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PHYSICAL ACTIVITY

Effect of Situational Interest and Social Support on College Students' Physical Activity Motivation: A Mixed Methods Analysis

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Abstract

Given the low levels of engagement in physical activity among young adults, this mixed methods study was designed to increase our understanding of the factors that influence their participation. Interest motivation theory provided the framework for examining the multidimensionality of situational interest as a component that is predictive of engagement in physical activity. College students enrolled in tennis classes at a large research university were recruited to participate in the research. A survey assessing the sources of situational interest was administered to 82 students, and eight students were interviewed so that we could obtain a deeper understanding of the quantitative results. A stepwise multiple regression model revealed four sources (enjoyment, novelty, exploration, and attention demand) that operated as predictors of total situational interest ($r^2 = .93$). From the interpretive analysis of the interview data, three themes emerged (autonomy, competence, and social support). Given these findings, recommendations for modifying physical activity classes are provided.

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Physical inactivity has been recognized as a significant public health concern. Despite recommendations by the World Health Organization (2017), many young adults remain inactive. For instance, in the United States, nearly half of youth aged 12 to 21 years do not meet the recommended physical activity (PA) levels (Centers for Disease Control and Prevention, 2017). Additionally, the National College Health Assessment survey across 124 higher education institutions indicates that 53.6% of females and 49.6% of males do not meet the guidelines for moderate, vigorous, or combination of both levels of exercise (American College Health Association, 2017). Motivation is a key predictor of an individual's participation in PA (Lewis & Sutton, 2011). Interest theory and self-determination theory (SDT) may help us understand the connection between motivation and PA engagement. In addition to suggesting a link between interest and SDT, this study proposes that the two theories are associated with PA engagement. More specifically, it theorizes that situational interest is a vital motivational component that emerges from person–task interaction and social factors. Even though research has focused on causes associated with person–task interactions (Chen, Darst, & Pangrazi, 1999; Knogler, Harackiewicz, Gegenfurtner, & Lewalter, 2015), interest in investigating social factors as potential sources of situational interest is increasing (Deci, 1992; Ding, Sun, & Chen, 2013). Consequently, the literature review provides a discussion of interest theory, including types and causes of person–task interaction, SDT, and their connection with interest theory.

Interest is a unique motivational and psychological state that results from person–task interaction (Flowerday, Schraw, & Stevens, 2004; Hidi & Renninger, 2006). Theorists have established two types of interest: personal and situational. Personal interest is a preference of one activity over others and is influenced by experience. Further, students carry a cognitive and affective quality to their PA classes (Flowerday et al., 2004). In addition to being internal, personal interest is specific to an individual and difficult to alter (Hidi & Renninger, 2006). Personal interest comprises individual characteristics, including self-efficacy, and thus is less amenable to change.

Situational interest is a context-specific form of interest that emerges from person–activity interaction in a social context (Ding

et al., 2013; Koopman-Boyden & Richardson, 2013; Linnenbrink-Garcia, Patall, & Messersmith, 2013). Even more, situational interest is spontaneous, transitory, and environmentally activated (Hidi & Renninger, 2006). Hence, person–task interactions, as well as social factors, influence situational interest (Greaney et al., 2009). Evidence points to five sources of situational interest related to person–task interaction: novelty, challenge, attention demand, exploration intention, and enjoyment (Sun, Chen, Ennis, Martin, & Shen, 2008). Students are motivated with tasks that are new (novelty), test their competence (challenge), and create fun (enjoyable). Tasks ought to provide students with opportunities to explore new skills (exploration intention) and that require special effort (attention demand). However, the effect of social aspects on motivation is not clear.

To explain the connection between situational interest and social factors, Deci (1992) theorizes a link between interest theory and SDT. SDT emphasizes intrinsic motivation, rather than extrinsic motivation, as a means for increasing students' PA engagement. According to SDT, three nutriments (also called basic psychological needs) are vital for motivation: autonomy, competence, and relatedness (Deci, 1992). Autonomy is one's sense of ownership of feelings and activities and implies that one acts with a sense of choice and volition (Deci & Ryan, 2011). Competence is the feeling of mastery of a task and the ability to develop new tasks (McDavid, McDonough, Blankenship, & LeBreton, 2016). More specifically, competence is the ability to complete a task effectively and meet future challenges related to the task (Deci & Ryan, 2011). Relatedness is the need to feel connected to others through engaging in interactions with others (Deci & Ryan, 2011). In summary, attainment of these basic psychological needs is a motivational factor in a PA setting. However, the connection between basic psychological needs and social factors is not clear.

