Achievement Goal Orientation Patterns and Fifth Graders’ Motivation in Physical Education Running Programs

Ping Xiang, Ron E. McBride, April Bruene, and Yuanlong Liu

This study examined achievement goal orientation patterns and their impact on student motivation in physical education running programs. Participants included 533 fifth graders. They completed questionnaires assessing their achievement goal orientations, expectancy beliefs, task values, and intentions for future participation in running. They also completed a timed, 1-mile run. Data revealed 4 goal orientation patterns: low task/low ego, low task/high ego, high task/low ego, and high task/high ego. Students in the high-task/low-ego and high-task/high-ego groups demonstrated higher levels of motivation in running than those in the low-task/low-ego and low-task/high-ego groups.

Regular participation in physical activity is considered critical for healthy and active lifestyles among children and adults in the United States (16). A key element for promoting physical activity among children is to understand what motivates them to participate in physical activity. In recent years, achievement goal theory has been widely used as a framework to explain and understand student motivation and related cognitive, affective, and behavioral outcomes in physical education (4).

Task orientation and ego orientation are the two major goals identified from students who participated in physical education (14,20). Also known as dispositional goal orientations, the two goals reflect how individuals define success in achievement settings (10). Specifically, task orientation focuses success on developing one’s competence through learning and task mastery, and ego orientation focuses success on demonstrating one’s superiority over others. Compared with ego orientation, task orientation is more likely to be associated with more positive motivational and behavioral outcomes, including working hard, a strong intention for future participation in physical education, and a willingness to choose learning tasks with a high level of difficulty (14,22).

The adoption of task or ego orientations is associated with whether students are able to differentiate the relationship between ability and effort (10). Students who equate ability with effort are more likely to adopt a task orientation, and students who differentiate ability from effort tend to adopt an ego orientation. Regardless, only when students reach late elementary school years are they able to understand

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the distinction between ability and effort and their differential contributions to success.

Task and ego orientations are theoretically independent (10) and, thus, are able to combine to influence students’ cognitive, affective, and behavioral outcomes. Using analytic techniques such as median-split procedures and cluster analysis, researchers (7,9,11) further categorize these achievement goal orientations into groupings that range from low to high orientations. Based on low and high levels of both orientations, there can be four different patterns: low task/low ego, low task/high ego, high task/low ego, and high task/high ego. This suggests that students can endorse both task and ego orientations and different levels of both orientations at the same time while participating in physical education. Consequently, the role of these four achievement goal orientation patterns in students’ motivation, behavior, and achievement has been explored in classrooms, sports, and physical education (7,9,11).

Fox, Goudas, Biddle, Duda, and Armstrong (7), for example, examined achievement goal orientation patterns and their impact on children’s sport motivation among British middle school students. They reported that the four achievement goal orientation patterns had differential effects on students’ motivation in sport, with the high-task/high-ego pattern being the most adaptive and the low-task/low-ego pattern the least adaptive in measures of sport enjoyment and perceived sport competence. In one of the few studies in physical education, Standage and Treasure (15) examined the four achievement goal orientation patterns along with middle school students’ situational motivation and observed results similar to those of the Fox et al. study (7). Students in the high-task/high-ego and high-task/low-ego groups reported higher levels of intrinsic motivation and lower levels of amotivation toward physical education than students in the low-task/low-ego and low-task/high-ego groups.

In addition to the achievement goal theoretical framework, expectancy value theory (6) represents another major theoretical perspective that helps explain student motivation, achievement beliefs, and behaviors in classroom and physical education settings. Expectancy beliefs and task values are the two constructs central to expectancy value theory and are associated with students’ activity choice, performance, effort, and persistence (6,23). Expectancy beliefs refer to children’s beliefs about how well they will perform an activity. Task values represent the degree to which children value an activity; importance, interest, usefulness, and cost are the four major components of task values. Importance concerns children’s perceptions of the significance of doing well at a given activity. Interest refers to the enjoyment children get from performing an activity or personal liking of an activity. Some researchers (12) consider this component similar to the construct of personal interest (13). The third task value, usefulness, refers to children’s perceptions of how beneficial an activity is to them. Children tend to engage in activities that they believe will be of some use to them. Finally, cost is associated with negative aspects of engagement in an activity, such as losing time for other activities. This task value has received less research attention in both academic and physical education settings. This might be because of the lack of well-established measures.

