Achievement Goals and Motivational Climates for Physical Education.

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ACHIEVEMENT GOALS AND MOTIVATIONAL CLIMATES FOR PHYSICAL EDUCATION

A Dissertation
Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in
The Department of Kinesiology

by
Jerry W. Boone
B.A., Southeastern Louisiana University, 1969
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May, 1995
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ABSTRACT

The focus of this study was the examination of relationships of dispositional goal orientations and perceived motivational climates to learning strategies, attributions for causes of success, practice patterns, and achievement. The study also examined the effects of an intervention designed to implement mastery focused strategies in physical education. Specifically, the research questions addressed were: a) How do students’ dispositional goal orientations relate to the perceived motivational climate in physical education classes? b) How do students’ goal orientations and the perceived motivational climate relate to attributions for success and learning strategies employed in a physical education class? c) Are practice patterns different in task-involved and ego-involved climates in physical education? d) What effect does the implementation of a task-involved environment in physical education class have on achievement? and e) Can the perceptions of a task-involved climate in physical education classes be enhanced by the implementation of task-involved teaching strategies? Middle school students (268) from nine intact physical education classes participated in a three week instructional unit in badminton. The classes were assigned to one of two different conditions; 1) a normal class routine and 2) a task-involved climate. Prior to the instructional unit, the students completed a Perceived Motivational Climate in Physical Education questionnaire and a skill pretest on the badminton short serve. During the unit, practice data were collected and students completed cognitive questionnaires to gather information about goal orientation, attributional thoughts, and learning
strategies. Following the unit, all students were posttested and completed the Perceived Motivational Climate in PE questionnaire again. The results suggest that a task-involved goal perspective produces a more efficient learning context while an ego-involved goal perspective might hinder the learning experience. While all students improved the skill test scores, the students in the task-involved classes improved at a greater rate. Finally, perceptions of task-involved climates were enhanced by verbal strategies used by teachers in the task-involved condition.
INTRODUCTION

A contemporary approach in the study of motivation has been to examine the goal perspective of individuals as it relates to achievement. Goal perspective refers to a primary goal or focus of behavior in a learning context and is believed to be linked to achievement outcomes. The goal perspective from which an individual approaches a task has been identified as a mediating variable in the study of the teaching-learning process. A major assumption of this approach is that individuals act to demonstrate competence or ability in achievement contexts (Dweck, 1986; Nicholls, 1989); however, the perspective of this goal to demonstrate competence or ability may be different. Two dimensions of goal perspectives have emerged consistently in extensive investigation both in academic and sport settings. The terms task-involvement and ego-involvement have been used by Nicholls (1979, 1984) to describe these dimensions and are closely related to how students assess their levels of competence in particular situations.

When the development or demonstration of ability is primarily a function of meeting self-imposed standards, a goal of learning or mastery is considered important and a state of task-involvement prevails (Nicholls, 1984). Goals focus on mastering a skill or task, and the criterion for success is self-referenced. Success or failure in a task is determined by whether one mastered, learned, or improved on a task.

When the perception of ability is referenced according to the performance of others, a goal of demonstrating superior ability to others is developed and a state of ego-involvement prevails (Nicholls, 1984). The criteria for success or failure
in a task is normative and based on comparison to the performance of relevant others. In this case, improving performance through effort is not enough to imply competence and a learner could still perceive failure because of social comparison.

The influence that a task-involved or ego-involved goal perspective has on students' cognitions and behaviors has been studied in various achievement contexts. For example, research has found that student goal perspective is related to patterns of learning behaviors, such as the use of effective learning strategies, beliefs about causes of success, persistence in practice, and positive affective thought. Learning strategies have been defined as procedures used to enhance the acquisition, retention, and transfer of information and skills (Wittrock, 1990). Adaptive learning behaviors enable students to process information, plan study and practice activities, monitor effort and concentration, and regulate time (Ames & Archer, 1988).

Another variable used extensively in academic and sport settings relates to attribution theory. In achievement contexts individuals analyze causal factors and attribute certain factors as causes of success. The theory focuses on why people expect to succeed (Dweck & Elliot, 1983). The belief that motivation and effort cause success is an example of an adaptive attributional pattern, while beliefs that ability, deception (e.g. cheating, pretending to like the teacher), and or external factors beyond one's control cause success are maladaptive attributional patterns.

The variable of practice time has not been widely investigated from a goal perspective approach. While the impact that correct practice has on achievement is clear (Ashy, Lee, & Landin, 1988; Buck, Harrison, & Bryce, 1991; Silverman, 1985,
1990), it is also apparent that there is much variation in the number of trials individual students execute within the same instructional setting (Silverman, 1990; Solmon, 1991). This variation in persistence in practice may be reflected in their motivational beliefs. Theoretical predictions from goal perspective research suggest that students with a task-involved perspective would be more persistent in practice.

