
Motivational Effects of Interest on Student Engagement and Learning in Physical Education: A Review

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Abstract

The purpose of this review is to highlight the “power” of interest on student engagement and learning. Specifically, it presents the key role situational interest plays as a motivator in enhancing student engagement in the learning process. Interest-based research in general education and physical education indicate that situational interest has the potential to influence individual interest and predict future intention. Situational interest is the affective reaction triggered by specific or appealing stimuli in the environment. Research indicates that situational interest can be enhanced through the manipulation or the modification of certain aspects of the learning environment and contextual factors such as teaching strategies, task presentation, and structuring of learning experiences. Situational interest, therefore, is a viable medium that can be harnessed by teachers to motivate the unmotivated and disengaged learners to learn.

1 Introduction

Interests and goals have been identified as two important motivational constructs that influence students’ engagement and achievement in learning (Chen, 2001; Chen & Ennis, 2004; Chen & Shen, 2004; Hidi & Harackiewicz, 2000). However, the bulk of research on motivation in physical education pedagogy emanates from achievement goal theories (Chen, 2001). Achievement goals have been reported to have a weak influence in predicting both performance and motivation outcomes. Interest, on the other hand, has been found to play a key role in influencing student learning behaviour and intention to participate in the future (Chen, 2001; Solmon, 1996; Xiang, Chen, & Bruene, 2005).

Educators have long acknowledged the importance of promoting children’s interest since Dewey’s (1913) groundbreaking work on the role of interest in learning. Interest also has been found to play an energizing role on cognitive functioning (Hidi & Anderson, 1992; Hidi & Harackiewicz, 2000; Piaget, 1981). Additionally, Hidi and Renninger (2006) assert that “The level of a person’s interest has repeatedly been found to be a powerful influence on learning” (p.111). The powerful influence of interest on learner motivation is captured by Xiang et al. (2005) when they reported that interest “emerged as the most important intrinsic motivation construct for predicting future intention ...” (p.193). In addition, they also found interest seemed to override the effects of both extrinsic rewards and other intrinsic motivation sources. Taken collectively, the literature on interest-based motivation indicates that interest might have a strong and prolonged effect on learner motivation and in predicting future intention (Alexander, Jetton, & Kulikowich, 1995; Hidi, 2000).

Even though interest has been recognized as an important variable for learning, teachers still do not have a clear understanding of their potential role in helping students develop interest. Teachers also tend to think that students either have or do

not have interest, and may not recognize that they could potentially stimulate and enhance the growth and development of students' academic interest particularly for those students who are unmotivated and disengaged in learning (Ennis, Cothran, & Davidson, 1997; Lipstein & Renninger, 2006). Given this caveat, the purpose of this review is to underscore the "power" of interest in student engagement and learning in physical education.

Interest as a motivational construct

Interest has a cognitive as well as an affective component as a motivational construct (Hidi & Harackiewicz, 2000). It emerges as a result of an individual-environment interaction and has been conceptualized as individual interest and situational interest (Krapp, Hidi, & Renninger, 1992; Mitchell, 1993). Both individual interest and situational interest consist of two phases. For individual interest, these involve an emerging individual interest and a defined individual interest (Renninger, 2000). As for situational interest, these involve a phase in which interest is triggered and a subsequent phase in which interest is maintained (Hidi, 2000; Hidi & Harackiewicz, 2000; Mitchell, 1993).

Individual interest refers to an individual's relatively enduring psychological predisposition (preference) to re-engage in particular classes of objects, events, or ideas over time and is content specific (Hidi & Harackiewicz, 2000; Hidi & Renninger, 2006). In essence, individual interest develops slowly and tends to be long-lasting and is considered to be relatively stable. Furthermore, individual interest develops in combination with an individual's knowledge and values (Hidi & Anderson, 1992; Krapp et al., 1992). Given the above characteristics, individual interest plays a major role in a learner's preference to engage in a task or activity over time and in predicting future motivation (Xiang et al., 2005).

Situational interest, on the other hand, refers to the affective reaction triggered in the moment by stimuli in the environment which may have a short-term effect, and may marginally influence an individual's knowledge and values. Typically, this type of interest is evoked by specific or appealing features in the environment and has the potential to generate a true state of interest (Hidi, 1990; Hidi & Anderson, 1992; Hidi, Renninger, & Krapp, 1992; Krapp et al., 1992; Mitchell, 1993). Both Dewey (1916) and Thorndike (1935) also recognized that individual interest as well as the interestingness of tasks (situational interest) influence learning.

