A web of achieving in physical education: Goals, interest, outside-school activity and learning

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Abstract:
Achievement goals and interests are recognized as primary motivators for learning in physical education. The study examined the dynamics of the motivators as associated with organized outside-school physical activity experiences and learning outcomes. Data of achievement goals, personal interest, learning outcomes, and outside-school experiences were gathered from students (*N*= 104) randomly selected from two middle schools. The correlation analysis revealed a complex relationship among the motivators and learning outcomes. The MANOVA showed that the students participating in organized outside-school physical activities had a stronger ego-goal orientation and were more physically active in learning. Their knowledge and skill assessment outcomes did not differ from other students. The findings suggest that participation in outside-school programs may result in an active engagement, but may not lead to a paralleled learning achievement. These findings depicted a complex and dynamic web of relationships between the motivators and learning outcomes that needs to be addressed in future research.
Keywords: Achievement motivation; Physical education; Outside-school activity

Article:

1. Introduction

Since the publication of the 1996 Surgeon General's Report (Center for Disease Control and Prevention [CDC], 1996), the consequences of lack of physical activity have been drawing increased public attention and support to physical education curriculum reform. Actions taken by the federal and many local education authorities are intended to promote an education movement that is expected to address the epidemic of physical inactivity in our children. For example, the U.S. Congress has developed the Carol M. White Physical Education for Progress (PEP) program in 2001 to provide US$400 million in 5 years to fund local schools in need for the curriculum reform. In this effort, it becomes very important to help children acquire knowledge and skills necessary for them to develop and maintain a physically active lifestyle.

However, learner motivation in physical education has been an issue. The lack of motivation can be inferred from instances such as most adolescents do not choose to take elective physical education during their high school years after they have met the minimal physical education credit requirement for graduation. The enrollment in elective physical education in high schools decreased an average of 30% yearly from 1988 to 1996 (National Center for Educational Statistics, 1996), and only 19% of adolescents took physical education regularly beyond graduation requirement to receive health benefits (CDC, 1996).

In education, motivation to achieve in learning is defined as "the process whereby goal-directed activity is instigated and sustained" (Pintrich & Schunk, 2002, p. 5). Although achievement motivation is an invisible process, it can be measured in observable indicators. As Pintrich and Schunk (2002) summarized, achievement motivation is measured in most research studies using direct observations, ratings by others, and self-report. Direct observation measures include the learners' choice of tasks (difficult or easy), effort exerted in an activity, and persistence demonstrated when encountering difficulties. Ratings by others range from teachers formally assessing the learners' performance on a task to observers using systematic observation instruments to

document and evaluate the learners' behaviors. Self-report encompasses a variety of psychometric instruments and techniques that elicit the learners' self-assessment of motivation.

Learner achievement motivation is characterized by content specificity (Bong, 2001). Motivational function from the motivators varies in terms of the content that the learners are interacting with. It is suggested that to maximize motivational effects, teachers may consider using different motivators most relevant to a particular content domain and to the learner at a particular learning stages.

Learners' achievement motivation is based on motivators relevant for them in a particular learning context. Achievement goal orientations and interests, for example, are but two among many potential motivators. Recent research on achievement motivation, however, has identified the two as the most useful because they can be manipulated by teachers to create an optimal motivating learning environment (Sansone & Harackiewicz, 2002).

Among the many motivators for school learners, achievement goal orientations and interests have been recognized to have unique motivation impact on learning behavior and achievement (Harackiewicz & Sansone, 2000; Sansone & Smith, 2000). Research evidence from physical education has demonstrated similar motivation effect from the goal orientations (e.g., Papioannou, 1998; Vlachopoulos & Biddle, 1997; Xiang & Lee, 1998) and interest (Chen & Darst, 2001, 2002). Although research on achievement motivation has been very much centered on the association of the goals and interests with the learners' in-school behavior and performances, it has been postulated that the motivators are based upon the learners' existing knowledge base and value systems, which, more often than not, are developed and mediated by both in- and out-of-school experiences (Jacobs & Eccles, 2000).