One approach used by researchers to gain information about practice variability among students has been to study students' thoughts during instruction. The investigation of student thoughts has been recognized as a viable way to learn more about students' perceptions and learning strategies (Solmon, 1991). The thoughts of students during instruction or practice can reflect a state of task or ego-involvement.

The investigation of goal perspective has generally employed three approaches: 1) examination of the dispositional goal orientation of the subjects; 2) investigation of the perception of environments as either ego-involved or task-involved; and 3) intervening in a situation to enhance or produce task-involvement. The evidence from this line of inquiry regardless of the approach employed indicates a link between goal perspective and achievement related cognitions and behaviors.

**Dispositional Goal Orientation**

The examination of subjects' dispositional goal orientation typically involves analyzing relationships between goal perspective and variables which affect learning and performance. In the academic classroom, task orientation relates to more positive attitudes, improved performance, and adaptive behavioral patterns such as
choosing challenging tasks, focusing on effort, and persistence in the face of difficulty. Ego orientation is associated with more negative attitudes, impaired performance, and maladaptive behavioral patterns such as choice of extremely hard or easy tasks to avoid challenge, giving up in the face of difficulty, and withdrawal of effort (Butler, 1987; Dweck, 1986; Dweck & Leggett, 1988; Nicholls, 1972; Nicholls, Patashnick, & Nolen, 1989). Similar relationships are seen in sport settings with task orientation being positively related to socially desirable attitudes, while negative or undesirable attitudes have been associated with ego-involvement (Duda, 1989; Duda, Olson, & Templin, 1991; Siefriz, Duda, & Chi, 1992; Walling, Crawford, Duda, & Wigglesworth, 1992;). Sport participants with a task orientation also exhibit more persistence in the face of difficulty (Ewing, 1981; Duda, 1989) and focus on effort rather than ability as a cause of success (Duda, 1988; Duda, Smart, & Tappe, 1989; White & Duda, 1993). While few correlational studies have focused specifically on the relationship of task and ego orientation to performance, several sport studies have reported impaired sport performance in relationship to ego orientation (Vealey & Campbell, 1988; Duda, Newton, & Chi, 1990; Newton & Duda, 1993). This impairment of performance is attributed to the anxiety of possible failure to demonstrate competence in relationship to others. Based on these and other investigations, task orientation is believed to have a more positive effect on learning and performance.

While the research in physical education classes is still in its early stages, since the physical education environment incorporates features from both academic
classrooms and sport settings, similar findings are to be expected. For example, in a field-based investigation of the impact of goal perspective in physical education classes, Solmon and Boone (1993) reported results consistent with previous work in both academic and sport settings. Students that were task oriented reported positive attitudes about class, selected more challenging tasks, and made more effective use of learning strategies. Conversely, students with an ego orientation reported less positive attitudes, selected less challenging tasks, and did not make as effective use of learning strategies. In a later study examining the relationship between goal perspective and attributions for causes of success in physical education, a strong relationship was found between task orientation and the belief that success in physical education is caused by motivation and effort (Solmon & Boone, 1994). Students that were ego oriented tended to believe that success in physical education was the result of ability.

**Perceived Motivational Climate**

In addition to the investigation of the effect of an individual's dispositional goal orientation, the perception of a specific environment as either task-involved or ego-involved has also been studied. This construct has been assessed through the use of questionnaires designed to report perceptions of the motivational environment, in both academic (Ames & Archer, 1988; Graham & Golan, 1991) and sport settings (Seifriz, Duda, & Chi, 1992; Walling, Duda, & Chi, 1993). Findings indicate that the relationships found in investigations of dispositional goal orientations hold true when the perceived motivational climate is considered.
For example, a study of high school students by Ames & Archer (1988) has established the relationship between a field setting that was perceived as being mastery oriented and adaptive motivational patterns. A follow-up study of the same students by Ames & Archer (1990) established a strong relationship in the use of effective strategies and positive attitudes exhibited with the number of years students perceived the climate as mastery oriented. Students' use of effective strategies, preference for challenging tasks, positive attitudes, and positive attributions for success were all found to covary with changes in a mastery climate (Ames, 1992). In studies of elementary school children (Ames & Maehr, 1989; Powell, 1990), similar results are found on a consistent basis even across different classifications (e.g. at-risk students).

Relationships between perceptions of a task or ego involved climate and several variables have been found in sport settings. Two studies (Seifriz et al., 1992; Walling et al., 1993) have reported that perceptions of a task-involved climate are associated with greater reported exerted effort, greater enjoyment, greater satisfaction with one's team, lower performance worry, and the belief that success comes as a result of trying hard. Perceptions of an ego-involved climate were associated with greater levels of worry, less satisfaction with one's team, and the belief that success is caused by ability.

Based on research by Ryan & Grolnick (1986), it appears that students' perceptions of a climate are influenced by a number of factors, one of which is the dispositional goal orientation. At least two studies have shown that students with a
task-mastery orientation are more likely to perceive a mastery climate while students with an ego-involved orientation are more likely to perceive a performance oriented climate (Seifriz et al, 1992; Solmon & Boone, 1994).

