

# Influence of Sport Education on Group Cohesion in University Physical Education

Jayne M. Jenkins<sup>1</sup> and Brandon L. Alderman<sup>2</sup>

<sup>1</sup>University of Wyoming, <sup>2</sup>Rutgers University

The Sport Education (*SE*) curricular model incorporated within university physical education Basic Instruction Program (BIP) may increase group cohesion. This study's purpose was to identify student perceptions of a BIP course taught within *SE*, and investigate group cohesion in differing activity content. Participants included 430 students enrolled in 25 BIP classes delivered in *SE*. A mixed method design included multiple data collection: critical incident, interview, and Physical Activity Group Environmental Questionnaire (PAGEQ). Lifetime skill and competitive sport class participants reflected more group cohesion than exercise class participants. Exercise class participants reported lower task cohesion than other groups,  $p < .05$ . Sport participants reported higher social cohesion than lifetime skill participants, whose responses were higher than exercise participants,  $ps < .05$ . Findings from critical incident and interview data provided further support for the PAGEQ results. We suggest that exercise classes may not spontaneously lend themselves to cohesion; thus, teachers need to be more creative in designing *SE* for exercise classes to increase cohesion.

**Keywords:** sport education, basic instructional program, physical activity, curricular design

Sedentary behaviors, associated with increased risk for many chronic diseases, are the norm for a majority of United States (U.S.) adults. U.S. citizens reflect a relationship between advanced age and lowered physical activity levels. A steep decrease in moderate-to-vigorous physical activity occurs across adolescence (Nader, Bradley, Houts, McRitchie, & O'Brien, 2008), and activity declines profoundly during late adolescence and early adulthood (Malina, 2001). Only 40–45% of university-age Americans engage in regular physical activity, and 15–20% of students are sedentary. Upon adulthood more than 60% do not engage in regular physical activity, and 25% do not engage in any physical activity (CDC-P, 2006; USDHHS, 1996).

Attempting to reverse the trend of lowered adulthood physical activity, 60% of colleges and universities nation-wide offer physical education (PE) coursework in the format of Basic Instruction Program (BIP) designed to teach the value of

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Jenkins is with the University of Wyoming—Kinesiology, Laramie, WY. Alderman is with Rutgers University—Kinesiology, New Brunswick, NJ.

physical activity and improve health-related fitness knowledge (Hensley, 2000). Outcomes of combined lecture and activity BIP classes include increased physical activity level and skill and enhanced student's health-related knowledge. Twenty-five years of research has investigated university student's knowledge, behaviors, and attitudes in relationship to BIP enrollment. BIP contributes to enhanced student's health-related knowledge and behaviors, increased activity participation, a boost in fitness level, and a positive attitude toward physical activity (Adams & Brynteson, 1995; Adams, Graves, & Adams, 2006; Brynteson & Adams, 1993; Jorgenson, George, Blakemore, & Chamberlain, 2001; Roberts, Evans, & Ormond, 2006; Slava, Laurie, & Corbin, 1984; Welle & Kittleson, 1994).

University students had similar physical activity engagement patterns from their senior year in university to postgraduation. Six years postgraduation exercisers were still exercising, and nonexercisers were still not exercising (Sparling & Snow, 2002). University education needs to take advantage of this final opportunity to positively impact student's knowledge, skills, and activity patterns (Sparling, 2003). Students must value physical activity to continue a lifelong pattern of activity. To help students value activity, BIP programs must provide meaningful content and activities to connect the content to their lives (Silverman & Ennis, 2003). It is, therefore, important that BIP programs be investigated to identify what is important and meaningful to students.

A primary BIP goal is to provide knowledge and skills necessary to be successful movers to ultimately engage in lifelong activity. To achieve this goal, students must value activity. BIP curriculum must present meaningful, motivating, important, and relevant content and activities that will supply the impetus for students to value activity and provide the basis for leading an active life (Lund & Tannehill, 2010).

An aspect of university-based BIP classes that appears promising in increasing positive attitudes toward activity and future participation is group cohesion. Group cohesion in sport and exercise settings has been defined as "a dynamic process which is reflected in the tendency of a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs" (Carron, 1982; Estabrooks & Carron, 2000). Using this definition, cohesion has been conceptually separated into task and social components to account for the task- versus social-oriented concerns of groups and their members. Spink and Carron (1992) examined the relationship between group cohesion and adherence in university-based exercise classes and found that female exercise participants reporting greater task and social cohesion attended more fitness classes than those who reported lower cohesion. Further, using instructors trained in providing a team-building intervention in exercise classes, Spink and Carron (1993) found significantly fewer drop-outs and late arrivals among participants in the team building classes relative to classes taught by instructors not trained in team building. More recently, Estabrooks and Carron (1999) reported an increase in cohesion and exercise participation following a team-building intervention among older adults. Given the importance of group cohesion in exercise participation, it is important to determine whether a PE curricular model that focuses on team affiliation (i.e., Sport Education [SE]) could enhance perceptions of group cohesion among BIP students.