Although individual interest is triggered by an individual's psychological predisposition and situational interest by environmental stimuli, Hidi (1990) points out that individual interest and situational interest are not dichotomous phenomena that occur in isolation. On the contrary, both types of interest tend to interact and influence each others' development. For example, an individual with strong individual interest may react differently than someone without such an interest to potential situations that may trigger interest. On the other hand, situational interest evoked by some environmental stimuli may contribute to the development of long lasting individual interest (Hidi 1990; Hidi & Harackiewicz, 2000).

From an educational perspective, students come into the learning environment with a wide array of individual interests. It would be a mammoth task for teachers to cater to each learner's individual interest given the time constraints and class sizes teachers have to work with. Teachers, therefore, have little control over individual interest and student learning. But what teachers do have control over is the learning environment. Situational interest, therefore, offers an alternative to individualization of interest. Creating a learning environment that evokes or triggers situational interest could play an important role in the development of individual interest. This certainly resonates with Hidi and Anderson's (1992) assertion that situational interest could develop into

individual interest at some later time when individuals have acquired the knowledge and value about a situational interest.

The aforementioned potential of situational interest on the development of future individual interest warrants closer examination in a physical education setting. For example, the creation of an environment that hinges upon the provision of active learning experiences (Mitchell, 1993) in physical activity in a physical education class could potentially trigger interest among students. For some students this interest may disappear at the end of the lesson, while for some others this triggered interest may persist over time and develop into individual interest in physical activity. Mitchell (1993) also asserts that ‘holding interest’ that emerges from the creation of meaningful learning experiences has the capacity to empower individuals. Individuals who are empowered are more likely to continue to engage in the activity after the teaching of the meaningful content. In other words, situational interest can be viewed as a precursor to individual interest in some respect.

2 Determinants of Situational Interest

We know that teachers have very little control over individual interest. What teachers do have control over is situational interest since this type of interest is linked to the learning environment. If teachers understand what stimulates situational interest, then they can play a more active role in the development of students’ academic interest. Situational interest can be enhanced through the modification of certain aspects of the learning environment and contextual factors such as teaching strategies, task presentation, and structuring of learning experiences (Chen, 1996; Chen & Darst, 2001; Chen, Darst, & Pangrazi, 1999; Chen, Darst, & Pangrazi, 2001; Durik & Harackiewicz, 2007; Dyson, 2002; Hidi & Harackiewicz, 2000; Isaac, Sansone, & Smith, 1999; Mitchell, 1993; Shen & Chen, 2007).

Materials presented in a more meaningful context have been found to empower students and enhance situational interest (Chen et al., 1999; Chen et al., 2001; Mitchell, 1993). In addition, students need to be actively engaged in the learning process in order to make meaning of their learning experiences. In physical education, teachers need to think of ways to make the content more meaningful and challenging to students by providing active learning experiences and connecting these experiences to students’ prior knowledge (Chen & Darst, 2001). Another approach could be the use of different teaching strategies to invoke situational interest. Relying to heavily on one teaching approach such as the command style of teaching could be detrimental to the development of situational interest. Research suggests that giving students choices seems to enhance situational interest (Cordova & Lepper, 1996; Iyengar & Lepper, 1999). A teaching strategy in physical education that falls within the realm of giving students choice is the inclusion style of teaching (Mosston & Ashworth, 2002). In this approach, students are allowed choices and make informed decisions in the learning context that has the potential to elicit situational interest.

Another aspect of the learning environment that has been found to contribute to the stimulation of situational interest is the structuring of learning experiences. For example, working in the presence of others has been reported to increase situational interest for some individuals (Isaac et al., 1999). In essence, structuring the learning experience to allow individuals to work in the presence of others can impact the development of situational interest positively. Physical education setting provides an ideal context for social structuring of learning experiences. Utilizing cooperative learning can be a rich medium through which social structuring of learning experiences can be accomplished. Students become more productive and involved as a result of working with peers on learning tasks in this context (Dyson, 2002). Chen et

al. (2001) also found that how physical education teachers structure their learning tasks can influence situational interest and student enjoyment of physical activity. For example, using exploration-oriented learning tasks have been found to enhance students' feeling of instant enjoyment and situational interest in physical education. How teachers create the learning environment will ultimately determine the stimulation of situational interest. An environment that offers students choice, meaningful content, and provides an opportunity to work with others is critical to the enhancement of situational interest. If physical education teachers want to contribute to the development of students' individual interest in physical activity, they ought to pay closer attention to the determinants of situational interest. The elicitation and utilization of situational interest could make a significant contribution to the motivation of unmotivated and disengaged learners in physical education.

