changes in students' perceptions of enjoyment can be influenced by attainment of one or

a combination of the three psycho-social needs (Deci & Ryan, 1985). As a result, findings within this study indicate that amotivated students perceived a significant increase in the need for relatedness. Although beyond the intent of this study an inference could be made that changes in relatedness support may have facilitated student's change in perceived enjoyment within physical education. Changes in perceived relatedness are consistent with previous studies where students feel an increased sense of belonging, and team investment (MacPhail et al., 2004).

The lack of change in terms of competence and autonomy is interesting due to the dearth of literature that identifies the *SEM* as supporting autonomy and competence (Siedentop, 1994; Wallhead & Ntoumanis, 2004; Sinelnikov et al., 2007). Sinelnikov et al. (2007) attributed students' high levels of situational motivation to the autonomy-supportive environment inherent within the features of the *SEM*. In addition, students perceive an enhanced level of autonomy through an increased level of student-centered responsibility (Carlson, 1995; Carlson & Hastie, 1997). The lack of autonomy reported by amotivated students may have been influenced by the limited access of control and choice. For instance, the team picked a student leader, such as captain, and amotivated students may not have willingly taken on a leadership or engaging role.

Findings associated with the insignificant change in perceptions of competence are inconsistent with the *SEM* goal of developing a "competent sportsperson" (Siedentop, 1994, pg. 4). A "competent sportsperson" focuses on the development of skills, beyond effective game play, to continue participation in activity. Amotivated students may not have felt supported in their ability to be competent within the physical education setting, due to continued focus on effective game play and not social aspects such as being a quality teammate who played fairly.

The results of this study indicate that engagement within the *SEM* can contribute to the psychological development of amotivated students to enjoy physical education. The *SEM* is a robust model which allows teachers to adjust and/or prioritize certain features based on the need of their students. As such, amotivated students seemed to enjoy the peer connections and belongingness while engaged in the *SEM*.

Conclusion

These findings suggest that it is possible to influence amotivated students' enjoyment within the *SEM*. Engagement within the *SEM* facilitated change in the perceptions of enjoyment and relatedness satisfaction. Results lend support that amotivated students perceived the *SEM* as inclusive beyond previously experienced sport-based physical education classes. As such, the feeling of inclusion from their peers provided positive influence on their enjoyment within a sport-based physical education class. Teachers using the *SEM* may focus on inclusive features (e.g., affiliation) of the *SEM* as a means for supporting the psycho-social need of student's with low levels of motivation and in turn facilitate positive change in perceptions of enjoyment. Although the *SEM* assisted in facilitating change in affect and need satisfaction for amotivated students' engaged in this physical education class, this study illustrates the need for further examination of the *SEM* using SDT. Previous *SEM* studies identify support for all three psycho-social needs, yet evaluation of specific student populations, as well as relationships with different student outcomes (e.g., actual competence) and their need satisfaction is limited. Satisfaction of each

psychological need is a critical mediator for a variety of positive consequences within physical education (Vallerand, 2001). As such, SDT provides a robust model of motivation by which to examine the *SEM*. This research suggests that further examination of the *SEM* using SDT, using both qualitative and quantitative measures is critical to allow students the opportunities to learn in a positive social context. It should be noted, that the use of multiple classes could be viewed as a limitation of this study as the variability between each classroom context (e.g., overall class motivation level) may have influenced the perceived support of each psycho-social need and overall enjoyment of amotivated students.

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