Lund and Tannehill (2010) proffer strategy for designing a standards-based curriculum based on curricular goals and themes that assure students engage in personally significant and worthwhile experiences. Issues and factors of designing

curriculum include societal needs, interests and mobility, activity availability and choice in the community and school, time constraints, and primary stakeholder (i.e., students, teachers) input. They do not suggest curricular decisions be based exclusively on student wishes, but stress importance of listening to students to identify what is most meaningful and worthwhile.

University students view PE programs positively when teachers are encouraging and motivating, provide effective demonstrations, include supplemental instruction and appropriate challenge, grade fairly, and ensure student safety. In contrast, PE programs are viewed negatively when teachers use public embarrassment or engage in adversarial relationships. Students want PE curricula to provide experiences to overcome fear and gain competence through appropriate challenge, and present relevant content via personally meaningful activities and assignments. Social interaction provides opportunities to meet people in a positive activity resulting in support, encouragement, and acceptance from classmates (Coelho, 2000; Jenkins, Jenkins, Collums, & Werhonig, 2006).

Some PE curricular models focus on social interaction. For example, Adventure or Outdoor Education and Personal and Social Responsibility are grounded in value orientations of social reconstruction, ecological integration, or self-actualization. Sources include the society and the individual. In its early conceptualization, Jewett, Bain, and Ennis (1995) placed the *SE* curricular model within the value orientation of Disciplinary Mastery. That is, the source of curriculum is the subject and sport is the subject-matter content of PE. A primary goal of *SE* is that students become competent performers, and focus of the model is to improve student's motor skills, playing ability, and knowledge of game rules (Siedentop, 1994). Although anecdotal evidence supports that student skill levels increase in *SE* and students perceive that their skills improve in *SE* (Alexander, Taggart, & Thorpe, 1996; Carlson, 1995; Carlson & Hastie, 1997; Grant, 1992; Hastie & Buchanan, 2000; Pope & Grant, 1996), limited empirical evidence supports that student's motor skills actually improve within *SE*. (For a thorough review of *SE* research see Wallhead and O'Sullivan, 2005).

Interestingly, much *SE* research conducted across the past two decades focused not on motor skill development (i.e., subject), but on aspects of social interaction (i.e., individual or society). A primary feature of *SE* is to develop affiliation by being a member of a team or group working together to meet goals (Siedentop, Hastie, & van der Mars, 2004). Affiliation can be gained in *SE* by organizing persistent groups, or teams, across an extended number of lessons. Persistent groups are attractive to students, allow students to develop teamwork and cooperation, afford opportunities for students to develop social skills, benefit marginalized and low skilled students by providing a sense of belonging and trust, and promote team affiliation (Alexander & Luckman, 2001; Bennet & Hastie, 1997; Carlson, 1995; Carlson & Hastie, 1997; Ennis, 1996; Grant, 1992; Grant, Tredinnick, & Hodge, 1992; Graves & Townsend, 2000; Hastie, 1998; MacPhail, Kirk, & Kinchin, 2004).

Team sports are the activities primarily selected for implementation of the *SE* model, although other activities (e.g., aquatics, gymnastics) could also be taught within the *SE* framework (Jewett et al., 1995). Most research conducted and examples provided in *SE*, engage competitive team sports (e.g., soccer, volleyball) as opposed to exercise activities, individual sports, or lifetime skills (e.g., fitness,

dance). *SE* research conducted at the university level has been limited to softball (Bennett & Hastie, 1997) and gymnastics (Jenkins, 2004). Although there is a dearth of research on *SE* in BIP, university students identified that team affiliation is the most attractive component (Bennett & Hastie, 1997; Jenkins, 2004).

Identifying if BIP programs framed within *SE* increase group cohesion may further our understanding of how such programs may contribute to university students' exercise behaviors. In addition, the type of activity content (i.e., exercise, competitive sport, lifetime skill) engaged in using *SE* could impact student perceptions of the course in regard to team affiliation and social environment. Therefore, the purpose of this study was twofold: (a) to identify components of a BIP course taught within the *SE* framework incorporating various content (i.e., exercise, competitive sport, lifetime skill) that contributed to positive and negative student perceptions, and (b) to investigate group cohesion in relationship to content (i.e., exercise, competitive sport, lifetime skill) taught in the *SE* curricular model.