3 Research on Situational Interest in Physical Education

Interest-based motivational research in physical education is in its infancy despite the overwhelming evidence that supports the critical role interest plays in enhancing student achievement and motivation. One plausible reason for this hesitancy among researchers to delve into interest-based motivational research could be the overemphasis and overshadowing of goal orientation research in physical education. Chen (1996) can be credited as the pioneer for engaging in this area of research in physical education. Following Chen's work, other researchers have investigated interest in physical education from different perspectives. Although interest-based motivational research is in its early years in physical education, the findings reported thus far have been groundbreaking and informative.

Chen (1996) sought out to investigate student interest in activities in a secondary physical education curriculum and found that interest is dependent upon person-activity match. In other words, physical education teachers need to be more cognizant of this student-activity match when selecting activities. In addition, student perceptions of interest were embedded in the meaning and value the activity offered the learner. In a nutshell, what teachers do in the learning environment can have a profound impact on the development of interest as depicted by the level of engagement in activities in physical education. Similarly, Cury and colleagues (1996) also found the situational class climate to be more important than dispositional goals in influencing learners' interest in physical education. What this means in the overall scheme of student learning is that situational factors do matter in enhancing student interest more than individual goals.

Situational interest has been conceptualized as a multidimensional construct resulting from person-activity interaction. To test the tenability of the multidimensionality of situational interest in physical education, Chen et al. (1999) developed an instrument to measure the seven dimensions of situational interest. Exploratory and confirmatory factor analysis revealed five dimensions of situational interest in physical education: Novelty, Challenge, Exploration Intention, Instant Enjoyment, and Attention Demand. However, Chen et al. found that not all dimensions accounted equally for situational interest. The primary components of situational interest were Exploration Intention and Instant Enjoyment. From an educational perspective, what this means is that in order to increase situational interest physical education teachers should strive to provide ample exploration opportunities during student-task interaction that ultimately results in instant enjoyment for learning. In this sense, situational interest is learning task specific (Chen et al., 1999; Chen et al., 2001). Since Novelty and Challenge contribute minimally to situational interest and instant enjoyment in physical tasks,

Chen et al. (2001) caution that when introducing novel physical activities to students, physical education teachers ought to keep challenge to a minimal level.

Extending their work on situational interest, Chen and Darst (2001) sought to examine the effects of task design on situational interest and the extent to which the effects were mediated by gender, grade, individual interest, and skill levels. An important finding that emerged from this investigation is the role of cognitive demand of a learning task in generating situational interest. Chen and Darst concluded that providing learners with “a learning task that demands relatively high cognitive engagement is likely to be perceived as interesting and enjoyable regardless of the intensity of the physical involvement in the task demands” (p.160). Teaching Games for Understanding (TGfU) or the Tactical Approach provides students with a relatively high cognitive demand in solving tactical problems to game play. Research in this area echoes a similar sentiment (Chow, Davis, Button, Shuttleworth, Renshaw, & Araújo, 2007). Situational interest was also found to be a function of learning task design and it varied across different learning tasks in physical education. Learning task with a high situational interest elicited a higher level of engagement than one with low situational interest (Chen & Darst, 2001). Physical education teachers who wish to see their students engage at a higher level should focus on providing learning tasks with high situational interest. In essence, they need to find ways to increase the interestingness of the learning task to motivate students in the initial process of learning.

Task design certainly plays a major role in impacting situational interest. But what role does gender and skill level play in influencing interest? Chen and Darst (2002) found gender differences in individual and situational interests but they caution that it could be a result of an artefact of the knowledge and skills boys and girls have constructed while learning physical tasks in a stereotypical social environment rather than a biological one. Boys and girls, they contend, can be attracted equally to learning tasks high in situational interest. Individual interest was found to be strongly correlated with skill levels, but individual interest and skill level were not correlated with situational interest. There was, however, an association between high individual interest, high situational interest, and high skill level. The authors found that skill level played a more important role than gender in individual and situational interests in learning motor skills. High situational interest in the learning tasks is more likely to elicit high physical engagement regardless of students’ skill levels (Shen, Chen, & Guan, 2006). Physical education teachers, therefore, need to design learning tasks that are situationally interesting to motivate both high skilled and low skilled students to be more actively engaged in the learning process.

Predicting learning in physical education has also been investigated using an achievement goal and interest framework. Achievement goals and interest have been found to play independent roles in motivating middle school students in physical education. Mastery goal seemed to have a strong influence on the recognition of situational interest. Students with high mastery goals are more likely to be able to recognize situational interest in a learning task as opposed to students with low mastery goals (Shen et al., 2006). This mastery goal-situational interest relationship can be harnessed by teachers to enhance student interest in learning tasks in physical education. Thus, creating a mastery learning climate can certainly assist in fostering this mastery goal-situational interest relationship. However, Chen and Shen (2004) found that students participating in organized outside-school physical activities had a stronger ego-goal orientation. Teachers, therefore, need to be cognizant when structuring their learning climate to increase situational interest. It has been well documented that situational interest elicits active engagement in the learning process.