As a primary motivator, achievement goal orientations are assumed to play a central role in learners. Achievement goals are defined, similar with the definition widely adopted in educational research, as why students want to achieve what they achieve (Urdan, 1997). In other words, goals are conceptualized as underlying purposes that a learner may be adapted to guide his/her learning behavior. Briefly, in a dual-goal theoretical framework, students achieve in learning for two general purposes (goals): (a) outperforming others (an ego or performance goal) and (b) completing the learning tasks at hand (a task or mastery goal). Although critics of the dual-goal framework argue that the framework is limited in scope of purposes demonstrated by students in learning (Harackiewicz, Barron, Pintrinch, Elliot, & Thrash, 2002), the dual-goal structure has been observed repeatedly in the students' perceptions of goals for learning (Kaplan & Middleton, 2002). Their motivation functions, nevertheless, have yet to be determined, with empirical evidence linking them directly to learning performance, before a conclusion can be reached about which is a "good" or "bad" motivator for learning or if a multiple-goal framework needs to be adopted (Harackiewicz et al., 2002; Kaplan & Middleton, 2002).

It is assumed that the motivation functions of the goals "depends on the purposes espoused in the achievement context" (Kaplan & Middleton, 2002, p. 648). In other words, the fidelity of learner goal orientations is dependent on the competence-based learning goals defined in the curriculum. The link between learner goal orientations and their learning outcomes can provide needed information for educators to clarify the issue. Interest has been viewed as another powerful motivator for children (Dewey, 1913). In research, interest is conceptualized as personal or situational. Personal interest refers to a person's psycho-logical disposition in preference of an activity or an action. Situational interest is defined as the appealing effect of the characteristics of an activity on individuals (Krapp, Hidi, & Renninger, 1992). Both interests have been described as a person–environment (e.g., activity, events, ideas, and objects) interactive construct (Hidi & Harackiewicz, 2000) and both are content specific and have cognitive and affective components. In addition, it has been argued that interests are a key that underlies learner motivation in all learning stages with domain specificity (Alexaner, Jetton, & Kulikowich, 1995).

Although personal interest is recognized as a powerful motivator, in general, it has been deemed difficult to utilize in instruction (Hidi & Anderson, 1992) mainly because of its differentiated nature among learners. It has been suggested that teachers should emphasize situational, instead of personal, interest in teaching, given the fact that it is extremely difficult to develop a motivation strategy that satisfies all learners' personal interests (Hidi & Harackiewicz, 2000).

Nevertheless, personal interests, no matter how diverse, should be taken as learner assets that will eventually lead to achievement. Alexaner et al. (1995) argued that without a strong personal interest, high self-motivation is very difficult for learners to develop. Given that the ultimate goal in physical education is to nurture a physically active life style in the learner, personal interests in any physical activity should be taken as a positive asset of the learner in physical education. In addition, developing personal interest in physical activity should be a focus of the learning experiences in physical education for the learner to become a self-motivated, life-long participant in physical activity.

Outside-school experiences may shape and reshape the learners' achievement goals (Duda, 2001) and interests (Renninger, 2000) through impacting their values about the content (Jacobs & Eccles, 2000). Physical education is a unique learning context where learners are expected not only to construct a cognitive understanding of a physical activity, but also to be able to perform it. It is a common observation that learning in physical education is often mediated by the learners' outside-school physical activity experiences (Lee, 1997). It should not be difficult to assume that outside-school experiences in organized physical activity help learners develop particular goal orientations and personal interest. These motivators, in turn, work hand-in-hand to impact the learners' motivation in physical education classes. Therefore, identifying the effective motivators for physical education learners seems to be an important topic in physical education research.

It has been hypothesized (Dweck & Leggett, 1988) that children's goal orientations are likely to develop in consistence with the task/mastery or ego/performance emphases valued in a context where children are engaged in an achievement activity. It has been documented (Duda, 2001; Treasure, 2001) that organized youth sport programs (e.g., varsity teams, clubs) may not exclusively emphasize the ego/ performance goal (winning in competition). The motivation climate in these programs may be centered on a task/mastery emphasis. However, the relationship between outside-school experiences and the motivators has rarely been examined and so has the association of them with student learning outcomes in physical education.