## Method

This study was patterned after the Coelho (2000) study that investigated, through critical incident and interview, student perceptions of a mandatory PE program in a military academy. In the current study, critical incident prompts were adapted from a preliminary study (Jenkins et al., 2006), and was extended to include the Physical Activity Group Environment Questionnaire (PAGEQ) to assess group cohesion. This mixed-method design was selected in an attempt to best capture student responses (Johnson & Onwuegbuzie, 2004).

### Participants and Setting

The setting was a midsize university in the Rocky Mountain West, comprised primarily of middle class Caucasian students. Data were collected across two semesters from undergraduate students enrolled in required physical activity classes ( $n = 25$ ). In all 60 physical activity classes were offered across those two semesters; however, the 25 classes involved in the study were taught by preservice teachers (PTs) as part of their practicum teaching experience and selected specifically for this purpose by physical education teacher education (PETE) professors. A variety of content offered in the 60 classes (e.g., team sports, fitness, outdoor activity) allowed student choice. A total of 430 students (237 male, 193 female), out of 560 (77%) enrolled in the 25 classes, between the ages of 17 and 58 ( $M = 21.01$ ,  $SD = 3.37$ ), volunteered to participate.

Each physical activity class met once per week (i.e., 13 lessons) for 50 min across the semester. Participants were enrolled in a concomitant required lecture class that also met once per week for 50 min and was taught by graduate students as a component of their graduate assistantship. The mountain biking class was a scheduling exception, in that it met for two hours per lesson for the first half of the semester to allow participants to ride in noninclement weather.

The PE profession has not arrived at consensus on essential content (Collier, 2006) or categorization of activities such as fitness, exercise, individual/dual, lifetime, rhythm/dance, team sports, or outdoor adventure. For example, badminton is categorized as both individual and dual or a racket sport while mountain bicycling

is categorized as outdoor recreation, lifetime, or fitness (Corbin, Welk, Corbin, & Welk, 2009; Hastie, 2003; Wyoming Department of Education, 2008). For the purposes of this study the course content offerings were categorized as exercise, competitive sport, and lifetime skill. Physical activity classes included: exercise (e.g., cardiovascular conditioning, circuit training, walk/jog), competitive sport (e.g., volleyball, badminton, basketball), and lifetime skill (e.g., swim/hydro-aerobics, ballroom dance, mountain biking). Similarity of competitive sports is that within the parent game a score is kept and it is by nature competitive. Similarity of lifetime skills is that specific movement skills are taught (e.g., dance steps). Focus of exercise class was target heart rate. This method of categorization allowed us to contrast more traditional competitive individual/dual/team sports, activities studied previously, with less studied activities (e.g., fitness, dance).

PTs assigned to teach the activity classes were enrolled in their third semester of teaching practicum experience, the semester before student teaching. Two PETE professors designed course syllabi and assignments for these classes, approved course content, and supervised all teaching experiences. PTs designed and submitted content specific unit plans and weekly lesson plans. PTs incorporated *SE* components (Siedentop, 1994) to facilitate enhanced group cohesion. Assessment included the major features of *SE*: (a) unit planned in “season” phases to include organizational, team selection, preseason scrimmage, regular season, end of season event, (b) “affiliation” promoted through persistent teams and student involvement in team selection, (c) students take “responsibility” through duty roles, accountability, referee training, communication and feedback training, coaching task sheets, teachers as facilitator, and team conflict resolution, (d) “formal” competition includes formal schedule and fair play awards, and (e) “record keeping” is guided by rubrics and includes peer assessment.

## Data Collection and Analysis

Three types of data were collected during the final class meeting of the semester: PAGEQ responses, critical incident, and interview. The PAGEQ was used to examine select aspects of group cohesion. Critical incident and interview provided participants opportunity to identify salient course components. After signing University Institutional Review Board informed consent, participants had ample class time to complete PAGEQ and critical incident immediately followed by private interviews.

**Group Cohesion.** The 21-item Physical Activity Group Environment Questionnaire (PAGEQ) was used to investigate group cohesion in relationship to BIP course content. The PAGEQ is an instrument based on a conceptual model that portrays cohesion as a multidimensional construct consisting of four dimensions:

- (1) Individual Attractions to the Group—Task (ATG-Task): individuals’ perceptions of their personal involvement with the group task;
- (2) Individual Attractions to the Group—Social (AGT-Social): individual’s perceptions of his or her personal acceptance and social interaction with the group;
- (3) Group Integration—Task (GI-Task): individual’s perceptions of the similarity, closeness, and bonding that exists within the group as a totality around its collective task;

- (4) Group Integration—Social (GI-Social): individual's perceptions of the similarity, closeness, and bonding that exists within the group as a totality around social concerns (Carron, 1982).