By increasing the interestingness of the learning task, even students with different individual dispositions are more likely to exhibit interest and be actively engaged. The power of situational interest in enhancing student engagement and learning should not be underestimated.

Learning and interest in physical education also have been investigated using the Model of Domain Learning (MDL). According to this model, learning occurs in three stages: acclimation, competency, and proficiency (Alexander et al., 1995). It has been reported that situational interest functions as the primary motivator in bringing out learners' continuous effort in the acclimation stage since learners have limited prior knowledge and rarely have strong individual interest in the knowledge domain. In the competency stage, learners begin to master knowledge and situational interest may be internalized as individual interest. Individual interest becomes the sole motivator in the proficiency stage as learners become knowledgeable in the subject and proficient in using learning strategies. Shen and Chen (2006) hypothesized that situational interest will contribute to the development of individual interest using MDL. Interestingly, the authors found that learners' individual interest change was influenced by situational interest, thus giving credence to their original hypothesis. In addition, Shen and Chen also found that situational interest influences learning strategies, and this association is independent of prior individual interest. Situational interest was also reported to be associated with learners' cognitive effort during the learning process, and it plays an independent role in cognitive learning. From a practical standpoint, situational interest seems to have a positive influence in enhancing learners' achievement.

In another study (Shen & Chen, 2007), the learning profiles in physical education were examined using MDL. The authors used cluster analysis to determine learning profiles and their interactions with prior knowledge, learning strategies, and interest. Results from this study supported the learning stages in MDL in relation to situational interest. The authors also contend that in a highly situationally interesting learning environment, situational interest may have the potential to override the unmotivated effect of low individual interest in learning. In essence what this means is that students may enter the learning environment with low individual interest but teachers can manipulate the stimuli in the learning environment to trigger high situational interest and in the process motivate and nurture the growth and development of individual interest as well. The elicitation and utilization of situational interest as a motivator in and of itself and its potential impact on individual interest should not be overlooked in the learning environment. If teachers are committed to and believe that they can stimulate and develop the growth of student academic interest in this fashion, we will certainly see a level of change in the motivation of our unmotivated and disengaged students.

4 Summary and Conclusion

The purpose of this review is to highlight the 'power' of interest on student engagement and learning in physical education. Specifically, this review has made a convincing case for the key role situational interest plays as a motivator in student engagement and learning. Interest has been conceptualized as individual interest and situational interest. The former is a psychological predisposition to re-engage in particular tasks or content over time. The latter refers to the affective reaction triggered by specific or appealing stimuli in the environment. Individual interest and situational interests are not dichotomous phenomenon but interact and influence each others' development. Students come into the learning environment with a wide range of personal interests and, therefore it is a difficult task for teachers to impact or

change individual interest directly. Teachers do have control of the learning environment and could potentially modify or manipulate the learning environment to make it more situationally interesting to influence student engagement and learning and subsequently impact the development of individual interest.

Research indicates that situational interest is enhanced through the modification of certain aspects of the learning environment and contextual factors such as teaching strategies, task presentations, and structuring of learning experiences. These factors are considered to be the determinants of situational interest.

Situational interest research in physical education has provided a wealth of information. What is consistent in this area of research in physical education is that creating a situationally interesting learning task or environment has been found to enhance student engagement and learning regardless of gender and skill level.

In conclusion, situational interest is a construct that should not be underestimated. Its potential for student engagement and learning in physical education has been well-documented. If teachers are willing to give up the notion that students either have or do not have interest, and recognize that they could potentially contribute to the development of students' interest via the creation of a situationally interesting learning environment, we are bound to see more motivated students willing to be actively engaged in learning.

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Research Articles

Comparison of motivational Orientation of Volleyball Coaches in terms of their Educational Levels and the Level of the Teams they coach

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1	<i>Introduction</i>
2	<i>Method</i>
2.1	<i>Sample</i>
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Abstract

The aim of this study was to compare the motivational orientation of volleyball coaches with their team categories and their length of training. 549 coaches whose age average was 42.19 ± 7.27 years participated in this study and the Sports Motivation Scale (SMS) was used for the motivation measurements. It was found that there is a significant difference between the educational level of coaches and the levels of extrinsic motivation $F(6,547)=4.107$; $p<0.01$ and amotivation $F(6,547)=3.841$;



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