Social factors refer to the immediate physical and social setting that support basic psychological needs. In a PA setting, social factors that support basic psychological needs include student affiliation to their peers and the pedagogies implemented by the instructor (Greaney et al., 2009). Examples of instructional pedagogies include establishing an interactive class environments, student-centered instruction techniques, technology-aided instruction (e.g., video games), and group activities (Ding et al., 2013; Kim et al., 2015; Linnenbrink-Garcia

et al., 2013; Madonia, Cox, & Zahl, 2014; Melton, Bland, Harris, Kelly, & Chandler, 2015). Interactive class environment entails the use of teaching strategies that provide opportunities for students to interact freely with their peers while performing assigned tasks. Student-centered instruction shifts the focus of instruction from the instructor to the students. Technology-aided instruction entails the use of technology to supplement instruction, for example, use of videos to demonstrate basketball skills.

There is agreement that situational interest is affected by the pedagogical approaches implemented by instructors (Duncan, Duncan, & Strycker, 2005; Durik & Harackiewicz, 2007). A key premise for PA classes in higher education is that programs should plan classes that offer physical activities that are popular for the geographical area and that emphasize social interaction (National Association for Sport and Physical Education, 2017). For example, teaching and coaching techniques that incorporate collaborative activities, such as group work, may trigger situational interest. Ideal group work is the use of small groups that provide students with the opportunity to develop a sense of belonging and autonomy. Situational interest is generated and maintained when instructors implement appropriate pedagogical approaches that reflect their mastery of content knowledge and motivational instructional strategies (Duncan et al., 2005).

Several studies focusing on college students support the effect of situational interest and social factors on PA. For instance, Greaney et al. (2009) revealed the influence of social support on PA engagement. Another study reported that students' PA interest was linked with content area and instructional strategies (Melton, Hansen, & Gross, 2010). In support of interest theory, Gu, Zhang, and Smith (2015) found association between group cohesion, competence, and interest. Recently, a mixed methods study found that students' PA motivation is triggered and maintained with an autonomous learning environment (Tracy, 2016). Rotgans and Schmidt (2011) revealed how students' interest can be predicted from instructors who are friendly, socially and emotionally connected with the students, and skilled in pedagogy. Specifically, the study revealed an association between subject mastery and situational interest. In addition, an association was found between situational interest and course content, class structuring, tasks, and activities (Tin, 2006). A strong connection

exists between teaching pedagogies and situational interest. Several instructional techniques are likely to increase situational interest in the classroom, including the provision of meaningful choices to students, selection of relevant topics, structuring classes to invoke active participation, and provision of relevant background knowledge relevant to the task (Linnenbrink-Garcia et al., 2013).

In summary, the literature suggests that improving pedagogy, including teaching strategies, pedagogical knowledge, and mastery of subject matter is relevant to the enhancement of situational interest. Even though quantitative studies have validated person–task interaction sources of situational interest, the question of how these sources affect interest has yet to be answered from a qualitative perspective. In addition, limited research has combined person–task interaction and social sources of situational interest.

This research wanted to determine factors that are important for identifying pedagogical approaches that motivate students to engage in PA in PA classes conducted in the higher education environment. The following research questions guided the study:

1. To what extent do person–task interaction sources predict situational interest of students enrolled in a PA class?
2. In what ways do sources of situational interest affect students' perceptions of their interest in PA within the context of a PA class?
3. In what ways do social factors influence motivation to engage in physical activity in the context of a PA class?

Method

An explanatory sequential mixed methods design provided the framework for this study. This two-phase design began with the collection of quantitative data, followed by the collection of qualitative data (Creswell, 2015). Mixed methods research entails gathering, integrating, and drawing interpretations based on quantitative and qualitative data so that the research problem can be understood (Collins, Onwuegbuzie, & Jiao, 2007). Qualitative data were collected so that the initial quantitative results could be explained and expanded on. The rationale for using mixed methods in this study was that complementarity could be established and then more complete interpretations obtained (Morgan, 2014). Qualitative methods

are sensitive to contextual factors (Green et al., 2007; Klassen, Creswell, Clark, Smith, & Meissner, 2012), and therefore, combining them with quantitative methods contributes to the current theoretical and practical understanding of college students' PA behaviors.