The purpose of this study was to explore the dynamic associations of middle school learners' goal orientations and interests with outside-school physical activity experiences and learning outcomes in physical education. Specifically, we intended to investigate the extent to which (a) goal orientations and personal interest were dynamically associated, meaning that variation in personal interest (e.g., contact sports, rhythmic activities) was compatible with a type of goal orientation and (b) the learners' in-class physical activity levels (intensity) and assessment outcome (performance on skill and written tests) were associated with goal orientations, interest, and experiences in outside-school physical activity.

For this study, we assumed that goal orientations and personal interest are embedded in the learners' experiences with physical activities that take place in their out-of- and in-school life. In addition, we assumed that students do learn in physical education programs where they are held accountable for learning by the teacher using formal, summative assessments.

Learning is associated with experiences that have been constructed either in- or outside-of-school settings. Exploring the dynamic interactive impact of goals, interest, and out-of-school experiences on learning in physical education will allow us to gain additional understanding about learner motivation and the functions of different motivators. This study may shed light on this endeavor and further inform researchers and teachers about the dynamics of learner motivation issues and learning.

2. Methodology

2. 1. Participants

Students (*N*= 104) were randomly selected from two middle schools in the Washington–Baltimore metropolitan area. The combined student body consisted of approximately 1 100 students in three grades (sixth, seventh, and eighth) at the time of the study. From a simple randomized selection, the sample highly represented the demographics of the student population in the area in ethnicity (64% Caucasian, 36% Minority). All middle-school grades were evenly represented (33.33% in each grade). However, the boys were slightly underrepresented (42% boys, 58% girls). Parental permission was received from all participants prior to data collection.

2.2. The research setting

The schools were selected randomly from a pool that met the following two criteria: (a) the curriculum was in line with both national and state standards and (b) student learning was assessed using measurable means (skill and knowledge tests) in each content unit. Among the school districts in the Washington–Baltimore metropolitan area, one was identified as having physical education programs most likely to meet the criteria, given its long-time tradition of emphasizing concept-based physical education from kindergarten to eighth grade. Student grading was required to be based on the assessment of skill and knowledge acquisition. The district's educational policies associated with physical education included that physical education must be taught by teachers certified in physical education and that elementary and middle schools do not offer interscholastic athletic programs to the students. Thus, the primary responsibility of physical education teachers was to teach physical education full time in their respective schools.

To determine the pool for sampling, a short survey was distributed at an in-service workshop to the physical education department chairs of all the middle schools in the district (n = 18). The survey was designed to acquire information about yearly and semestral instructional plans as associated with national and state standards, the teaching experiences of each teacher in the department, and the instructional-related information such as average class size, scheduling, and number of teachers. We also consulted the physical education supervisor of the district for similar information for verification. Two schools were eliminated because of the district rezoning-related personnel issues. The pool for sampling included the remaining 16 schools.

The schools in the pool used a 90-min rotating block schedule. A typical school day included four periods, with the first period devoted to reading. Physical education classes met in the remaining three periods throughout the day. The meeting hours for these periods during a particular day varied according to the schools' A- or B-day schedules. Students, therefore, had physical education classes every other day throughout the school year. Based on the resources available for the study, we decided to randomly select two schools from the pool. There were three certified physical education teachers in each of the schools. The teachers were all active AAHPERD members. The programming of the physical education was expertise-based in that a teacher taught selected units according to his/her expertise. The students were offered an opportunity at the beginning of the school year to choose a sequence from several to learn the same physical activities/sports. Students from the same grade had physical education in the same period. In each school, the instructional space included a gymnasium, a multipurpose room, a fitness laboratory equipped with exercise machines, and several outdoor fields and facilities for other physical activities and sports.

2.3. Variables and measures

2.3. 1. Achievement goal orientations

The students' achievement goal orientations were measured using the 13-item (five-point scale) task and ego orientation in sport questionnaire (TEOSQ; Duda & Nicholls, 1992). The task- and ego-goal dual subconstructs were validated through a factor analytical approach and were deemed valid. The internal consistency coefficients (Cronbach α) were .82 and .89, respectively.