Guided by both achievement goal theory and expectancy value theory, Xiang and associates examined the relationships among achievement goal orientations, expectancy beliefs, task values, and elementary school children’s motivation in
physical education as a general subject area (22) and in running as a specific activity (21). They found that achievement goal orientations, expectancy beliefs, and task values were related to one another and were predictors of children’s intentions for future participation in physical education and in running. Expectancy beliefs were predictive of 1-mile run performance for all children regardless of their gender.

Achievement goal orientations, however, were examined individually. As a result, little is known about the impact of the four achievement goal orientation patterns (low task/low ego, low task/high ego, high task/low ego, and high task/high ego) on expectancy beliefs and task values among students. Because no studies have examined such impact, inquiry into this area might provide additional information on students’ motivations in physical education. Because motivation represents a complex process in which many factors interact to affect students’ achievement-related cognitions, affects, and behaviors, multiple perspectives are required to study students’ motivations and their related cognitive, affective, and behavioral outcomes.

The purpose of this study, then, was to extend previous research by examining achievement goal orientation patterns and their impact on fifth graders’ motivational beliefs and outcomes in physical education running programs. The present study extends earlier work on achievement goal orientation patterns (7,15) in two ways. First, it focuses on running programs conducted in school physical education, an area largely overlooked by achievement goal research. Many school physical education programs promote lifelong activity among children through running programs. Central to the success of these running programs is whether children are motivated to participate and demonstrate high levels of engagement. By examining the impact of the four achievement goal orientation patterns on students’ expectancy beliefs, task values, and running performance in such contexts, the present study provides teachers with information that they can use to design running programs in which all children might be equally motivated to participate and benefit. Second, research on achievement goal orientation patterns thus far has tended to rely on students’ self-reports of achievement behaviors or performances. This study, however, includes a timed 1-mile run as a performance measure. The inclusion of this actual performance measure allows for a more accurate test of achievement goal theory in relation to student-motivation and -achievement behaviors. It also strengthens the ecological validity of the present study. Specifically, the research questions were (a) What are the achievement goal orientation patterns and their distribution among fifth graders in running? and (b) What is the impact of achievement goal orientation patterns on students’ expectancy beliefs, task values, intentions for future participation in running, and timed 1-mile runs? We included the construct of intention as a dependent variable in this study because it represents an important motivational outcome (6), and it correlates well with observed achievement behaviors (1).

**Method**

**Participants**

Participants consisted of 533 (285 boys and 248 girls) fifth graders from two intermediate schools in southwestern Texas. Approximately 40% had participated in a previous running study (21), but a new set of data was collected for this study. Their
backgrounds ranged from lower middle class to middle class, and the breakdown of their ethnicity was 59.7% White, 10.5% Black, 10.9% Hispanic, 8.3% Asian American, and 6.8% other ethnic backgrounds. Of the 533 students, 21 did not report ethnicity. All students participated in running programs (i.e., Run for Your Life) that were conducted during their regularly scheduled physical education classes. Participation in this study was voluntary, and we obtained institutional, parental, and child permission before the study.

Running Programs

Schools A and B both had Run for Your Life running programs as part of the required physical education curriculum. In both schools, students attended physical education daily for 45- to 50-min class periods. Both programs required students to participate during their regularly scheduled physical education classes. Furthermore, both were based on the same overriding goals of using running as a means for promoting fitness, lifelong physical activity, and goal-setting skills. In both programs, verbal encouragement for meeting the specific distance and lap goals came from the teachers, as well as the other students. Finally, students’ daily or weekly accomplishments were posted to track their progress toward those goals. The postings were not used by the teachers for comparisons among students; rather, they helped students compare their own performances as they progressed through the program. Despite these similarities, the running program at the two schools differed in a number of ways.