There is evidence that task-involved students exhibit an adaptive pattern of learning. It is less clear from research available what role the teacher plays in promoting task-involvement. The research to this point has been primarily correlational in nature, and causal relationships between students' perceptions of task-involvement and dependent variables can only be inferred. Early indications are that task-involved climates may be produced or enhanced when appropriate strategies are used by the teacher (Ames & Maehr, 1989; Ames & Archer, 1990). While the ethical concerns of creating an ego-involved climate are open to debate, the possibility of enhancing task-involved climates with the inherent benefits in school settings is important to the educator. Ames (1992) has identified a need to focus on the context in which the different goal perspectives are developed, and to look at how the structure and influence of an achievement environment can result in different goal perspectives. The environment should produce the desired changes in motivation when characteristics and teaching strategies in a class are identified and used that will make a task mastery climate salient to the students. In the academic classroom, a mastery climate has been described as one where the teacher provides instructional support, realistic but challenging goals, and encourages effort (Corno & Rohrke, 1985). Ames (1993) suggests a focus on six areas of the classroom learning environment where emphasis can be placed on a task-involved climate.
Epstein (1989) has identified these areas as task design, distribution of authority, recognition of students, grouping arrangements, evaluation procedures, and time allocation. The acronym TARGET is used to represent and call attention to them.

In developing the motivational climate of a class, it is important to develop a general plan for teachers to deliberately institute strategies that help students acquire adaptive methods and standards of analyzing their own study activity and motivation. The organization of these strategies is enhanced by the use of the TARGET structure.

The climate of a physical education class presents a special challenge in developing a salient task-involved climate. In a recent study comparing the perceived motivational climate of physical education classes with academic classrooms, physical education classes were found to be more ego-involved and less task-involved than an academic classroom (Solmon & Boone, 1994). In a physical education class, performance and evaluation are often open to the view of other students, making social comparison unavoidable.

The research completed to date, which has been conducted in academic classrooms and competitive sports settings, suggests a relationship between a student’s goal orientation and their perception of a motivational climate. With the exception of the research by Solmon & Boone (1993), none of the studies has investigated the motivational aspects of learning in physical education classes, and this study was conducted with a relatively small sample of college-aged students and was limited to dispositional goal orientations impact on learning strategies and performance. The present study examined the relationships of dispositional goal
orientations and perceived motivational climates with learning strategies, attributions for causes of success, practice patterns, and achievement. The study also examined an effort to produce a task-involved climate in physical education classes and the impact of the climate on perceptions of students, practice patterns, student thoughts, and achievement on skill tests. Specific research questions addressed in this study include:

a) How do students’ dispositional goal orientations relate to the perceived motivational climate in physical education classes?

b) How do students’ goal orientations and the perceived motivational climate relate to attributions for success and learning strategies employed in a physical education class?

c) Are practice patterns different in task-involved and ego-involved climates in physical education?

d) What effect does the implementation of a task-involved environment in physical education class have on achievement?

e) Can the perceptions of a task-involved climate in physical education classes be enhanced by the implementation of task-involved teaching strategies?
METHODS

Subjects

The subjects for this study were 132 male and 136 female students from middle schools located in four counties in a southeastern state. Nine intact regular physical education classes were used for the study. Signed parental permission was obtained from each student.

The classes, taught by nine different volunteer teachers, seven males and two females, were assigned to one of two different conditions; 1) a normal class routine and 2) a task-involved climate. The teaching experience of these instructors ranged from four to twenty-eight years, with an average of fifteen years. Each teacher also coached at least one varsity sport.

Practice and Achievement Measures

Skill Test. The French Short Serve Test (Safrit, 1990) was administered to assess the badminton short serve skill level of the subjects. The literature reports a validity coefficient of .66, using a criterion measure of ladder tournament rankings. Reliability of the test in the current study was determined using the split-half reliability estimate. The reliability coefficient for half of the test was .67, while the reliability of the full test, using the Spearman-Brown prophecy formula, was .81.

Specific instructions for this test are available from the researcher.

Practice Trial Reports. In each class a station to practice the short serve against the wall was established. A line was taped on the floor six feet six inches from the wall to represent the service line. Another line was taped on the wall five
feet from the floor or the height of the net. A third line was taped on the wall 20 inches above the line representing the net. Students rotated to practice the short serve for five minute time periods. A practice trial was defined as a legal attempt to execute the short serve. A successful trial was defined as a serve that struck the wall between the line representing the net and line 20 inches above the net.

