Motivation orientation differences on gender and age and physical activity

George Tzetzis, Marios Goudas*, Thomas Kourtessis**, Vaso Zisi
Aristotelion University of Thessaloniki
*University of Thessaly
Democritus University of Thrace

Key Words: physical activity, goal orientation, CSA

Achievement goal theory has been the subject of extensive research in recent years. Although theorists differ on terminology, they all agree that goals influence individuals’ responses to achievement settings and suggest that individuals’ goal orientations influence motivated behavior (Williams & Gill 1995). Achievement goal orientation and perceived physical competence are two dimensions of motivation that interact to affect exercise behavior. According to Nicholls (1984, 1989) individuals can demonstrate competence via two goal orientations. Under a task goal orientation, ability is conceived in terms of learning, improvement and effort, and these qualities lead to greater mastery and achievement. Thus, ability and success is self-referenced. In contrast, an ego goal orientation denotes a conception that the demonstration of competence is dependent upon performing favorably in comparison to others. A considerable body of research has dealt with that a task orientation facilitates intrinsic motivation and is positively correlated with enjoyment and interest on sport participation as well as with self reported effort while ego orientation is negatively related to enjoyment (Duda, Chi, Newton, Walling & Catley 1995; Nicholls 1984, 1989).

Participation in sports is strongly related with enjoyment. It is very important to focus on children’s enjoyment through participation in sports because it is linked to long term health (Powel, Thompson, Caspersen,, & Kendrick 1987). School physical education is the primary reason for sport participation especially for children. In a society in which adult sedentary behavior contributes substantially to the epidemic of cardiovascular and other chronic diseases there is a rationale for shifting the orientation of physical education to a health focus (Sallis & McKenzie 1991). Moreover, school physical education is the only major institution that can address the health-related physical activity needs of virtually all children.

Several researchers had hypothesized that regardless of the level of perceived competence, task goal orientation is positively associated with effort (Duda 1992; Nicholls 1989; Nicholls and Miller 1984). Newton and Fry (1998) concluded that there was a positive association between task orientation and intrinsic motivation the belief that success in sport is achieved through hard work and self-improvement based purposes of sport. Ego orientation was associated with the belief that success in sport is achieved by those who are gifted with natural ability a factor that does not help ordinary people and especially children who are in a developmental procedure to realize their abilities. Goal orientations were also examined in combination with other perceptions. Vlachopoulos, Biddle and Fox (1996), highlighted the motivational advantage of adopting a task orientation in physical achievement situations and demonstrated the role of task orientation as a determinant of affect in exercise testing in children. Williams and Gill (1995) revealed that task orientation was a good predictor of effort. However, the interaction of ego orientation and perceived competence failed to adequately predict effort. They also concluded that task goal
orientation but not ego orientation directly influenced perceived competence, intrinsic interest and effort. The identification of the type of goal orientation that leads to participation in physical activity may give an insight to methods of influencing students to be more physically active.

Most of the researchers in this area examined cognitive and affective correlates of goal orientations. It is still under investigation however, how motivational orientations are related with children’s actual physical activity either in sport or in physical education settings.

Little is known about children’s activity levels during physical education classes. Physical inactivity has been recently recognized as a cardiovascular disease risk factor in adults (Paffenbarger, Hyde, Wing, & Hsieh, 1986; Powell, Tompson, Caspersen, & Kendrick 1987). Researchers suggested that physical activity patterns track during childhood (Pate, Dowda, Baranowski, & Puhl 1993), and it is possible that children’s activity patterns might continue into adulthood. Physical education is mandatory in Greek Schools and most of the European countries. Almost all of the states in U.S. have mandatory physical education and classes available to nearly every child (Ross, Dotson, Gilbert, & Katz 1985; Ross, Pate, Corbin, Deply, & Gold 1987). Due to the increasing demands of students for schoolwork, their limited free time and their limited opportunity to engage many leisure activities it seems that physical education classes provide children the opportunity to engage in physical activity. The magnitude of children’s participation in physical activity is closely related with the enjoyment they receive from participation.

Lintunen, Valkonen, Leskinen and Biddle (1999), who examined the physical activity intentions using a goal perspective approach they found that the nature of sport ability positively influence enjoyment in physical activity and intentions to participate in physical activity mediated by task-oriented achievement goal independent of variations in perception of competence. They have also found that intention to participate mediated by an ego-oriented achievement goal and by perceived competence.