2.3.2. Personal interest

The students' personal interest in physical activity was measured in a survey by asking the participants to rate 15 physical activities on a seven-point scale (1 = *least interesting*, 7 = *most interesting*). The activities included fitness exercises, individual sports, team sports, and rhythmic movement content such as dance. To minimize the threat to internal validity that may derive from self-interpretations of ratings of personal interest (Tobias, 1994), we used a protocol to limit the possible self-interpretation in the survey. It requires the respondent to fill in a blank with an activity of the highest personal interest (any school or home activity) first, rate it 7, and use it as the criterion activity, against which the 15 physical activities were compared.

2.3.3. Physical intensity

The students' physical intensity in classes was measured using the Yamax Digiwalker, which recorded total steps each participant took during a lesson. The literature has shown acceptable validity and reliability of physical intensity measures by the device (Bassett, 2000; Tudor-Locke & Myers, 2000; Welk, Corbin, & Dale, 2000). In a pilot trial of the device for the study, the concurrent validity coefficients of the Digiwalker data ranged between .65 and .91, in accordance with heart rates recorded using the Polar Heart Rate Monitors.

2.3.4. Assessment outcome

The students' performance assessments on skill tests and written exams given by the teachers in various instructional units were used as the indicator of their assessment outcomes. In both schools, the teachers used a 20-point scoring system in each unit. The points were equally assigned to physical skill and knowledge tests, although the teachers usually used a predetermined weighting system to reflect their perception of importance in skill tests (e.g., serving test was weighed more than forearm pass test in volleyball). We did not impose any additional achievement assessment to preserve the authenticity of the learning assessment. We categorized all assessment scores into either skill or knowledge category. Scores in the two categories were then aggregated and averaged on the 20-point scale to represent learner assessment outcome.

2.3.5. Out-of-school participation

Information on out-of-school physical activity experiences was gathered in a survey by asking the participants to indicate, with specific information (e.g., where, what, when, paid or unpaid), whether they took part in organized after-school physical activity programs. Although students often participate in self-initiated physical activities, organized activity programs are more likely to nurture and develop particular motivators (goal orientations, personal interest) that the study was investigating. Thus, we decided to use "participation in organized out-of-school programs" as the grouping indicator for the data analysis. The reader should take this grouping limitation into account when interpreting the findings.

2.4. Data collection

The participants' responses to the TEOSQ, personal interest, out-of-school activity participation, and other demographic information were collected in two prior-to-class sessions in a quiet classroom adjacent to the gymnasium. Physical intensity data were collected in two randomly selected instructional lessons (not introduction or assessment lessons) in each of the following content units: dancing, fencing, fitness club, gymnastics, multigames, and volleyball. During these lessons, each participant wore a Yamax Digiwalker to measure the number of steps that he/she took. Skill test and written exam grades were collected from the teachers after the instruction, for a unit was officially complete. All data collection was conducted by the researchers.

2.5. Data analysis

Goal orientation data were reduced according to the construct subscales (Duda & Nicholls, 1992). Out-of-school physical activity data were reduced into participation and nonparticipation. Personal interest data were reduced using principal component analysis. The Digiwalker data were aggregated and averaged from all the lessons to represent the learner's average in-class physical intensity. Skill and written test grades were aggregated and averaged to represent assessment outcomes in these content units. The association between goal orientations, interest, physical intensity, and achievement was examined using the Pearson Product–Moment

Correlation Analysis. MANOVA was conducted to examine the differences in physical intensity, assessment outcomes, goal orientations, and interest based on out-of-school physical activity experiences.

Table 1
Principal component matrix (loadings) for personal interests of activities

Contact sport	Rhythmic activity	Alternative game	Other
Team handball (.76)	Social dance (.77)	Speedball (.77)	Juggling (.81)
Rugby (.64)	Volleyball (.68)	Table tennis (.71)	Flag football (.52)
Floor/field hockey (.63)	Folk dance (.63)	Archery (.55)	
Self-defense (.54)		Pickleball (.55)	
Basketball (.51)			
Soccer (.48)			
Eigenvalues			
2.68	2.17	2.14	1.38
Percent variance			
17.86	14.50	14.28	9.18

3. Results

As reported in Table 1, the principal component analysis reduced the participants' personal interests into a four-category structure. The categories were named contact sport (team handball, rugby, floor/field hockey, self-defense, basketball, and soccer), rhythmic activity (folk dance, square dance, social dance, and volleyball), alternative games (speedball, table tennis, archery, and pickle ball), and other (juggling and flag football). The aggregated average rating scores for the activities in each category were calculated to represent a participant's interest level in the category in the subsequent analyses.