**Measures of Motivational Beliefs and Cognitive Processes**

The Task and Ego Orientation in Sport Questionnaire. Students completed the Task and Ego Orientation in Sport Questionnaire (TEOSQ), developed by Duda and Nicholls (1989). This instrument consists of 13 items comprising two orthogonal scales. Subjects responded to the statement "I feel most successful in PE when..." for items reflecting task and ego oriented criteria. The subjects indicated their level of agreement on a five point Likert scale (1=strongly disagree, 5=strongly agree). In summarizing the results of research employing this instrument, Duda (1992) reports evidence to support both the internal consistency (alpha=.81 - .86 for the task scale and .79 - .90 for the ego scale) and test-retest reliability (r=.68 for the task scale and .75 for the ego scale). In the present study, the Cronbach alpha reliability coefficients for the task and ego orientation scales were .82 and .83 respectively.

Perceived Motivational Climate in Physical Education. Each subject was asked to respond to the statement "IN MY PE CLASS..." for items reflecting task and ego-involved criteria (e.g. "outperforming classmates is important"). The 25 items on the questionnaire were adapted from the Perceived Motivational Climate in Sport Questionnaire developed by Seifriz, et al. (1992). A five point Likert scale
was used to determine the level of agreement with each statement (1=strongly disagree, 5=strongly agree). In the first response to this questionnaire the Cronbach alpha reliability coefficients were .61 for the task scale and .71 for the ego scale, while the second response coefficients were .69 and .71 for task and ego scales respectively.

**Beliefs about the Causes of Success Survey.** Subjects were asked to complete a survey indicating the reasons for success in physical education by responding to the statement "PEOPLE SUCCEED IN PE WHEN...". The 20 item questionnaire, generated from classroom-based and sport research (Nicholls et al., 1985; Nicholls, Cheung, Lauer, & Patashnick, 1989; Duda and Nicholls, 1992), reflected attributions for success that included motivation and effort, deception, and ability (e.g. 'they are more skilled than others'). A five point Likert scale was used to determine the level of agreement with each statement (1=strongly disagree, 5=strongly agree). The Cronbach alpha reliability coefficients for each sub-scale were .81 (motivation and effort), .71 (deception), and .52 (ability).

**Learning Strategies Inventory.** Subjects responded to a 40-item questionnaire generated in an earlier study to examine the relationship between goal perspective and cognitive processes affecting learning (Solmon & Boone, 1993). The instrument, designed to gather information from the student's perspective, focused on student understanding of instruction, use of strategies, levels of attention and motivation, and attitude toward class. Items were generated based on questionnaires and responses from stimulated-recall interviews in previous studies (Peterson, Swing, Stark, &
Waas, 1984; Solmon, 1991), and the examination of an instrument developed and validated for use in academic course work (Weinstein, Palmer, & Schulte, 1987).

Students indicated how well statements described themselves by selecting from the responses: 1) very much like me; 2) like me; 3) sorta like me; 4) little like me; or 5) not like me. In order to encourage subjects to carefully read and respond to each item and discourage production of socially desirable responses, the items were counterbalanced so that some were positively weighted for response one and others were positively weighted for response five. The Cronbach alpha reliability coefficient was .88 for the inventory.

**Student Thought Journal.** In order to obtain information about students' thought during the badminton unit, each student completed a short journal form answering questions about their thoughts during instructional or practice periods. Questions asked were:

1. What changes do you try to make when you are not successful in hitting the birdie?

2. When you are practicing the serve in badminton, what are you thinking about?

3. Is there anything you can do to make yourself a better badminton player? If so, what is it?

4. What do you like or dislike about the game of badminton?

**Identification of a Task-Involved Climate in Physical Education**

Preceding the badminton unit, physical education teachers from different levels were asked to read the definition of ego-involvement and task-involvement as
used by Nicholls (1984) and then respond with characteristics and strategies that would be found in each climate of a physical education class. Nine physical educators; four college professors, two middle school teachers, one graduate student, one student teacher, and one administrator responded to the survey. From these responses salient features of a task-involved climate in a physical education class were identified. Using Epstein’s (1989) TARGET structure, the responses were organized into areas of emphasis and included in lesson plans to be used in the task-involved condition. Points of emphasis used to emphasize a task-involved climate included:

1. Focus on improvement and learning new skills.
2. Give equal attention to everyone.
3. Give positive reinforcement for effort.
4. Encourage students to work on basic steps and keep trying.
5. Allow students to work at their own pace.
6. Encourage students to verbalize key concepts.
7. Stress improvement from last time.
8. Encourage form rather results.
9. Allow students to choose partners they are comfortable with.
10. Talk about doing the best one can.

Procedures

The length of the instructional unit on badminton skills was three weeks. Particular emphasis was placed on the short serve. All instruction in badminton was
provided by the cooperating teachers. The students in the study completed the Perceived Motivational Climate in Physical Education questionnaire (PMC1) a minimum of four weeks before the beginning of the study.