Kimiecik and Horn (1989) examined the role of parental beliefs in their children’s moderate to vigorous physical activity. They found that parental beliefs relating to their children, especially perceptions of competence and a task orientation high relationship with the amount of moderate to vigorous participation. They suggested that parental beliefs should be taken into consideration to better understand the psychological process underlying children’s participation in fitness oriented physical activity. In a later study Dempsey, Kimiecik and Horn (1993) asserted that the only variable related to the children’s MVPA participation was their parents’ perception for their children’s MVPA competence. Additionally, children’s task orientation and expectancies significantly predicted their MVPA participation.

Siegel (1999) assessed patterns of participation, motivation for sport and level and types of physical activity in urban Mexican school youth. He found that females preferred individual lifetime activities whereas males seem to prefer sport activities. The primary reason for sport participation of the youth was fun and physical fitness. Males were more ego oriented than females and there were no difference in task orientation. Most males were in the active category while most of the females were in the inactive category. Biddle, Soos, and Chatzisarantis (1999) attempted to predict physical activity intentions using a goal perspectives approach in 12 to 16 years old Hungarian adolescents. They found that a big percentage of the intentions was explained by their task orientation. The motivational importance of a task orientation was confirmed with its direct prediction of intentions.
Raudsepp, Viira and Liblik (1999) examined the relationship of perceived physical competence and achievement goal orientations as related with physical activity of adolescents. They found that adolescents with high physical activity score showed higher task orientation and ego orientation (males). Physical activity was highly correlated with task orientation, physical condition, body attractiveness and strength.

Most of the above research studies examined the relationship of goal orientation with perceptions, states, or affections. Most of the researchers support the positive relationship of task goal orientation with effort or why some children continue to work and try hard to achieve in activities while others give up or stop trying and the mediating role of goal orientation with enjoyment and effort (Williams and Gill 1995). These studies utilized goal perspectives framework to predict physical activity intentions. Very few researchers, if any, examined the effect of goal orientation on actual physical activity. The purpose of this study was to examine not intentions or effort but physical activity as objectively measured by an objective instrument (CSA) in typical physical education classes for elementary school children.

Method and Procedure

Sample
The participants of the study were 112 students in physical education classes. They were boys (N=62) and girls (N=62) from two different age groups of 9-12 years of age (M=10.6). Students classified into four groups according to their goal orientation: a) high task, low ego, b) high task, high ego, c) low task, low ego d) low task, high ego. The groups completed a goal orientation questionnaire and they formed the groups according to whether their scores were higher or lower for task or ego than their median scores.

Procedures
The Task and Ego Orientation Sport Questionnaire (TEOSQ, Duda 1992) measured goal orientation. It is a 13-item scale that measures the degree to which individuals identify with the ego and task goal orientations in the sport setting. Seven items reflect task goal orientation and six items reflect ego goal orientation. Individuals indicate the degree to which they agree with each situation on a 5-point Likert-type scale ranging from strongly disagree to strongly agree. Mean scores on the Task and Ego subscales range from 1 to 5. In the physical domain the TEOSQ has been found to be reliable and valid (Duda 1992; Duda, Olson & Templin 1991). After a pilot study the TESQ’s task and ego orientation measures had Cronbach’s alpha coefficient of .81 and .83 respectively.

An objective instrument measured children’s physical activity during the physical education class. Students wore a CSA instrument measuring physical activity (Computer Science and Applications, Shalimar, Florida-CSA). The CSA evaluated the physical activity of the students during the physical education classes. They were worn on the waist during the physical education classes. This instrument has a memory that stores activity counts for user-defined periods that can be as short as 1 second (Melanson & Freedson 1995). All data were then loaded to a computer for further analysis. Data from CSA instrument were METS (number of calories students expended at rest), (Corbin 1996). The time of subjects participated to moderate (4-6 METS) or vigorous activity (>7 METS) was also measured.
The independent variables were student’s classification into a) the four goal orientation groups and the dependent variables were the physical activity as measured by the CSA instrument and the time participated in moderate and vigorous activities.

Results

The descriptive statistics of the ego and task scores for the groups of different age and gender are found on Table 1.

Table 1. Means and Standard Deviations of Task and Ego orientation for different age and gender groups

<table>
<thead>
<tr>
<th>Gender</th>
<th>9-10</th>
<th>Grades</th>
<th>11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Males</td>
<td>4.49</td>
<td>.60</td>
<td>4.62</td>
</tr>
<tr>
<td></td>
<td>4.49</td>
<td>.30</td>
<td>4.50</td>
</tr>
<tr>
<td>Females</td>
<td>3.27</td>
<td>.91</td>
<td>3.01</td>
</tr>
<tr>
<td></td>
<td>2.89</td>
<td>.81</td>
<td>2.43</td>
</tr>
</tbody>
</table>

From a (2X2) ANOVA that was conducted to identify possible differences in sex or age for the task or ego scores it was found that there was no significant difference in sex (F_{1, 108}=.55, p>0.05) or age (F_{1, 108}=.54, p>0.05). The group then was analyzed as a whole.