At School A, Run for Your Life was conducted for approximately 15 consecutive class days during regularly scheduled physical education classes in the spring. During the program, students participated in a variety of activities that emphasized the fundamentals of running (e.g., running form, pacing, mileage and distance, and a variety of courses or terrain), and the benefits of running as a lifelong activity. One of the specific goals of the program was for each student to run enough laps to accumulate mileage equivalent to a marathon (i.e., ~26 miles) by the end of the program. Students were encouraged to run as many laps as they could each day when they went out to run. Incentives from the teachers included rewards such as allowing the early finishers their choice of activity for the remainder of the class period and permitting the use of personal stereos while running.

At School B, the Run for Your Life program consisted of the students running on their 1/4-mile all-weather track 1 day/week during the regularly scheduled physical education classes for the entire school year. All students were asked to jog/walk/run for at least four laps or 15 min each time they went out to run. During the runs, the physical education teachers recorded the number of laps for each student and posted them on the gym wall. The program set a goal of running 50 miles to achieve the gold level (average seven laps/run), 40 miles for the silver level (average five or six laps/run), and 30 miles for the bronze level (average four or five laps/run). At the end of the school year, students who achieved the gold level received a Run for Your Life T-shirt, and students who achieved the silver and bronze levels were awarded prizes such as notebooks and pens or pencils printed especially for the program.
Measures

**Demographics.** Students responded to questions relating to their age, gender, grade, school, ethnicity, and participation in after-school sports.

**Achievement Goal Orientations.** Students’ task and ego orientations were assessed using a 12-item questionnaire adapted from the Task and Ego Orientation in Sport Questionnaire (TEOSQ) (5). The TEOSQ has been successfully adapted in physical education studies and has yielded reliable and valid data (20,21). Questionnaire items were prefaced with the heading “I feel really successful in the Run for Your Life program when . . .” Students rated each item on a 5-point scale (No, no, ?, yes, Yes), with the two extreme options printed in bolder type (1 = No to 5 = Yes). This response scale has been successfully used in previous research with fourth graders in running (21). The six items constituting the task goal orientation scale were “I do my very best,” “Something I learn makes me want to go and practice more,” “Something I do really feels right,” “I learn something new and it makes me want to practice more,” “I learn something new by trying hard,” and “I learn something that is fun to do.” The six items from the ego goal orientation scale were “I run faster than other children,” “I am the only one who can run the most laps,” “The other children cannot run as well as me,” “I can run better than my friends,” “Other children mess up and I don’t,” and “I am the only one who received the best award.” An average score was computed for each scale. Cronbach alpha coefficients for the scales of task and ego goal orientations were both .82.

**Expectancy Beliefs.** This construct was assessed by asking five questions adapted from the Xiang, McBride, and Bruene study (21) using a 5-point Likert scale. The five questions addressed students’ perceived ability and expectancies for success in the Run for Your Life program. They were “How good at Run for Your Life are you?” (1 = very bad to 5 = very good), “If you were to list all the students from the worst to the best in the running program, where would you put yourself?” (1 = one of the worst to 5 = one of the best), “Some kids are better in one subject than in another. For example, you might be better in math than in reading. Compared to your other physical activities in physical education, how good are you at Run for Your Life?” (1 = a lot worse in Run for Your Life to 5 = a lot better in Run for Your Life), “How well do you think you will do in Run for Your Life this year?” (1 = very bad to 5 = very well), and “How good would you be at Run for Your Life?” (1 = very bad to 5 = very well). Responses were averaged to form a score for expectancy beliefs, with a high score indicating a high level of expectancy beliefs and a low score indicating a low level of expectancy beliefs. The Cronbach alpha coefficient of this scale was .89.

**Importance, Interest, and Usefulness.** The three task values of importance, interest, and usefulness were each assessed by asking two questions using a 5-point Likert scale. Adapted from the Xiang, McBride, and Bruene study (21), the questions were (a) “For me, being good at Run for Your Life is . . .” (1 = not very important to 5 = very important); (b) “Compared to your other physical activities in physical education, how important is it to you to be good at Run for Your Life?” (1 = not very important to 5 = very important); (c) “In general, I find Run for Your Life . . .”
(1 = “way” boring to 5 = “way” fun); (d) “How much do you like Run for Your Life?” (1 = don’t like it at all to 5 = like it very much); (e) “Some things that you learn in school help you do things better outside of class. We call this being useful. For example, learning about plants might help you grow a garden. In general, how useful is what you learn in Run for Your Life?” (1 = not useful at all to 5 = very useful); and (f) “Compared to your other physical activities in physical education, how useful is what you learn in Run for Your Life?” (1 = not useful at all to 5 = very useful). Questions (a) and (b) assessed importance, questions (c) and (d) assessed interest, and questions (e) and (f) assessed usefulness. Responses were averaged to form a score for importance, interest, and usefulness. A high score indicates a high level of the three variables and a low score indicates a low level of the three variables. Cronbach alpha coefficients for the scales of importance, interest, and usefulness were .75, .93, and .78, respectively.