Each of the teachers completed the Task and Ego Orientation in Sport Questionnaire (TEOSQ) and an adapted Perceived Motivational Climate in Physical Education Questionnaire. After tape-recorded interviews with each of the teachers, those teachers that had the highest scores on the task sub-scales of the questionnaires and the most task-related responses in the interviews were assigned to the task-involved climate condition. Five of the teachers, three males and two females were assigned to the task-involved climate condition. The remaining four teachers were assigned to the normal routine condition. The teachers were not aware of the condition to which they were assigned, and teachers at the same school were asked not to discuss the study with one another other.

All of the teachers were given ten daily lesson plans to follow in teaching the badminton unit. All of the lesson plans contained the same skills to be taught, the correct points in technique to be emphasized, and suggested drills to be used. The plans differed in that the plans for the teachers in the task-involved condition contained points of emphasis on strategies to produce a task-involved climate. These plans also included strategies for closing the lesson in a state of task-involvement. In a preliminary briefing, the teachers in the task-involved condition were asked to place particular emphasis on verbalizing these points of emphasis throughout the unit. They were also encouraged to ask questions of the researcher during the unit if they
were unsure of the instructions. The researcher observed the classes on a daily basis, to ensure the plans were followed.

Students were pre-tested and post-tested for skill development in the short serve. The Task and Ego Orientation in Sport Questionnaire (TEOSQ) was administered in the second week of the study, and the Causes of Success Survey and Learning Strategies Inventory were administered in the third week of the study. The Perceived Motivational Climate in Physical Education Questionnaire (PMC2) was administered again on the final day of the study. At the end of four of the instructional periods, students completed the student thought journal.

Students rotated to practice the short serve at a practice station for five minute time periods. The researcher used this time to assess participation levels (e.g. number of practice trials) of each student. During the study each student was observed for a total of ten minutes.

**Data Analysis**

A correlation analysis was computed to determine relationships between each of the study variables. Residual gain scores on a badminton short serve skill test for each student were computed using a linear regression model in which the pre-test was the predictor variable and the post-test was the criterion variable. Stepwise multiple regression was used to determine whether goal orientation, perceived motivational climates, practice trials, or learning strategies were significant predictors of student achievement. Task orientation, ego orientation, task climate 1, ego climate 1, task climate 2, ego climate 2, successful trials, total trials, percentage of correct
trials, and learning strategies were entered as predictor variables. The residual gain scores were the criterion measure. The significance level for entry was set at .05.

A MANOVA was used to determine group differences in the learning strategies inventory, the perceived motivational climate, attributions for causes of success, participation levels, and dispositional goal orientations. A 2 X 2 ANOVA (condition by time) with repeated measures was used to assess condition differences in scores from pre to post-test.

A differential score was obtained by subtracting the scores on the ego scale from the task scale on the Perceived Motivational Climate in Physical Education questionnaire. This differential score represented the motivational climate of the class. Independent t-tests were used to determine differences in the differential scores of the groups on both responses to the questionnaire. Dependent t-tests were used to investigate changes in the motivational climates of the groups from the first administration of the questionnaire until the end of the instructional unit.

The student thought journals were analyzed qualitatively. The responses were indexed to present clearly defined categories. The first three questions answered by the subjects addressed their thoughts during instructional and practice time. Of interest were thoughts directed toward strategies used to improve badminton skills. Categories of related answers were developed (e.g. practice a certain skill, concentrate more, work harder, performance, winning a point) and frequency counts were made. These categories were narrowed to four general categories. These categories were responses that included: 1) task-involved characteristics;
2) ego-involved characteristics; 3) general statements; or 4) nonsensical statements. The inter-rater reliability coefficient for coding these responses was .91. Frequencies of each category by condition are presented as supportive data. The final question investigated attitudes held by the subjects as to whether they liked or disliked badminton. Responses were divided into three categories: 1) like; 2) dislike; or 3) neutral. Frequencies by each category are presented by condition.
RESULTS

Descriptive Statistics

Descriptive statistics for the variables in this study are found in Table 1. The means and standard deviations are presented for task condition, regular condition, as well as the total population of the study. The descriptive statistics reported for goal orientations are consistent with those reported in the literature. The ranges are for the total population. The wide range of scores found on the skill tests and number of practice trials accurately reflects the range of ability and effort found in a middle school physical education program.

Table 1. Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Task Cond. N Mean (SD)</th>
<th>Reg. Cond. N Mean (SD)</th>
<th>Total N Mean (SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Orientation</td>
<td>136 3.96 (.60)</td>
<td>128 3.69 (.82)</td>
<td>264 3.83 (.73)</td>
<td>1-5</td>
</tr>
<tr>
<td>Ego Orientation</td>
<td>136 2.53 (.81)</td>
<td>128 2.61 (.98)</td>
<td>264 2.57 (.73)</td>
<td>1-5</td>
</tr>
<tr>
<td>Task Climate 1</td>
<td>140 3.51 (.47)</td>
<td>128 3.58 (.49)</td>
<td>268 3.54 (.48)</td>
<td>1-5</td>
</tr>
<tr>
<td>Ego Climate 1</td>
<td>140 3.02 (.51)</td>
<td>128 3.14 (.56)</td>
<td>268 3.08 (.54)</td>
<td>1-5</td>
</tr>
<tr>
<td>Task Climate 2</td>
<td>140 3.60 (.51)</td>
<td>128 3.36 (.53)</td>
<td>268 3.48 (.53)</td>
<td>1-5</td>
</tr>
</tbody>
</table>

(table con'd.)
Correlational Analysis

Correlational analyses were used to examine the relationships between the measures of goal orientations, motivational climates, attributions for causes of success, learning strategies and practice and achievement patterns. These results are presented in Tables 2, 3, & 4.