Items were scored on a 9-point Likert-type scale with endpoints (1) *strongly disagree* and (9) *strongly agree*. Items representing each dimension of cohesion were summed and divided by the total number of items to produce an average dimensional scale score. The PAGEQ has been used in previous studies examining group cohesion and exercise behaviors (e.g., Carron, 1982; Estabrooks & Carron, 2000) and has shown adequate internal consistency and reliability (Courneya & McAuley, 1995). To check for internal consistency, Cronbach alpha values were computed for each of the subscales of the PAGEQ. The Cronbach's alpha values for the four dimensions of cohesion were found to be .84, .72, .73, and .79 for ATG-Task, ATG-Social, GI-Task, and GI-Social, respectively. To determine differences in task or social cohesion by class content, a one-way analysis of variance (ANOVA) procedure was conducted for each subscale of the PAGEQ. Significant *F* tests were followed by pairwise comparisons using Tukey's HSD. A critical alpha level of  $p < .05$  was adopted for all significant tests. In addition, effect sizes (*ES*) were calculated for any significant pairwise comparisons by using Hedges' *g* statistic (Hedges, 1981), which involves subtracting the means of the two groups and dividing the mean difference by the pooled standard deviation.

**Critical Incident.** Critical incidents were examined to identify BIP components that contributed to positive and negative student perceptions. Preliminary study prompts, adapted from the Coelho (2000) study, stated: "Describe one or more specific incident(s) that you have experienced in the physical activity class that you believe has had a positive influence on you, your education, or future career;" and "Describe one or more specific incidents(s) that you have experienced in the physical activity class that you believe has had a negative influence on you, your education, or future career." The researchers, based on a preliminary study (Jenkins et al., 2006), concluded those prompts were too general for a one-semester course; therefore, for the current study the prompts became: "Describe one or more specific incidents(s) that you have experienced in this class that you believe has had a positive influence on you or your future engagement in physical activity." The second prompt substituted "negative" for "positive."

**Interview.** Interviews further probed critical incident responses. Immediately after completing the critical incident and PAGEQ, two randomly selected students from each class engaged in an audio-taped interview. Critical incident responses guided the interview. The interviewer read the participant's responses out loud and prompted, "Tell me more about that." After more thorough discussion of those responses, the participant was asked to proffer additional comments.

All critical incidents and interviews were transcribed verbatim. Qualitative data were analyzed using constant comparison (Lincoln & Guba, 1985). The categories (i.e., curriculum, teacher, social environment) identified in the preliminary study guided open coding by three researchers who independently read and coded the critical incident and interview transcriptions. Following initial reading 68% inter-coder agreement was reached. Researchers further defined categories and discussed responses until 100% agreement was reached.



Trustworthiness was attained through credibility and confirmability (Lincoln & Guba, 1985). Credibility was attained by means of triangulation as multiple investigators analyzed the written data, consistently searching for negative cases. Establishment of an audit trail attained confirmability. All data and analytical matrices were tabbed and kept in a notebook.

## Results

PAGEQ was completed by 430 participants in three categories of physical activity classes: exercise ( $n = 194$ ), lifetime skill ( $n = 101$ ), and competitive sport ( $n = 135$ ). PAGEQ results by *SE* course content (i.e., exercise, competitive sport, lifetime skills) are found in Table 1. Participant quotes, highlighting student voice, were gleaned from critical incident responses and interviews.

Of the 430 participants, only one did not complete a critical incident. Two students from each class, 50 total, engaged in individual interviews. The 429 responders provided 1,051 critical incident responses. Of those, 599 were positive, 324 were negative, and 128 revealed that s/he had nothing negative to say about the class. Responses reflecting more than one category, fewer than five, were unpacked and placed in appropriate multiple categories. Table 2 reveals positive and negative response frequencies in each of the three themes of curriculum, teacher, and social environment. Results will be presented separately for task and social cohesion followed by critical incident and interview responses that are closely tied to the separate aspects of cohesion.

**Table 1    PAGEQ Responses ( $M \pm SD$ ) by Course Content**

Variable	SE Course Content		
	Exercise	Competitive Sport	Lifetime Skill
Individual attractions to the group-task (IAG-T)	6.74 $\pm$ 1.4	6.44 $\pm$ 1.3	6.82 $\pm$ 1.3
Individual attractions to the group-social (IAG-S)	5.16 $\pm$ 1.5	5.58 $\pm$ 1.4 <sup>a</sup>	6.19 $\pm$ 1.5 <sup>b</sup>
Group integration-task (GI-T)	5.80 $\pm$ 1.3 <sup>a</sup>	6.32 $\pm$ 1.1	6.37 $\pm$ 1.1
Group integration-social (GI-S)	5.16 $\pm$ 1.5	5.62 $\pm$ 1.4 <sup>a</sup>	6.11 $\pm$ 1.3 <sup>b</sup>

*Note.* In each row of means, values not sharing a common superscript differ by  $p < .05$ .