**Intention for Future Participation in Running.** This construct was assessed with two questions. They were also adapted from the Xiang, McBride, and Bruene study (21) and included, “If every Friday in your physical education class is a free activity day, would you choose to do running activities at all?” and “The Run for Your Life program in your physical education class will continue next year. If you have a choice whether you want to participate in it, how much would you like to do it again?” Response scores ranged from 1 = not at all to 5 = very much. Responses were averaged to form a score for the measure, with a high score indicating a high level of intention and a low score indicating a low level of intention. The Cronbach alpha coefficient of this scale was .75.

**Running Performance.** A timed 1-mile run allowed us to assess children’s performance in running. The 1-mile-run test has historically been used as a measure of cardiovascular performance in fitness-test programs such as the President’s Challenge and Fitnessgram. Times were recorded in minutes and seconds for each individual student. All students were encouraged to put forth their best effort and run as fast as they could in the test.

As mentioned previously, the self-report measures of expectancy beliefs, task values (importance, interest, usefulness), and intention for future participation in running were adapted from those of the Xiang, McBride, and Bruene study (21). Their study established reliability and validity of scores with confirmatory factor analysis. For a more detailed report on the psychometrics of these measures, see (21).

**Data Collection and Analysis**

Data were collected by the researchers during the participants’ regularly scheduled physical education classes. Near the end of the running programs (i.e., early May) the questionnaires were administered by the researchers, without the physical education teachers’ present. Each item was read aloud to the students. Students were encouraged to ask questions if they had difficulty understanding instructions or questionnaire items. No questions were raised by the students while they completed the questionnaires, which took approximately 30 min to administer.
The 1-mile run was administered to the students by the physical education teachers with assistance from the researchers. The students ran 1 mile during their regularly scheduled physical education classes a week after they completed the questionnaires. They ran as a whole class but were timed individually in minutes and seconds. For students at both schools, the test took place on the same track where they performed their daily or weekly runs.

Analysis of the data proceeded in three steps. First, as a preliminary analysis, a one-way multivariate analysis of variance (MANOVA) was conducted to determine if students at School A and School B would differ in achievement goal orientations. The results of the preliminary analysis would provide a basis as to whether the data from the two schools should be combined for subsequent analyses based on the similar achievement goal orientations. Second, after descriptive analyses, a two-stage cluster analysis was conducted to identify how the students were classified with the task and ego orientation scores. The two goal orientation variables were inspected for univariate normality. Three outliers were detected in the data and were deleted before further data analysis was conducted. No special pattern was noticed in the missing data (32 cases) on the task and ego orientations. Thus, 498 participants’ data were used in the cluster analysis. Similar to the procedure used by Harwood, Cumming, and Hall (8) and Wang and Biddle (17), the task and ego groups were generated through the two-stage cluster analysis.

Stage 1. A hierarchical cluster analysis with the Ward method of linkage was conducted for identifying the initial partitions of the data. The Ward method of linkage has been reported as an effective way to minimize within-cluster differences and to avoid problems with forming long, snakelike chains (2,8). Similar to the Harwood, Cumming, and Hall study (8), the squared Euclidean distance was used as a similarity measure. Examination of the dendogram suggested that the initial cluster solution best fit the data, and the cluster centers were saved in a file. The cluster centers derived from the hierarchical cluster analysis were used as the seed points in the Stage 2 analysis.