An attempt was made to examine possible differences between goal orientation types and level of physical activity as measured by METS and duration of time that students participated in moderate or vigorous activities.

An ANOVA was conducted to reveal possible differences of physical activity measured by METS for the four goal orientation groups. The analysis revealed no significant (F_{3, 108}=.2.56, p>0.05) differences of physical activity among the four goal orientation group as measured in METS.

A separate ANOVA was conducted to examine possible differences of the time each subject participated to moderate or vigorous activity among the four different goal orientation groups. It was found that there was no significant difference (F_{3, 108}=.50, p>0.05) for the participation to moderate physical activity but there was a significant difference (F_{3, 108}=5.50, p<0.05) for the vigorous physical activity and the post-hoc Sheffe test revealed that the group “low ego- high task” and the group “high ego – high task” had longer participation to vigorous activity than the “high ego – low task” group. Descriptive statistics of the time each group participated to moderate or vigorous activity are found on table 2 and 3.

Table 2. Descriptive statistics of time participation to moderate activity

<table>
<thead>
<tr>
<th>MODERATE</th>
<th>MEAN</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low ego – Low task</td>
<td>7.29</td>
<td>3.25</td>
<td>24</td>
</tr>
<tr>
<td>Low ego – High task</td>
<td>7.29</td>
<td>3.26</td>
<td>28</td>
</tr>
<tr>
<td>High ego – Low task</td>
<td>7.78</td>
<td>3.96</td>
<td>26</td>
</tr>
<tr>
<td>High ego – High task</td>
<td>7.73</td>
<td>2.22</td>
<td>34</td>
</tr>
</tbody>
</table>

Table 3. Descriptive statistics of time participation to vigorous activity

<table>
<thead>
<tr>
<th>VIGOROUS</th>
<th>MEAN</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low ego – Low task</td>
<td>3.43</td>
<td>3.21</td>
<td>24</td>
</tr>
<tr>
<td>Low ego – High task</td>
<td>4.73</td>
<td>2.41</td>
<td>28</td>
</tr>
</tbody>
</table>
Contemporary achievement motivation theorists and researchers argue that an emphasis on task orientation fosters feelings of competence and greater effort whereas the goal of outperforming others (ego orientation) is likely to lead to feelings of incompetence, less persistence and behavioral intensity (Ames, 1984; Duda, 1992; Dweck, 1986; Nicholls, 1989; Roberts, 1992). In this research students that scored high in task orientation participated more time in vigorous activities even if they had low or high ego scores. They were not differently participated in the moderate activities. This is an important result in terms that the extra effort that leads students during the physical education class, to vigorous activities depends on their task goal orientation.

However, the connection between physical activity and task goal orientation is not that simple. Relative research showed that there are other factors influencing effort or physical activity. Williams and Gill (1995) showed that although there is a positive relationship between task orientation and effort relationship between ego goal orientation and effort depends upon the individual’s level of perceived competence. If this level is high then the effort is also high. Contrary, if the level of perceived competence is low, the effort is also low because individuals believe that they cannot outperform others. Other factors such as level of interest, self-esteem may influence the relationship of individuals with effort. Deci and Ryan’s (1985) theory that the relationship between perceived competence and effort is mediated by intrinsic motivation or by one’s propensity to engage in challenging tasks has been partially supported in the physical domain. Specifically, appropriate contingent rewards and feedback that reflect favorably on one’s competence leads to greater intrinsic motivation (Ryan, 1977, 1980; Thomas & Tennant 1978). It needs further investigation to identify the mediating or the supporting role of these psychological factors on students’ physical activity during physical education classes or during their every day life. Then it will be easier to intervene into the physical education programs. When elementary physical education classes are directly observed, relatively little physical activity is seen. Parcel et al. (1987) observed physical education classes taught by specialists and coded the activity levels of children. They found in a 30-min class, the average child was vigorously active for only 2 min. In this research it seems that the duration time of the moderate and vigorous activity for physical education classes was also very limited. Physical educators should make a better management of their class in order to improve the duration of physical education practice time, the quality of the scheduled time in order children to be more active and prepare for lifetime physical activity. There is a big space for improvement for the context and the demands of the physical education class and teachers should work to be more efficient and effective. Simons-Morton, Parcel, and O’Hara (1988) trained physical education specialists to implement health related physical education. The amount of class time spent in fitness activities during the first year of intervention was twice the level of control schools. This indicates specialists can be trained to make substantial changes in their teaching practices. Psychological techniques could
assist to improve student’s enjoyment and participation. A more trained personnel on these subject matters is needed to improve the picture in today’s schools.

References