Descriptive analysis showed that the participants had stronger task (M=3.95, S.D.=0.57) than ego (M=2.63, S.D.=0.90) orientation. Their personal interests in contact sport (M=4.16, S.D. = 1. 16) and alternative games (M= 4.22, S.D. = 1.23) were higher than in rhythmic activity (M= 3.45, S.D. = 1.40) and other (M= 3.75, S.D. = 1.30). On average, a student took 1734.44 steps (S.D.= 369.59) per lesson, and their average assessment outcome was at B level (M=17.62, S.D.= 1.44 on a 20-point scale). Among the participants, 45 (47%) did not and 53 (53%) did participate in any organized after-school physical activity. Six participants did not respond.

Table 2
Correlation among variables

	Task	Intensity	Assessment	Contact	Rhythmic	Alternative	Other
Ego	.12	.16	−.08	.12	−.07	.09	−.02
Task		.21*	.11	.48**	.19	.38**	.19
Intensity			.01	.31*	.06	.25*	.29**
Assessment				.01	.38**	.11	−.03
Contact					.07	.40**	.30**
Rhythmic						.29*	−.04
Alternative							.22*

*P<.05.
**P<.01.

The results of the Pearson Product–Moment Correlation Analysis are reported in Table 2. Ego orientation did not correlate with personal interest and outcome measures. Task orientation correlated moderately with contact sport, alternative games, and, weakly, with physical intensity. In addition to task orientation, physical intensity correlated with contact sport, alternate games, and other. Assessment outcome correlated moderately with rhythmic activity.

Table 3 reports the descriptives of the measures, grouped in terms of participation or nonparticipation in out-of-school, organized, physical activities. In the MANOVA, participation in after-school physical activity (participation) was used as the factor, and the measures of goals, interest, physical intensity, and assessment outcome were the dependent variables. Because of possible social influences, personal interest might be gender biased (Lee, Fredenburg, Belcher, & Cleveland, 1999; Shen, Chen, Scrabis, & Tolley, 2003). Thus, it was used as a covariate to control the variations by personal interest. The multivariate analysis showed a statistically significant difference between the two groups (Hotelling's T=0.249, F= 2.70, P=.01, Box M= 125.19, P=.622). Further comparisons, reported in Table 4, revealed that the participant students had stronger ego orientation,

were more interested in contact sport and other activities, and demonstrated higher physical intensity in physical education classes than their nonparticipant peers did. No significant differences were found on other measures.

Table 3
Descriptives of the measures for outside-school activity participants and nonparticipants

Variable	Participants ($n=53$)		Nonparticipants ($n=45$)	
	Mean	S.D.	Mean	S.D.
Ego	2.81	1.04	2.41	0.66
Task	4.04	0.52	3.84	0.60
Intensity	1798.65	398.37	1658.81	320.57
Assessment	17.66	1.37	17.58	1.54
Contact	4.52	1.14	3.75	1.06
Rhythmic	3.40	1.29	3.51	1.53
Alternative	4.37	1.06	4.05	1.39
Other	4.00	1.16	3.46	1.41

Table 4
Differences in variables between participants ($n=53$) and nonparticipants ($n=48$)

	$SS/MS_{df=1}$	F	P	Leven's F/P
Ego	3.41	4.40	.04	1.76/.16
Task	0.90	2.81	.10	.76/.52
Intensity	665,163.44	5.21	.03	1.14/.34
Assessment	2.28	1.16	.28	1.28/.29
Contact	13.83	12.17	.00	.44/.72
Rhythmic	.46	.29	.59	.36/.79
Alternative	3.64	2.47	.12	1.54/.25
Other	7.03	4.52	.04	1.42/.24

4. Discussion

The study was designed to investigate the extent to which goal orientations, personal interest, and measurable learning outcomes (a) were dynamically associated and (b) differed in terms of learners' out-of-school physical activity participation experiences. Based on the analyzed data, we attempt to address the research questions in (a) a web of motivators and learning outcome and (b) a reality check on out-of-school connections.