**Table 2    Frequency of Key Components by Theme—All Groups**

Positive Perceptions Related to:			Negative Perceptions Related to:		
Category	Frequency	%	Category	Frequency	%
Curriculum	370	61.8	Curriculum	191	58.9
Teacher	160	26.9	Teacher	111	34.9
Social Environment	68	11.4	Social Environment	20	6.2
Total	598	100		322	100

## Task Cohesion

Task cohesion relates to the general orientation toward achieving a group's goals and objectives and is assessed through the IAG-T and GI-T subscales of the PAGEQ. Activity-related considerations of task cohesion include the amount, type, and intensity of physical activity offered, opportunities to improve fitness, and engagement in new exercises. No significant differences in IAG-T scores were found between the different classes,  $F(2,424) = 2.85$ ,  $p < .05$ , see Table 1. Significant differences were, however, found in GI-T scores between the different classes,  $F(2,424) = 10.13$ ,  $p < .001$ . GI-T relates to one's perceptions of closeness and bonding within the group around the collective task. Exercise classes reported significantly lower GI-T scores than either competitive sport ( $ES=.43$ ) or lifetime skills classes ( $ES=.46$ ), which did not significantly differ from one another. Critical incident and interview responses connected to task cohesion revolved around Curriculum issues (see Table 2). Curricular issues participants reported as primarily important related to in and out of class task engagement and included relevant content, variety of activities, personalized assignments, and exercise opportunities (see Table 3). Although students enrolled in exercise (45%) and lifetime skill (23.5%) comprised 68.5% of total participants, these two groups provided 80% of the total positive and 78% of the total negative comments concerning curriculum. In contrast, students enrolled in competitive sport comprised 31.5% of participants but provided only 20% and 22% respectively of the positive and negative comments concerning curriculum.

In regard to content, participants viewed positively relevant content learned in class, such as specific dance steps, bicycle maintenance, or proper use of exercise machines as identified by this 20 year old woman.

Learning how to use the exercise machines as well as the weight machines has been very beneficial. This allows students to widen their exercises and gives them a variety of workouts they can do. Before we used the weight machines in this class I wouldn't go on them. But now that I know how, I use them all the time.

Although competitive sport participants seldom mentioned in-class activities, exercise and lifetime skills participants frequently discussed the importance of having a variety of activities as reflected by this 22 year old male mountain biker.

The variety of activities has made a positive impact on me. I enrolled in this class to learn mtn. [mountain] biking techniques and after 7 weeks I feel I got my money's worth. I enjoyed the poker ride, the scavenger hunt, the trip to Happy Jack, etc.

When reporting negative perceptions, exercise participants identified if they thought a specific activity should be included or excluded. For example, a 20 year old female walker/jogger reflected, "... in this class I am not getting a well enough warm-up and cool down. I would like to stretch at the end of class as a group for a longer period of time."

Several common assignments such as completing a Wellness Screening (e.g., HR, blood pressure, BMI) and Testwell Inventory (i.e., survey of wellness habits), completion of a weekly physical activity log, fitness testing, and goal setting, were required in all 25 classes. Exercise participants in particular appreciated assignments that identified personal health and wellness information as mentioned by this 26



**Table 3    Frequency of Perceptions by Theme and Group**

	<b>Exercise</b>	<b>Skill</b>	<b>Sport</b>	<b>Total</b>
	<i>n</i> = 193	<i>n</i> = 101	<i>n</i> = 135	<i>N</i> = 429
Curriculum Positive				
Relevant Content	61	44	21	126
Variety of Activities	63	19	1	83
Personalized Assignment	53	9	13	75
Exercise Opportunity	20	8	18	46
Fun/Enjoy	3	10	6	19
Competition	0	2	10	12
Program Features	3	0	5	8
Other	0	0	1	1
Total	203	92	75	370
Curriculum Negative				
Limited Activities	53	7	8	68
Environmental Concerns	32	12	18	62
Meaningless Assignments	12	6	8	26
Irrelevant Content	5	10	1	16
Inappropriate Competition	1	2	5	8
Insufficient Exercise	3	2	1	6
Lack of Fun/Enjoy	1	0	0	1
Other	1	2	1	4
Total	108	41	42	191
Teacher Positive				
Motivational Strategies	28	24	30	82
Effective Instruction	25	22	26	73
Appropriate Challenge	1	3	1	5
Total	54	49	57	160
Teacher Negative				
Inappropriate Instructional Strategies	12	19	37	68
Safety	13	14	4	31
Inappropriate Challenge	9	1	2	12
Total	34	34	43	111
Social Environment Positive				
Team/Group Membership	7	13	30	50
Meet New People	6	6	4	16
Other	0	0	2	2
Total	13	19	36	68
Social Environment Negative				
Limitations of Team/Group Member- ship	1	6	10	17
Unable to Meet People	0	2	0	2
Other	0	1	0	1
Total	1	9	10	20