Stage 2. K-means cluster analysis was used as a validation process to confirm the clusters derived from the Stage 1 analysis. The four cluster centers derived from the hierarchical cluster analysis were used as the seed points to start the iteration of the K-means cluster analysis, which created the new groups that minimized within-cluster variability and maximized between-cluster variability. An unseeded K-means cluster analysis was performed to confirm the reliability of the cluster solutions by comparing the cluster sizes and classification scores. After the final clusters were selected, the cluster membership of each subject was saved in the original data file for subsequent analyses.

Finally, another one-way MANOVA was conducted to examine differences among the four goal orientation patterns in motivational outcomes, with the goal orientation patterns (low task/low ego, low task/high ego, high task/low ego, and high task/high ego) as independent variables and expectancy beliefs, task values (importance, interest, usefulness), intention for future participation in running, and 1-mile-run time as dependent variables. When the MANOVA yielded a main effect on goal orientation patterns, follow-up ANOVAs and post hoc tests using Tukey’s honestly significance difference (HSD) were applied.
Results

Preliminary Analysis

Although the results of the MANOVA revealed significant differences in achievement goal orientations between School A and School B, Wilk’s $\Lambda = .984$, $F(2, 498) = 3.924$, $p = .02$, the $\eta^2$ was low (.016). Given the low power of the MANOVA results, the significance might have no practical importance in terms of difference. Furthermore, the follow-up univariate $F$ tests indicated that there was no significant school effect on task orientation, $F(1, 499) = 3.604$, $p = .058$, or ego orientation, $F(1, 499) = 3.719$, $p = .054$. These results indicate that there were no practical differences in the achievement goal orientations between the two school populations. Consequently, the data from the two schools were combined for the subsequent analyses.

Descriptive Statistics and Correlations

The means, standard deviations, and simple correlations among variables are presented in Table 1. The data indicate that the participants in this study displayed mixed motivational responses about the running programs. The mean scores of task orientation, expectancy beliefs, importance, and usefulness were above the midpoint of the scale (i.e., 3), suggesting positive motivational responses. The mean scores of intention for future participation in running and interest, on the other hand, were below the midpoint of the scale (see Table 1), indicating negative responses. Some students might have preferred running outside of their school settings, even if their scores on intention for future participation in running were low. We cannot be sure of this possibility because the intention measures that were used asked only whether students would like to participate in the Run for Your Life program again or run during

<table>
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<th></th>
<th>M</th>
<th>SD</th>
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<th>4</th>
<th>5</th>
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<td>.10*</td>
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<td>.12**</td>
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<td>.30**</td>
<td>.46**</td>
<td>.47**</td>
<td>.54**</td>
<td>.46**</td>
<td>.13**</td>
</tr>
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<td>3</td>
<td>Expectancy beliefs</td>
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<td>—</td>
<td>.43**</td>
<td>.56**</td>
<td>.36**</td>
<td>.53**</td>
<td>.50**</td>
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</tr>
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<td>.59**</td>
<td>.48**</td>
<td>.18**</td>
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<td>5</td>
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<td>—</td>
<td>.49**</td>
<td>.81**</td>
<td>.36**</td>
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<td>.50**</td>
<td>.17</td>
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<td>1.17</td>
<td>—</td>
<td>.34**</td>
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</table>

*aOne-mile run was timed in minutes. A lower score indicated higher performance. Consequently, correlations of the 1-mile run with other motivational variables were all negative, but this article reports negative correlations with scores on the 1-mile run as positive to be consistent with the research literature.

*p < .05. **p < .01.
a free physical education period. The measures did not ask whether or not students actually planned to run outside of physical education classes in the future.

As seen in Table 1, task orientation was not significantly correlated with ego orientation, confirming their independence as constructs. As a result, we deemed it appropriate to examine goal-orientation patterns among students. Expectancy beliefs and three task values (importance, interest, usefulness) were significantly correlated with one another and significantly related to students’ task orientations, intentions for future participation in running, and 1-mile-run performances. Finally, students’ intentions for future participation in running were significantly related to their 1-mile run performances.