4. 1. The web of motivators and outcomes

The correlation analysis showed a weak relationship between goal orientations and learning outcomes. The result may suggest that relying on motivation strategies appealing to a particular type of goal orientation may not be as fruitful as expected. Personal interest had a low–moderate correlation with physical intensity, lending a support to the previous findings (Shen et al., 2003) that middle-school students' personal interest in dance was not correlated with their physical intensity in learning dance, but was strongly correlated with their performance in dance skill tests and written exams. The findings indirectly support the notion that situational interest elicits active engagement in the learning process, whereas personal interest contributes to skill and knowledge acquisition (Alexaner et al., 1995; Chen, Shen, Scrabis, & Tolley, 2002; Hidi, 2000).

Results from the correlation analysis also present an interesting web of association among the categorized personal interests in physical activities, motivators, and learning outcomes (physical intensity and assessment outcomes). This web depicts a picture of multiple dimensions involved in the process of motivated learning and behaviors. Information from the web suggests a general absence of a learning outcome–goal orientation association and a general presence of a low–moderate learning outcome–personal interest association. In addition, the task orientation is associated with interests of contact sports and alternative games. In this web of motivators and learning outcomes, students are the center of action. Their purposes of action may determine the dynamics of behavior. According to Butler (2000), when in an information-seeking context such as learning, students are most likely to engage in actions that may result in acquiring information relevant to the motivators that they adapt to. In other words, learners are likely to strive to achieve to either satisfy their superior ability (ego orientation), to demonstrate their mastery of the skill (task orientation), or to fulfill their personal interest. In any of these cases, a direct motivator–outcome link should be identifiable as found in classroom studies (Butler, 2000).

The absence or weak associations of learning outcomes with goal orientations and personal interests raise a few questions for researchers and teachers in physical education. The motivation function of various motivators is characterized with domain specificity (Bong, 2001). With seeking motivator-relevant information as a purpose, students in physical education may adapt to a personally relevant motivation quickly and substitute the purpose of learning defined by the teacher with their own motivator-relevant purposes. These purposes may include winning a game for ego-oriented learners, completing a task at hand for task-oriented learners, or merely having fun for learners whose personal interest happens to be consistent with the content activity on that particular day. Failure to address the discrepancies in motivators can result in curriculum incoherence (Chen et al., 2002; Ennis, 1998) and can lead to learner disengagement and underachievement in learning.

We argue, consequently, that learners' motivated actions in physical education lessons may not necessarily result in learning achievement that meets the curriculum goals or standards. Learners in physical education are faced with two challenges: They are expected to actively engage in a high level of physical movement to receive health benefit of physical activity, and, in addition, they are expected to acquire cognitive knowledge and physical skills that enable them to engage in a physically active life style throughout their lives. The findings, although very limited, appear to suggest that physical educators need to consider these different challenges and develop content-sensitive and content-specific motivation strategies to help them (Bong, 2001).

As conceived in the physical education content, competence-based learning goals (acquisition of knowledge and skills) are often coupled and implemented with a strong influence of noncompetence goals such as having fun and enjoyment during learning. This combination creates a learning climate where most students like to engage in learning processes that may be unrelated to competence development. As Goodlad (1984) observed, although physical education is a content area that students like the most, it has the lowest perceived value among students, as well as among school administrators and teaching staff. The misconception of the value of physical education may create an incoherent curricular context, in which neither achievement goal is an integral part of the context, because the relevance to learn the content is likely to be misunderstood by both students and teachers. The misunderstanding, characterized by the perceived low value in the content and mixture of competence-and noncompetence-based learning goals, appears to dramatically reduce the effectiveness of achievement goals as a primary motivator for enhancing student learning in physical education.