year old male in a walk/jog class. “The wellness survey was very helpful in seeing where I am physically and how I stack up to people my age. Sometimes we don’t know where we stand in the overall scheme of fitness.”

Participants, more so for exercise and competitive sport over lifetime skill, appreciated that the class provided exercise opportunity. Several participants mentioned that the class precipitated starting, or resuming, an exercise program or joining a sport club as mentioned by this 21 year old female badminton player, “I started going to badminton club because of this class, and I fully expect to continue playing badminton.”

## Social Cohesion

Social cohesion generally refers to individual’s orientation toward developing and maintaining social relationships within the group and is assessed through the IAG-S and GI-S subscales of the PAGEQ. Activity-related considerations of social cohesion include opportunities to establish relationships and encourage social interaction with other members of the group. ANOVA revealed significant differences in IAG-S scores by class type,  $F(2,424) = 15.04, p < .001$ . Follow-up tests revealed that lifetime skills had significantly higher scores than either competitive sport ( $ES=.42$ ) or exercise ( $ES=.69$ ). Participants in competitive sport also reported significantly higher IAG-S scores than those in exercise ( $ES=.29$ ). Similar to the IAG-S findings, ANOVA revealed significant differences in GI-S scores by class type,  $F(2,424) = 13.65, p < .001$ . GI-S relates to one’s perceptions of similarity, closeness and bonding within the group around social concerns. Follow-up tests revealed that lifetime skills reported significantly higher GI-S scores than either competitive sport or exercise,  $ESs=.36$  and  $.66$ , respectively. Participants in competitive sport reported significantly higher IAG-S scores than exercise,  $ES=.32$ . Considerations connected to GI-S revolve around the group socializing and spending time together both during and outside of exercise time. No critical incident or interview responses identified socializing or spending time with group members either inside or outside of class.

All groups appreciated the teacher’s motivational strategies. Critical incidents and interview responses connected to social environment were the fewest of any reported; however, the group reporting the most socially oriented comments, relatively, was lifetime skill. This 19 year old female hydro-aerobics participant identified that placing students in groups helped her meet people, “When we were first split up into groups I was a little skeptical, but in the end being in a group helped you to meet other students and allowed us to feel comfortable.”

## Discussion

The aim of this study was to identify components of BIP courses taught within the *SE* framework and incorporating various content taught (exercise, lifetime skill, competitive sport) that contributed to positive and negative student perceptions and to examine differences in group cohesion in these different content-based classes. Results showed that lifetime skill classes resulted in greater social cohesion than exercise and competitive sport classes. Further, in line with our predictions about sport-based content within *SE*, courses with competitive sport content resulted in greater social cohesion than purely exercise-based courses. Although no significant differences were found between the various content classes in the IAG-T dimension of cohesion, competitive sport and lifetime skill content classes reported greater GI-T cohesion than the

exercise classes. GI-T refers to individuals' feelings about the closeness and bonding within the group around the group's task or task-related goals. Findings from critical incident and interview data provided further support for the initial PAGEQ results. Although critical incidents of a social nature (i.e., those that might connect to social cohesion) were reported less frequently than others, more emanated from lifetime skill participants relative to those in exercise or competitive sport. Four curricular related themes emerged from the qualitative data that connect to task cohesion: relevant content, activity variety, personalized assignments, and exercise opportunities.

Our study showed that students in BIP classes taught within *SE* report levels of task and social cohesion similar to those of previous studies examining cohesion in exercise classes (Spink & Carron, 1992, 1993, 1994). We also found four curricular-related themes from students' critical incidents and interviews that connected to task cohesion. Students reported that relevant content, activity variety, personalized assignments, and opportunity to be active were all positive influences of the class. *SE* may be an effective PE curricular model implemented in BIP classes to enhance members' feelings of cohesiveness. Previous research has shown modest relationships between perceptions of cohesion in exercise classes and physical activity-related behaviors, cognitions, and affective responses (Burke et al., 2005). Given the decline of physical activity levels among university aged Americans, one effective intervention may be to incorporate curricular models that foster feelings of cohesion in physical activity settings (e.g., *SE*). Future research should examine the effectiveness of *SE* relative to other curricular models at enhancing perceptions of group cohesion among university students.