Participants

This study was designed with a large probabilistic sample for the quantitative component and a small purposive sample for the qualitative component (Clark & Creswell, 2011), which lends itself to justifying interpretative consistency. A parallel sampling strategy was implemented (Collins et al., 2007), meaning that individuals with characteristics like those who participated in the quantitative component (survey), but who did not participate in the survey were selected to participate in the qualitative (interview) component.

The criterion for participant selection in the quantitative component of the study was enrollment in a tennis class at the time of data collection. Students (n = 82) who participated in the quantitative phase of data collection were between 19 and 34 years of age (Mdn = 21), predominantly seniors (seniors, 58.5%; juniors, 18.3%; sophomores, 20.7%; and freshmen, 2.4%), Caucasian (n = 73, 89%), and female (n = 59, 72%). The findings from Phase 1 suggested the need for interviews, which could provide more in-depth understanding of the issues. Participants (n = 8) were selected for participation in the interviews at Phase 2 via a purposive quota sampling strategy. Selection was based on race, year of study, and age, and reflected the demographic characteristics of the survey participants (Table 1).

Setting

This research was conducted with students enrolled in tennis classes at a large research university in the Mid-South region of the United States. This region has some of the highest levels of physical inactivity, with more than 32% of the adult population not engaging in any form of PA (Centers for Disease Control and Prevention, 2017). Additionally, this course was chosen because tennis requires more than one player, which resonates with interest theory, which emphasizes the importance of social support and its influence on situational interest (Linnenbrink-Garcia et al., 2013). Therefore, the selection of the course provided the opportunity for examining the PA interest of college students, a population about which there is

Table 1
Qualitative Phase: Participant Demographics

Identification	Gender	Age	Year of study	Race
R1	Female	22	Senior	Caucasian
R2	Female	19	Sophomore	Caucasian
R3	Male	20	Junior	Black
R4	Female	24	Senior	Black
R5	Male	22	Senior	Black
R6	Female	20	Sophomore	Caucasian
R7	Male	19	Freshman	Caucasian
R8	Male	21	Junior	Black

little information. Tennis is an activity course at this university that draws a large enrollment of male and female college students. There are four sections (average of 21 students/section) taught by two instructors. The class met 3 times/week, each session lasted 1 hr, and classes took place on the university tennis courts. When introducing a new task to the students, instructors began the class by explaining the task, including steps to follow and precautionary measures. Instructors then demonstrated the new task before instructing students to practice the task. Instructors also walked around the court, providing instant feedback to students who were engaged in practicing the skills.

Approval from the university institutional review board was acquired before the study commenced. Consent forms were administered to all potential participants, and those who signed were recruited for participation in the study. The researcher informed participants of the purpose of the study, the handling of the data, reasons for audio recording and confidentiality, but kept them blind of the finer details of the study. Surveys were administered in person in the middle of the semester. The surveys were administered in 2 days to four sections of the tennis course. All the students ($n = 82$) who attended class on those days were given the opportunity to participate in the survey, and all of them agreed to participate. The surveys were administered during the spring semester, whereas the interviews were conducted during the following fall semester.

Measures

Phase 1: Quantitative procedures. A situational interest survey (Chen et al., 1999) was administered in person to 82 participants enrolled in three sections of a PA class, immediately at the end of a class hour. The survey was designed to measure person–task interaction sources of situational interest in a PA setting. The situational interest survey included 24 items on a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). Chen et al. (1999) reported internal validity ranging from α = .78 to .95. Example items included "This activity is new to me," "This activity is difficult to do," and "It is an enjoyable activity to me."

Phase 2: Qualitative procedures. Following the analysis of the survey data, semistructured individual interviews (Table 2) were conducted with the eight selected participants. Prior to the interviews with the selected sample, the interview protocol was piloted and the interview questions refined. During the interviews, students were asked to express their views and experiences related to their interest in PA and the importance of peer support. Each interview session lasted between 10 and 20 min. As recommended, the interviewer gave the participants opportunities to provide their personal perspectives and opinions (Creswell, 2015). The interviews were recorded and transcribed verbatim, and the researcher excluded any personally identifiable information.