Dispositional Goal Orientation and Perceived Motivational Climates. Task orientation was positively related to perceptions of a task-involved climate found in PMC1 ($r=.24$) and PMC2 ($r=.33$), but negatively related to perceptions of an
ego-involved climate in the PMC2 ($r= -.22$). Likewise, positive associations emerged between ego orientation and perceptions of an ego-involved climate in both responses (PMC1, $r= .36$; PMC2, $r= .34$), while negative associations emerged between ego orientation and perceptions of a task-involved climate for the same two responses (PMC1, $r = -.22$; PMC2, $r = -.19$). This pattern indicates that when students reported a task-involved goal, they were more likely to perceive an emphasis on mastery of tasks in the class. In contrast, students reporting an ego-involved goal were more likely to perceive a performance emphasis in the class (see Table 2).

Table 2
Intercorrelations of Goal Orientations and Perceived Motivational Climates

<table>
<thead>
<tr>
<th>Goal Orientations</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Task Orientation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Ego Orientation</td>
<td>-.28*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Motivational Climates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Task-Involvement 1</td>
<td>.24*</td>
<td>-.22*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Ego-Involvement 1</td>
<td>.14</td>
<td>.36**</td>
<td>-.41**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Task-Involvement 2</td>
<td>.33**</td>
<td>-.19*</td>
<td>.47**</td>
<td>-.24**</td>
<td></td>
</tr>
<tr>
<td>6. Ego-Involvement 2</td>
<td>-.22*</td>
<td>.34**</td>
<td>-.22*</td>
<td>.53**</td>
<td>-.29**</td>
</tr>
</tbody>
</table>

* - Probability < .001, ** - Probability < .0001

Beliefs about Causes of Success in Physical Education, the Use of Learning Strategies, and Goal Perspective. As shown in Table 3, a consistent pattern of relationships was found between students’ goal perspective and their beliefs about causes of success. Specifically, those students that reported a task oriented goal...
tended to believe that motivation and effort causes success in physical education \((r=.29)\). Similar relationships were found when students perceived an emphasis on task-mastery (PMC1, \(r=.33\); PMC2, \(r=.49\)). Further, students reporting a belief that motivation and effort caused success in physical education were more likely to report the use of effective learning strategies \((r=.49)\). Although not as strong, negative relationships were found between the belief that motivation and effort cause success in physical education and an ego-involved goal orientation \((r=-.18)\), as well as perceptions of an ego-structured climate (PMC1, \(r=-.18\); PMC2, \(r=-.31\)). Students reporting a belief motivation and effort caused success were less likely to attribute their success to ability and or deception. Motivation and effort attributions were negatively correlated with ability \((r=-.18)\) and deception \((r=-.46)\) attributions.

### Table 3
Intercorrelations of Beliefs About Causes of Success, Learning Strategies, and Goal Perspective.

<table>
<thead>
<tr>
<th></th>
<th>Motivation/Effort</th>
<th>Ability</th>
<th>Deception</th>
<th>Learning Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Orientation</td>
<td>.29***</td>
<td>-.28***</td>
<td>-.20**</td>
<td>.45***</td>
</tr>
<tr>
<td>Ego Orientation</td>
<td>-.18*</td>
<td>.38***</td>
<td>.38***</td>
<td>-.24***</td>
</tr>
<tr>
<td>Task Climate 1</td>
<td>.33***</td>
<td>-.19**</td>
<td>-.29***</td>
<td>.38***</td>
</tr>
<tr>
<td>Ego Climate 1</td>
<td>-.19**</td>
<td>.30***</td>
<td>.32***</td>
<td>-.23**</td>
</tr>
<tr>
<td>Task Climate 2</td>
<td>.49***</td>
<td>-.20**</td>
<td>-.35***</td>
<td>.47***</td>
</tr>
<tr>
<td>Ego Climate 2</td>
<td>-.31***</td>
<td>.35***</td>
<td>.45***</td>
<td>-.24**</td>
</tr>
<tr>
<td>Learning Strategies</td>
<td>.49***</td>
<td>-.20**</td>
<td>-.33***</td>
<td>----</td>
</tr>
</tbody>
</table>

* - Probability < .01, ** - Probability < .001, *** - Probability < .0001
Students with high ego scores were more likely to believe that ability ($r=.38$) and or the use of deception ($r=.31$) cause success in physical education. The perception that the possession of ability results in success was also linked to the perception of motivational climates with an emphasis on performance (PMC1, $r=.30$; PMC2, $r=.35$). Likewise when students perceived an emphasis on performance goals, they reported a belief that deceptive factors cause success (PMC1, $r=.32$; PMC2, $r=.45$). Finally, ability attributions for success were related to deception ($r=.43$).