It is noteworthy that in all four subscales of the PAGEQ, regardless if significant differences emerged, the lifetime skill classes reported higher levels of cohesion than exercise and competitive sport classes. Content in the lifetime skill classes, specifically the dance class, is innately connected to task and social cohesion. To learn partner dances such as ballroom or country swing, students must work in pairs to succeed. The mountain biking class included multiple group activities (e.g., scavenger hunt, trail ride) that depended on the entire team or group to help each other accomplish the task. For example, during the scavenger hunt all riders on a team were required to gather in various locations around town or on campus and immediately validate their arrival with a photo sent to the teacher. Perhaps the students in the exercise classes liked the personalized assignments and information because they saw exercise as an individual experience and could not get beyond this perception. Consistent with previous research examining group cohesion in exercise settings (Burke et al., 2005; Estabrooks, 1999), IAG-T was found to be the most salient dimension of cohesion in all classes. This finding can likely be attributed to the task-oriented nature of exercise classes and that participants are likely interested in both their personal and shared responsibilities toward task accomplishment.

This study's limitation was the lack of prepost data collection. Indeed all groups may have changed either up or down across the semester. An additional limitation was lack of assessment of comparator classes delivered outside of *SE*. One of the studies' primary strengths was the use of mixed research method. A mixed qualitative/quantitative approach was used in this study in an attempt to more fully elucidate students' perceptions of cohesion and positive and negative aspects of their experience in exercise classes taught within a *SE* framework. The multimethod approach proved a fruitful way of assessing the outcome of BIP classes while providing further understanding of unique aspects of the classroom environment that might connect to task and social cohesion. The critical incidents and interview were suitable for

collecting detailed descriptions of student perceptions of the BIP classes and how they may differ by course content. Further, we were able to expose perceptions that were connected to aspects of cohesion based on the PAGEQ item content and existing evidence in the group cohesion literature (Carron, 1982). The mixed method approach allowed us to identify the importance of social cohesion to these students based on PAGEQ. Students reported little on the social aspect of class via critical incident or interview. Indeed, the social aspect may have been important, but the students did not articulate it. Christensen and colleagues (2006) employed a mixed method approach to examine the relationship between cohesion and intention to exercise among 87 participants who took part in a 32-week group exercise program. Semistructured interviews revealed that participants' perceptions of three of the four original dimensions of Carron et al.'s (1998) conception of group cohesion (i.e., IAG-S, GI-S, GI-T) were central to their exercise behavior. Furthermore, higher perceptions of group cohesion were related to future intentions to exercise.

A question that has arisen in this area of research relates to whether individuals in exercise classes view the "class" as a "group" and whether they develop cohesion as conceptualized by Carron et al. (1998) and assessed in the PAGEQ. Burke and colleagues (2005) collected data on 1,700 participants in 130 classes to determine whether perceptions of cohesion in exercise classes demonstrated sufficiently high consensus and between group differences to support a conclusion that they are groups rather than merely an aggregation of individuals in close proximity with a common set of interests. Findings from their study provided statistical evidence that groups of individuals within exercise classes do indeed fit the typology of a group. Although not directly assessed in this study, the findings from the critical incidents and interviews supported the development of task and to a lesser degree social cohesion among students. Various team building strategies have been advanced as possibilities to increase cohesion in exercise settings. Enhancing distinctiveness, individual positions/proximity, group norms, group goal-setting, individual sacrifices, and increased interaction and communication are some of the evidence-based principles adapted from the sport literature that may prove effective at increasing cohesion in exercise classes (Burke, Carron, & Shapcott, 2008). Clearly, however, future research is warranted to determine if the strategies for optimizing group cohesion in competitive sport are effective in settings such as college BIP classes.

## Conclusions and Implications

This study focused on identifying components of a BIP course taught within the *SE* framework incorporating various content (i.e., exercise, competitive sport, lifetime skill) that contributed to positive and negative student perceptions, and also on investigating group cohesion in relationship to that various content taught in the *SE* curricular model.