Table 2
Qualitative Phase: Interview Questions

1	What are some of the physical activities you like to do during your free time?
2	In general, how have your experiences in tennis class influenced your interest in tennis?
3	What is interesting or disinteresting about tennis?
4	How do your peers affect your participation in tennis?
5	How have peers made tennis more interesting or disinteresting?

Data Analysis

At Phase 1, statistical analyses were conducted in the Statistical Package for the Social Sciences. Descriptive statistics provided information about the demographic characteristics of the sample population. A correlational model was developed and determined the relationship between the predictor variables (sources of situational interest) and the dependent variable, situational interest. The predictor variables were derived from a 24-item scale (Chen et al., 1999), with six subscales (four items each) measuring the five sources of situational interest (attention demand, exploration intention, challenge, novelty, and enjoyment) and overall situational interest. Internal validity, from Cronbach's alpha, for each source was .94, .83, .89, .78, .75, and .44 for overall situational interest, exploration intention, enjoyment, novelty, attention demand, and challenge, respectively (Chen et al., 1999). Cronbach's alpha source scores were .95, .78, .80, .90, .90, and .95 for overall situational interest, exploration intention, enjoyment, novelty, attention demand, and challenge, respectively. Stepwise multiple regression analysis was applied and predicted overall situational interest from the sources of situational interest. A stepwise multiple regression model was developed and tested whether the five hypothesized sources of situational interest were predictors of overall situational interest in a PA setting. An independent-samples *t* test compared potential differences between the situational interest of male and female students.

At Phase 2, an inductive analysis was applied wherein each text was read and reread line by line and codes and meaning were identified. The coding process began by the researcher looking at the first transcript and labeling single words, phrases, and paragraphs that contained significant information related to each idea the participant expressed. The codes were identified based on the research questions (interest and peer support). Codes that shared a relationship were linked and subthemes were created. For instance, "someone to play with" and "sharing equipment" created the subtheme of companionship. The last step involved identifying themes that emerged from the linkage of subthemes and provided an explanation that was reasonable considering the various patterns that emerged at the descriptive level (Clark & Creswell, 2011).

Results

Quantitative Results: Predictors of Situational Interest

Results partially confirmed the hypothesis (sources of situational interest directly relate to overall situational interest) by showing that four sources of situational interest (enjoyment, novelty, exploration intention, and attention demand) were significantly related to overall situational interest. At Step 1 of the analysis, enjoyment was statistically related to overall situational interest, $F(1, 80) = 679.18$, $p < .001$. At Step 2, enjoyment and novelty were statistically related to overall situational interest, $F(2, 79) = 433.38$, $p < .001$. At Step 3, the dependent variables of enjoyment, novelty, and exploration were statistically related to overall situational interest, $F(3, 78) = 307.63$, $p < .001$. At Step 4, enjoyment, novelty, exploration, and attention demand entered the regression equation and were significantly related to overall situational interest, $F(4, 77) = 241.89$, $p < .001$. The multiple correlation coefficient was .92, indicating that enjoyment, novelty, exploration, and attention demand accounted for 92.2% of the variance of overall situational interest. Challenge did not enter the equation at Step 4 of the analysis ($t = .43$, $p > .05$). Probably, the statistically insignificant association between challenge and situational interest was due to the low internal validity ($\alpha = .44$). Table 3 shows the regression analysis results. An independent-samples t test revealed an insignificant difference for gender, $t(80) = .50$, $p = .62$, suggesting that gender has no effect on overall situational interest.

Table 3

Regression Results for Students Enrolled in Physical Activity Classes

	Unstandardized coefficient		Standardized coefficient			95.0% CI for B	
Model	B	*SE*	β	*t*	Sig.	Lower bound	Upper bound
(Constant)	-.292	.152		-1.919	.059	-.594	.011
Enjoyment	.655	.068	.635	9.577	.000	.518	.791
Challenge	.019	.044	.015	.429	.669	-.070	.108
Attention Demand	.124	.060	.102	2.065	.042	.004	.244
Exploration	.143	.060	.136	2.362	.021	.022	.263
Novelty	.173	.054	.158	3.204	.002	.065	.280

Note. $R^2 = .922$. CI = confidence interval.