4.2. A reality check on out-of-school connections

The MANOVA results indicated that participation in organized out-of-school physical activity programs led to a stronger ego-goal orientation and to higher interest in contact sports (including other activities) and physical intensity in physical education lessons. What is worth noting is that the participants and nonparticipants did not differ in the task-goal orientation, assessment outcome, and interests in rhythmic activities and alternative games.

From a constructivist perspective, on the one hand, out-of-school experiences can be a valuable asset for the learner. These experiences provide an extensive knowledge base on which content taught in school is comprehended, interpreted, and internalized (von Glasersfield, 1995). It is assumed that physical education students construct knowledge and skills by making meaningful connection between the content learned in classes and the physical activities experienced outside school (Chen, 1998). On the other hand, adopting a constructivist teaching approach has proved to be extremely challenging for teachers. Facing an increased number of alternative conceptions about a phenomenon in learners is but one of the challenges. As Windchill (2002) summarized, for instance, learner alternative conceptions (or misconceptions) acquired from out-of-school sources can be difficult for the teacher to adapt to, manage, and deal with in teaching, where most learner alternative conceptions are found inconsistent with the specified learning standards of the curriculum.

The MANOVA results portray a similar challenge for physical educators. Research in physical education (Griffin & Placek, 2001) has provided some evidence suggesting that students come to physical education with relatively extensive prior knowledge or conceptions (correct or alternative) about a specific activity. Our data seem to add to these previous evidence, suggesting that students also come to the gymnasium with common and

differentiated motivators. Most students are likely to be task oriented and share similar level of personal interest in rhythmic activities and/or alternative games. Those who participate in organized out-of-school physical activity programs may be more likely to conceptualize physical education to be a place to show competitiveness and physical superiority than nonparticipant students do, although the ego orientation in the participant students is relatively low in itself.

Participant and nonparticipant students did not differ in assessment outcome measures (F= 1.16, P=.28), and yet, the participant students demonstrated a higher in-class physical intensity level (F = 5.21, P=.03). Coupled with the correlation analysis results, the assessment outcome measures seem to be detached, in some way, from learner goal orientations, personal interest, and physical effort. The indifferences may indicate the rigor and robustness of the assessments used in the two schools in that what students were assessed on was not determined and altered with what they did in out-of-school physical activity programs. The indifference, however, may also indicate a lack of ethnographic communication, a hidden dialogue process of making meaning in content learned in schools in terms of the experiences outside of the school. Learner ethnographic communication is found to be an important component in literacy learning in individual cases (Hull & Schultz, 2001).

Further interpreting the indifferences between the two groups seems beyond what the data permit. Nevertheless, the issue of out-of-school physical activity participation and learning in physical education should be addressed in research. Hull and Schultz (2002) challenged literacy researchers to acknowledge the fact that most literacy learning occurs outside the school and to adopt various research methodologies to explore the learners' role in out-of-school learning, such as identity assumed, motivation sources, sophistication of the programs (or self-study), and value discrepancies in relation to what is taught in school.

Further studying the impact of out-of-school physical activity programs on learning in physical education appears to be imperative from an achievement motivation perspective, too. It is assumed that the ego-based motivation is more likely to be nurtured in a competitive environment. Data from the students in this study revealed that those who participated in out-of-school sport/physical activity programs demonstrated just so. However, they were task oriented, as much as those who did not participate in those programs. These findings depict a complex and dynamic relationship between goal orientations and personal interest, and between them and learning outcomes. In addition, the results showed that the differences in physical intensity in physical education were associated with motivators, whose function, in turn, was possibly affected by the learners' out-of-school physical activity experiences.

More in-depth data are needed about the nature, development, and practices of the out-of-school programs before any conclusion can be reached on their impact on learner achievement motivation in physical education. A reasonable conclusion we can make from the data is that there is a dynamic relationship among the various motivators at work. The actual motivation effects of the motivators may rely on the learner, the learning environment, and expected learning outcome. An integrated theoretical framework (Chen, 2001) should be adopted for us to further understand the effects of the motivators to address the issues of learning and achievement motivation effectively in physical education.

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