Based on our findings we offer three conclusions for university BIP course development and delivery actions. First, as designers and constructors of BIP classes we need to purposefully develop and investigate the success, or lack thereof, of various curricular and instructional strategies when incorporating *SE* into exercise (i.e., non-traditional sport) classes or settings. The literature provides numerous examples of and strategies for inclusion of *SE* into PE when the content is traditional competitive sport (e.g., basketball, soccer); however, significantly fewer examples exist for incorporating *SE* with nontraditional activities or content (e.g., exercise, dance). In addition, when

*SE* has been subjected to empirical inquiry, the primary content involved has been traditional competitive team sport. Intuitively team sport lends itself more readily to the components of *SE* (e.g., formal competition, affiliation); however, the model was not designed to eliminate content that is not team sport oriented (Siedentop, 1994; Siedentop, Hastie, & van der Mars, 2004). *SE* descended from the philosophy of play education and was, therefore, designed to include multiple activities. As teachers and researchers we need to continue to experiment with strategies for successful inclusion of *SE* into multiple types of content beyond traditional competitive team sport.

This leads to our second conclusion. Exercise classes may not lend themselves as well to social cohesion as do competitive sport or lifetime skill classes. Exercise classes may be best suited for lifelong physical activity, but not to social cohesion. University students enrolling in a BIP course may select an exercise class specifically because they wish to engage in individual exercise. Students may not desire or expect to be social within an exercise class. Teachers need to be creative with *SE* to include tasks and activities that increase cohesiveness (i.e., affiliation). For example, group/team norms could be enhanced by including more group goal-setting, individual sacrifice, and increasing interaction and communication of group/team members. Lifetime skill class participants in the current study reported high levels of cohesion. As stated previously, this could be due to the nature of the content (i.e., depending on a partner to learn a dance step) or creative inclusion of group tasks (e.g., bicycling scavenger hunt). Teachers need to be creative when constructing group tasks in exercise classes.

These conclusions raise questions of importance of cohesion in university BIP classes. Cohesion correlates with affect (Courneya & McAuley, 1995) which may prove beneficial in exercise settings. However, students enrolled in a BIP course are engaged for only one semester (e.g., 16 weeks). In the current study, this was a mere 13 class meetings. It is questionable if cohesion developed in such a short time translates to activity adherence over time (e.g., four years of undergraduate study). A longitudinal study could identify if cohesion developed in a freshman BIP course contributes to engagement in activity across the undergraduate academic years and if relationships developed in such a course persist over time.

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## APPENDIX A

### Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
PCR2	636	6.00	1.00	7.00	4.2413	1.87653	-.183	-.987
PCR3	636	6.00	1.00	7.00	4.1696	1.88105	-.097	-.981
PCR6	636	6.00	1.00	7.00	4.2468	1.71916	-.198	-.783
PCR7	636	6.00	1.00	7.00	5.0079	1.86512	-.705	-.557
PCR8	636	6.00	1.00	7.00	4.5820	1.73987	-.406	-.653
CCR1	636	4.00	.00	4.00	2.3109	1.25603	-.369	-.848
CCR2	636	4.00	.00	4.00	1.9147	1.26079	.053	-.993
CCR3	636	4.00	.00	4.00	2.0491	1.30865	-.091	-1.066
CCR4	636	4.00	.00	4.00	1.8726	1.33506	.068	-1.139
CCR5	636	4.00	.00	4.00	2.0603	1.34323	-.095	-1.136
CCR6	636	5.00	.00	5.00	1.9842	1.35498	-.070	-1.178
SM1_R	636	6.00	1.00	7.00	4.5566	1.87849	-.350	-.827
SM2	636	6.00	1.00	7.00	4.2124	1.93986	-.182	-1.059
SM3_R	636	6.00	1.00	7.00	4.3526	1.83511	-.274	-.853
SM4	636	6.00	1.00	7.00	4.9744	1.80881	-.702	-.444
SM5_R	636	6.00	1.00	7.00	4.3057	2.11604	-.170	-1.271
AL5	636	6.00	1.00	7.00	4.0971	2.21842	-.107	-1.408
AL6	636	6.00	1.00	7.00	4.4872	1.98276	-.369	-1.011
AL7	636	6.00	1.00	7.00	4.3360	1.98635	-.265	-1.097
AL8_R	636	6.00	1.00	7.00	4.2356	2.10600	-.164	-1.257
INT1_R	636	6.00	1.00	7.00	4.4429	1.99268	-.295	-1.098
INT2_R	636	6.00	1.00	7.00	4.4437	1.89809	-.305	-.961
INT3_R	636	6.00	1.00	7.00	4.0428	1.95051	-.120	-1.071
Valid N (listwise)	636							

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## APPENDIX B

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### Final Items for the Perceived Class Relevance Scale (PCRS)

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*The knowledge and skills I am learning in this PE class...*

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1. Are related to interests I have outside of class.
  2. Are important to me.
  3. Will help me succeed in other areas of my life.
  4. Are not valuable to me.
  5. Can be used in other aspects of my life.
-