Qualitative Results: Influence of Social Factors on Personal Interest

The analysis of the interview data revealed three major themes: (a) autonomy, (b) competence, and (c) social support (see Table 4).

Table 4
Qualitative Phase: Emerging Themes

Theme	Subthemes	Example
Autonomy	Free Play in Class	Because you know learning, the technique is never fun. But, actually playing the game is fun. She gives us time to play in the field. I find pleasure playing more and more.
	Informal Play	I feel like playing recreationally on the weekends does help because in the class, you know, ah. . . . the instructor can just focus on you all the time. But if you just play outside class, you try new tricks and improve on your skills…
Competence		I think the feeling after accomplishing a task. Like . . . if you are learning a specific skill like serve or backhand, it . . . feels good to demonstrate it.
Social Support	Instrumental Support	The greatest support is showing up for a game or practice session. Because tennis is not a sport you can play alone. So if you call a tennis match, and you turn up alone, then there is no tennis match. So the social support that comes in is when friends come in together to be able to play the game.
	Emotional Support	For example, when I hit the ball and the other person hits the ball like a rainbow . . . everybody gets excited. Everybody says, oh my gosh! They smash rackets. They say it is so good. You know, things like that.

Autonomy. Subthemes that reflected autonomy included free play and informal play in class. Most of the participants who were interviewed described feelings of motivation when the instructors allowed them free play during class. Several participants believed that playing under the supervision of the instructors denied them the opportunity to have fun. Even though it is expected that instructors will teach and demonstrate new skills, they should also give students time to engage in free play. For instance, R3 said, "We enjoy when we play freely." R1 addressed the concept of informal play, describing how she finds time over the weekend to play with her peers: "I feel like playing recreationally on the weekends does help."

Students noted the significant effect of free play on their PA interest and commented that they enjoyed engaging in free play more than in structured and supervised activity classes. Students expressed the concern that the time they have in class is not adequate for working on their skills. They said that the instructors spent most of the class time on assigned tasks, but provided only minimal time for practicing the learned skills. Engagement in tennis activities outside of class increased students' interest. For instance, R7 said, "We both want to get better. So . . . in class, we get 15 minutes, three times per week to play. So . . . we go to the weekend we get more hours. That's strictly playing and not anything else."

Competence. Students' PA interest stemmed from their perceived competence levels. R8 stated, "I think the feeling after accomplishing a task. Like . . . if you are learning a specific skill like serve or backhand, it really feels good to demonstrate it." To this end, competence implies having the required skills for executing a skill comfortably. When probed about why she likes tennis, R7 said, "It's when you learn, and you feel like you are confident enough. You know the skill and you feel more confident." In this study, participants expressed their competence in terms of improving their skills to the extent that they felt confident executing a task.

Social support. Social support comprises the subthemes of instrumental support and emotional support. Most participants expressed the importance of peer support. Instrumental support denotes tangible help that others can provide such as access to necessary sports equipment, having friends avail themselves for play, and transportation to the activity site (Duncan et al., 2005). They

acknowledged that the nature of tennis requires that individuals have playmates. Playmates do not necessarily have to be classmates. R6 said, "I have friends who are not taking the course, but they come to practice with me." Sometimes schedule conflicts with others made it difficult for participants to get playmates, which negatively affected their interest. The importance of instrumental support was further expressed by R2: "I did not play a lot, because my friends were not interested." Upon probe of why she is not so much engaged in tennis, R1 said, "I would if I had someone to play with."

Forms of emotional support that participants expressed included encouragement and peer approval. All participants voiced the importance of encouragement and when received from peers how it boosted their interest.

> In tennis, I can say my friends . . . those that I play tennis with would be there to encourage me. We would say we are tired, we do not need to go, but because they are there in my house, they would say we need to go to class, we need to go play. (R3)

On further probe, R3 said,

> My peers have played a big role in making me play this game. Even when I feel like I do not want to do anything, they would be there for me. I would also be there for them. Because it is like a team. It is like a clique. We complement and help each other. When one is feeling low, we say no, you are winning this game. Keep going, keep going. At the end of it when one wins or loses, we are still supportive. We encourage each other.