**Cluster Analysis**

The examination of the dendogram in the hierarchical cluster analysis showed that a four-cluster solution best fit the data. Based on the conceptual issues and empirical findings in the literature, the four-cluster solution supported the four goal orientation pattern groups (low task/low ego, low task/high ego, high task/low ego, and high task/high ego). The four-cluster solution was again determined to be the best fit using the K-means cluster analysis. The following procedures were followed to confirm the four-cluster solution as the best fit: Convergence was achieved after only four iterations, reliability of the four-cluster solution was confirmed by running the second K-means cluster analysis with random initial seed points, and in checking the profiles and the size of the clusters, the four-cluster solution was the most stable compared with the other solutions.

The criterion z score of ±.5 was used (8) to explain the goal pattern groups as being high or low relative to each other on the two goal orientations. Table 2 reveals the means, standard deviations, and standardized scores for the four clusters. Cluster 1 contained the students with a low-task/low-ego pattern (n = 100), Cluster 2 contained students with a low-task/high-ego pattern (n = 107), Cluster 3 contained students with a high-task/low-ego pattern (n = 197), and Cluster 4 contained the students with a high-task/high-ego pattern (n = 94).

**MANOVA**

The means and standard deviations of expectancy beliefs, task values, intention for future participation in running, and 1-mile-run performance for the four goal orientation pattern groups are presented in Table 3. The MANOVA revealed a
significant main effect for goal orientation pattern groups, Wilks’s Λ = .736, F(18, 1284) = 8.16, p < .0001, η² = .097. Follow-up ANOVAs revealed that there was a significant goal orientation pattern group effect on all the dependent variables (p < .001). Post hoc tests indicated that students in the low-task/low-ego group reported lower mean scores for expectancy beliefs than students in the three other goal groups did. Although students in the high-task/high-ego and high-task/low-ego groups reported higher mean scores than students in the low-task/low-ego group did, no differences were found between students in the high-task/low-ego and high-task/high-ego groups. For importance, interest, usefulness, and intention for future participation in running, students in the high-task/low-ego and high-task/high-ego groups reported higher mean scores than students in the low-task/low-ego group did, no differences were found between students in the low-task/low-ego and low-task/high-ego groups. Finally, on the timed 1-mile run students in the high-task/high-ego group performed better than students in the low-task/low-ego group. No differences were found among students in the low-task/low-ego, low-task/high-ego, and high-task/low-ego groups.

### Discussion

This study examined goal orientation patterns and their impact on fifth graders’ motivational beliefs and outcomes in physical education running programs. Fifth graders are approaching the age when many begin understanding the distinction between ability and effort and are formulating their dispositional goal orientations. Because of this developmental characteristic, probably not all children in the present study completely understood the relationship between ability and effort, which might have influenced their goal orientations and resulting motivational responses. Therefore, the reader should keep this in mind when interpreting the results of this study.

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**Table 3** Means and Standard Deviations of Motivational Variables for Achievement Goal Orientation Pattern Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Expectancy</th>
<th>Importance</th>
<th>Interest</th>
<th>Usefulness</th>
<th>Intention</th>
<th>1-Mile Run</th>
</tr>
</thead>
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<td>M</td>
<td>SD</td>
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<td>SD</td>
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<tr>
<td>Low task/low ego</td>
<td>3.28a</td>
<td>0.80</td>
<td>3.15a</td>
<td>1.10</td>
<td>2.29a</td>
<td>1.10</td>
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<tr>
<td>Low task/high ego</td>
<td>3.65b</td>
<td>0.81</td>
<td>3.28a</td>
<td>1.00</td>
<td>2.40a</td>
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<tr>
<td>High task/low ego</td>
<td>3.83c</td>
<td>0.74</td>
<td>3.91b</td>
<td>0.79</td>
<td>3.30b</td>
<td>1.17</td>
</tr>
<tr>
<td>High task/high ego</td>
<td>3.99c</td>
<td>0.82</td>
<td>4.09b</td>
<td>0.80</td>
<td>3.45b</td>
<td>1.23</td>
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*Note.* Means in each column having a common alphabetical-character superscript are not significantly different at the .05 level.