In contrast, a very different pattern of associations is seen when students are task oriented or perceive task mastery climates. When students reported a task oriented goal or perceived an emphasis on task-mastery, they were less likely to attribute success to ability ($r=-.28$) and deception ($r=-.19$). Further, when students perceived an emphasis on task mastery they were less likely to attribute success to ability (PMC1, $r=-.19$; PMC2, $r=-.20$) and deception (PMC1, $r=-.29$; PMC2, $r=-.35$). In addition students’ use of learning strategies was negatively related to the belief that ability ($r=-.20$) and deception ($r=-.33$) cause success in physical education.

**Practice Trials and Achievement.** There were no significant relationships with any of the goal perspective self-reports and the pre or post-test scores. Residual gain scores were positively related to a perception of a task-involved climate in PMC2 ($r=.15$). A pattern of relationships did develop between practice trials and achievement measures. The pre-test scores on the short serve skills test were modestly related both to the total number of practice trials ($r=.21$) and the number of successful practice trials ($r=.30$). Stronger relationships emerged between
the post-test scores and total trials ($r=.47$) as well as successful trials ($r=.50$).

Students who had more total practice trials and were more successful tended to have higher residual gain scores ($r's=42, .42$). Students reporting the effective use of learning strategies had more successful practice trials ($r=.19$), more total trials ($r=.15$), and scored higher on the skill post-test (.15). These relationships are reported in Table 4.

**Table 4.** Intercorrelations of Practice and Achievement Measures

<table>
<thead>
<tr>
<th></th>
<th>Pre-Test</th>
<th>Post-Test</th>
<th>Residual Gain Scores</th>
<th>Successful Trials</th>
<th>Total Trials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Orientation</td>
<td>- .01</td>
<td>.07</td>
<td>.09</td>
<td>.08</td>
<td>.12</td>
</tr>
<tr>
<td>Ego Orientation</td>
<td>.11</td>
<td>.10</td>
<td>.06</td>
<td>-.07</td>
<td>-.07</td>
</tr>
<tr>
<td>Task Climate 1</td>
<td>.02</td>
<td>.03</td>
<td>.02</td>
<td>.00</td>
<td>.04</td>
</tr>
<tr>
<td>Ego Climate 1</td>
<td>-.08</td>
<td>-.12</td>
<td>-.09</td>
<td>-.08</td>
<td>-.11</td>
</tr>
<tr>
<td>Task Climate 2</td>
<td>-.04</td>
<td>.12</td>
<td>.15*</td>
<td>.12</td>
<td>.13</td>
</tr>
<tr>
<td>Ego Climate 2</td>
<td>-.03</td>
<td>-.11</td>
<td>-.10</td>
<td>-.11</td>
<td>-.11</td>
</tr>
<tr>
<td>Successful Trials</td>
<td>.30***</td>
<td>.50***</td>
<td>.42***</td>
<td>----</td>
<td>.86***</td>
</tr>
<tr>
<td>Total Trials</td>
<td>.21**</td>
<td>.47***</td>
<td>.42***</td>
<td>.86***</td>
<td>----</td>
</tr>
<tr>
<td>Learning Strategies</td>
<td>.06</td>
<td>.15*</td>
<td>.14</td>
<td>.19</td>
<td>.15*</td>
</tr>
</tbody>
</table>

* - Probability < .01, ** - Probability < .001, *** Probability < .0001
**Student Achievement**

In a multiple regression analysis with residual gain as the dependent measure, variables were entered using a Stepwise regression procedure. The total number of practice trials, the percentage of correct practice, the perception of a task oriented climate (PMC2), and an ego orientation were significant predictors of achievement (see Table 5). The total number of trials contributed the most to the prediction, followed by the percentage of correct trials, a perceived task climate (PMC2), and an ego goal orientation. Successful trials did not enter as a significant predictor. According to Pedhazur (1982), this may be explained by the fact that the two predictor variables, total trials ($r=.417$) and successful trials ($r=.416$), had almost identical correlations with the criterion variable as well as an extremely high correlation with each other ($r=.87$). Because total trials had a slightly higher correlation, it was entered into the regression. Successful trials, accounting for much of the variance, did not add to the prediction of variance and was left out of the regression.