Participants discussed peer approval as another form of emotional support, noting that it facilitated a sense of contentment. Peer approval of one's actions might be expressed verbally and through body language. R5 explained, "You may have three sets to play, and when you reach the second set, pain starts coming and you need some people who can cheer you." Body language that participants frequently mentioned included clapping of hands and players jumping up and smashing rackets in the air.

Findings from this research suggest that the instructor's pedagogical approaches and peer interactions are vital aspects of motivation. For example, R6 said, "It is getting to play together. I enjoy playing, making new friends, and giving others a chance to play a sport. It has been a fantastic opportunity to bring together people from all walks." Generally, the importance of emotional support was expressed more commonly by the female participants.

Discussion

This study revealed three conceptual findings. First, the quantitative findings pointed to the significance of sources of situational interest. Second, the qualitative findings revealed the emergence of autonomy and competence, which support SDT. According to SDT, autonomous motivation is influenced indirectly by learning environments that support attainment of autonomy, competence, and relatedness. Thus, qualitative findings seem to support SDT by highlighting the influence of social support.

First, findings from this study are relevant to the association between sources and overall situational interest. Further, they are consistent with studies that point to five sources of situational interest (Chen et al., 1999; Chen, Darst, & Pangrazi, 2001; Huang & Gao, 2013; Sun et al., 2008). However, regression results from this study showed four sources (enjoyment, novelty, exploration intention, and attention demand) of situational interest.

As evidenced in previous studies (Pasco, Roure, Kermarrec, Pope, & Gao, 2017), the quantitative findings in this study indicate a strong positive correlation between enjoyment and overall situational interest ($r = .94$). This finding suggests that enjoyment is associated with overall situational interest, in addition to mediating the relationship between sources of situational interest and overall situational interest. Therefore, PA instructors should consider strategies that elicit situational interest including designing learning tasks that provide instant enjoyment, are novel (avoid monotony), allow opportunities for students to practice (exploration intention), and capture the cognitive aspects (attention demand) of students. The strong correlation between enjoyment and overall situational interest can be explained further based on responses from the interviews. Having fun has been associated with enjoyment, and this was revealed through the

interviews. Several participants believed that classes that incorporated free play were more enjoyable.

In contrast to previous findings (Chen et al., 1999; Vazou, Ntoumanis, & Duda, 2005), the quantitative results did not establish an association between challenge and overall situational interest. However, this finding aligns with that in other research that did not find an association between challenge and situational interest (Ding et al., 2013). As observed in this population, the level of challenge was not significant. This may indicate a mismatch between task difficulty and the skill status of the participating students and suggests a relationship between perceived levels of competence and task challenge.

Second, the qualitative findings strengthened the quantitative findings by revealing how opportunities that support autonomy and perceived competence influence students' interest. This finding is consistent with results in research that found autonomy to be a predictor of situational interest (Deci & Ryan, 2011). Elements of autonomy that influenced situational interest in this research included free play and informal play. Free play involves students engaging in activities while in class, but without instructor supervision. Informal play occurs outside of the classroom. Many of the participants discussed free play and informal play as important grounds for either developing or losing interest in PA. Students described free play as opportunities to practice their skills within the class time, whereas informal play occurred when students arranged to engage in PA outside of the class environment.

According to researchers, individuals derive autonomous satisfaction when they have a sense of volition and perceive that they are the origin of their behavior (Adie, Duda, & Ntoumanis, 2008). Therefore, to enhance students' sense of autonomy, instructors should consider structuring the learning environment in a way that supports a variety of autonomous actions, for example, student selection of playmates; choice of side of the court on which to play; and alteration of rules, which provides an element of fun for all students (Niemiec & Ryan, 2009; Adie et al., 2008).