One purpose of the present study was to identify goal orientation patterns and assess their distribution. The cluster analysis identified four distinct goal orientation patterns (i.e., low task/low ego, low task/high ego, high task/low ego, and high task/high ego) among fifth graders in running. This result provides empirical support for the theoretical assumption (10) that task and ego orientations are independent and, thus, are able to combine to form four patterns. It is also consistent with Pintrich’s (11) view that students can take multiple goal orientations simultaneously when approaching achievement activities. Among this sample of fifth graders, 58% were in the high-task/low-ego and high-task/high-ego groups. This is encouraging given that both the high-task/low-ego and high-task/high-ego patterns have been found to be motivationally adaptive (7,11). Students who are motivationally adaptive work hard, persist in the face of difficulty, and believe that success is a result of effort.

Students in the low-task/low-ego group made up 20% of our sample and reported less positive motivational outcomes in running. In their study of achievement goal orientations among fifth and sixth graders in science, Meece and Holt (9) observed that 27% of their sample were low on both task and ego orientations. Taken together, these findings suggest that perhaps teachers in all content areas are likely to encounter students with these goal orientation patterns in their classrooms. It is important to note that students in this group also scored lowest on expectancy beliefs about running. Numerous researchers (3,6,10,19,21,23) have demonstrated that expectancy beliefs play a central role in children’s achievement motivation and influence their behavior and learning. Students who possess low expectancy beliefs are more likely to be less motivated and achieve less than their counterparts who possess high expectancy beliefs. Students who were low on both task and ego orientations and possessed low expectancy beliefs could be at greater risk for being unmotivated than students in the other groups. Given that one goal of physical education is to encourage all students to engage in physical activity and adopt healthy, active lifestyles, it is imperative that we identify ways to motivate a broad array of achievement goal oriented students so that they will want to engage in regular physical activity.

The second purpose of the present study was to examine the impact of the four goal orientation patterns on students’ expectancy beliefs, task values (importance, interest, usefulness), intentions for future participation in running, and 1-mile-run times. Results revealed that, similar to the high-task/low-ego group, the high-task/high-ego group demonstrated more positive motivational outcomes than the low-task/low-ego and low-task/high-ego groups. Students in this group tended to report higher scores on expectancy beliefs; considered running in physical education more important, interesting, and useful; displayed a stronger intention for future participation in running; and performed better on the 1-mile run. This finding is not only consistent with previous research (7,18) but also provides additional empirical support for the argument that a high ego orientation might not be necessarily detrimental to motivation and behavior when coupled with a high task orientation (7,11,18).

Another important finding was that the low-task/high-ego group scored significantly lower on expectancy beliefs, task values, and intentions for future running participation than the high-task/low-ego group. Although both groups demonstrated the same level of running competence, this result suggests that
being mediocre (i.e., low task orientation) combined with defining success as outperforming others is less motivationally adaptive. It also offers empirical evidence that the interaction between how individuals define success and how they perform in relation to other people has predictive ability for motivational outcomes.

Consistent with other research on the four goal orientation patterns (7,15), our findings revealed several beneficial effects of high task orientation. Specifically, students in the high-task orientation groups (i.e., high task/low ego and high task/high ego) held more positive values for running and showed a stronger intention for future participation than students in the low-task orientation groups (i.e., low task/low ego and low task/high ego). These findings, coupled with the previous finding that the high-task/low-ego group was more motivationally adaptive than the high-ego/low-task group, as well as other research, reinforce task orientation as a central determinant of students’ motivation and achievement in physical activity settings. Given this, it would appear that promoting task orientation among students should become a high priority of teaching in physical education. Suggested instructional practices and strategies to promote task orientation might include defining success in terms of mastering the task rather than in terms of outperforming others in the class, emphasizing the learning process and participation, recognizing individual accomplishments, and evaluating students on mastery and skill development rather than ability.

In conclusion, the present study examined achievement goal orientation patterns and their impact on fifth graders’ motivational outcomes in running. The results provided empirical support for four patterns of achievement goal orientations proposed by the theory. These four goal orientation patterns in turn revealed differential effects on students’ motivational outcomes in running. Students in the high-task/low-ego and high-task/high-ego groups demonstrated more positive motivational outcomes than those in the low-task/low-ego and low-task/high-ego groups. High task orientation has again been demonstrated to be central to students’ motivational outcomes in physical activity. Promoting task orientation should become a high priority of teaching in physical activity settings.

References