Findings from this study support studies (Deci & Ryan, 2011) that associated competence with students' interest in PA. In addition, revelations from the qualitative interviews were consistent

with research that found the influence of competence on interest in PA to be important (Madonia et al., 2014). Researchers have suggested that tasks should be not only challenging for students, but also congruent with students' abilities (Sun et al., 2008). The flow model (Csikszentmihalyi, Abuhamdeh, & Nakamura, 2005) provides a theoretical explanation for the low correlation of challenge with situational interest in this research in that when tasks are either too easy or too difficult, boredom or anxiety may be elicited. During the interviews, several students noted that the tasks required in their tennis classes were too easy. Challenge may trigger situational interest if it is congruent with students' competence. A positive association between novelty and overall situational interest links motivation to new but easy tasks. That is, tasks should not be presented at a novice level only, but the difficulty level (challenge) should be modified so the varying levels of students' competence can be met. Perceived competence encourages students to seek avenues to practice the learned tasks and thus encourages exploration intention.

Finally, findings from the qualitative interviews revealed ways that social support influences students' situational interest. The participants explained how instrumental and emotional support affected their PA interest. Generally, students are motivated by learning environments that support their emotional and instrumental aspects. In other words, situational interest may emerge in a learning environment that encourages connectedness and interactions among students. Research reveals that students strongly value the social support they receive from their peers (Li et al., 2016; Prochaska, Rodgers, & Sallis, 2002). Students valued the emotional support (e.g., encouragement) and instrumental support (e.g., transportation to the activity site).

The importance of social support is congruent with the relatedness component of SDT (Deci, 1992; Deci & Ryan, 2011). This population expressed relatedness in the form of peer approval (Deci & Ryan, 2011). Students become motivated when the learning environment provides opportunities for peer interaction. Instructors can motivate students by establishing interactive and student-centered learning environments (Mikkonen, Ruohoniemi, & Lindblom-Ylänne, 2013; Prochaska et al., 2002; Rotgans & Schmidt, 2011).

In summary, results from this study conform to postulations that supportive social environments enhance self-determined motivation (Deci, 1992; Niemiec & Ryan, 2009). In conclusion, this research revealed ways of increasing interest in PA among college students. Specifically, situational interest is influenced by novelty, exploration intention, attention demand, enjoyment, support for autonomy and competence, and social support.

Theoretical Models

This study was grounded in interest and self-determination theories. The findings support studies reporting associations between sources of situational interest and overall situational interest (Ding et al., 2013; Durick & Harackiewiecz, 2007). With quantitative and qualitative results pointing to connections between sources of situational interest (from interest theory) and the social environment (from SDT), these two theories seems to be connected. In conclusion, the qualitative findings explaining the quantitative outcomes in this study affirm the role of a mixed methods explanatory study design (Creswell, 2015).

Limitations

Despite the findings, this study had limitations. The use of a parallel sample for the qualitative component might have some disadvantages, as the experiences of the participants might not be the same as the experiences of those who responded to the survey. However, the researchers selected a demographically comparable sample for both components and included individuals who had been enrolled in tennis activity classes taught by the same instructors. The activity of focus in this study was tennis, which can be played individually or in pairs, and therefore, the function of teamwork may not be clear in this study. To further this line of research, this study could be replicated with a variety of sports offered in postsecondary PA classes.

Conclusions and Recommendations

Perhaps, most important, this study revealed that interest in PA within a university context can be increased in a learning environment that supports novelty, attention demand, exploration intention, and enjoyment. Along with supporting the well-established sources

of situational interest, this research adds knowledge to the literature with respect to the importance of incorporating social factors as a source of situational interest. These findings suggest that the social environment influences the motivation and engagement of students participating in PA. The need for instructors in postsecondary contexts to create socially supportive environments is a major step toward increasing interest in PA. Socially supportive environments include elements of autonomy, competence, and emotional support.

Instructors can establish an autonomy-supportive environment through strategies such as providing more choices for students to select the tasks they prefer and allowing students to choose their groups. They can enhance students' competence by demonstrating or having a student demonstrate tasks, before asking the rest of the class to engage in the task; using technology to teach a task; allocating more time for students to practice acquired skills; encouraging students to use more effort when executing difficult tasks; and using group work as a tool for improving students' competence. Instructors can provide emotional support to students through physical proximity, social conversation, sensitivity to student needs, encouragement, empathy, and a pleasant demeanor. Finally, to increase PA among young adults, instructors can consider implementing pedagogical strategies that align with interest theory and with a long-term goal of promoting PA for a future healthy lifestyle.

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