**Table 5**
Predictors of Achievement in a Multiple Regression Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Change in $R$</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Practice Trials</td>
<td>.17</td>
<td>53.37</td>
<td>.0001</td>
</tr>
<tr>
<td>% Successful Trials</td>
<td>.02</td>
<td>4.79</td>
<td>.02</td>
</tr>
<tr>
<td>Task Climate Two</td>
<td>.01</td>
<td>3.90</td>
<td>.04</td>
</tr>
<tr>
<td>Ego Orientation</td>
<td>.01</td>
<td>4.45</td>
<td>.03</td>
</tr>
</tbody>
</table>
Task-Involved Condition versus Regular Condition

A multivariate analysis of variance (MANOVA) assessing group differences in beliefs about the causes of success, goal orientation, practice trials, motivational climates and learning strategies was not significant. A 2 X 2 ANOVA (condition by time) with repeated measures revealed a significant time F(1,7)= 117.06, p<.001, effect on pre and post-test scores reflecting overall improvement of both conditions. An investigation of a significant interaction between condition and time, F(1,7)=25.53, p<.001, revealed that while both conditions improved, the task-involved condition improved at a significantly greater rate (see Figure 1 on the following page).

Changes in Motivational Climate

An independent t-test on the differential scores of the first response of the Perceived Motivational Climate in Physical Education questionnaire revealed no difference (t=-.51, <.61) in the perceived climates of students in the two groups (task-involved and regular). An independent t-test of the differential scores on response two revealed a difference (t = -4.79, p< .0001) in the two groups. However, dependent t-tests revealed changes in the motivational climates of both groups. The differential scores of the task-involved condition were significantly different from response one to response two (t = 3.43, p< .0008) with a perception of a task-involved climate growing stronger. The differential scores of the regular condition were also significantly different in responses one and two (t = -2.99, p< .003) with the perception of a task-involved climate growing weaker.
Student Thought Questions

The answers to the student thought questions revealed that students in the regular condition had 50% of their answers to meet ego-involved criteria while 32% met task-involved criteria. Students in the task-involved condition had 48% task-involved responses and 36% ego-involved responses. Task-involved responses included working on a specific skill weakness, trying harder, or focusing
concentration, while ego-involved responses included those focusing on performance and winning or showing up an opponent (see Table 6).

Table 6
Frequency Counts and Percentages for Student Thought Questions 1, 2 & 3

<table>
<thead>
<tr>
<th></th>
<th>Ego-Involved</th>
<th>Task-Involved</th>
<th>General</th>
<th>Non-sensical</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Regular Condition</td>
<td>166 50%</td>
<td>105 32%</td>
<td>45 14%</td>
<td>17 5%</td>
<td>333</td>
</tr>
<tr>
<td>Task Condition</td>
<td>152 36%</td>
<td>203 48%</td>
<td>63 15%</td>
<td>4 1%</td>
<td>422</td>
</tr>
</tbody>
</table>

The fourth and final question investigated attitudes developed or held by the subjects. Responses fell into three general categories including: 1) dislike; 2) like; or 3) neutral. The students in the regular condition reported that 50% of them liked the sport of badminton while 68% of the task-involved students enjoyed participating in the sport (see Table 7).

Table 7
Frequency Counts and Percentages of Student Thought Question 4

<table>
<thead>
<tr>
<th></th>
<th>Like</th>
<th>Dislike</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N %</td>
<td>N %</td>
<td>N %</td>
</tr>
<tr>
<td>Regular</td>
<td>74 50%</td>
<td>66 44%</td>
<td>8 6%</td>
</tr>
<tr>
<td>Task</td>
<td>111 68%</td>
<td>45 27%</td>
<td>8 5%</td>
</tr>
</tbody>
</table>
DISCUSSION

The present study demonstrates that the range of goal perspectives found in academic classroom and sport settings (Duda & Nicholls, 1992) also exist in physical education classes. Moreover, the different states of involvement found in dispositional goal perspectives and perceived motivational climates reflect variations in students' beliefs about the causes of success, learning strategies employed in physical education classes, practice patterns during class, and student achievement.

The results are consistent with previous research evidence showing links between achievement goals, perceptions of a class environment, patterns of cognitions during class, beliefs about success, and performance. This study extends the initial research effort in physical education (Solmon & Boone, 1993) by examining perceptions of classrooms when the structure of the class was manipulated by the researcher. Students' dispositional goal orientations were consistent with their perceptions of the structure of the class as being task-involved or ego-involved. Task oriented students perceived a mastery-involved climate and performance oriented students perceived an ego-involved climate, supporting the notion that perceptions of environments might be influenced by dispositional goal orientation. The mastery oriented students were more likely to perceive that the teacher's focus was individual skill development. These findings extend results found in sport settings (Newton & Duda, 1993; Seifriz et al., 1992) and in physical education classes (Solmon & Boone, 1994) by showing links between task orientation and perceptions of a task-involved climate as well as ego orientation and perceptions of an ego-involved climate.
Of interest are the negative relationships between perceptions of task and ego climates, which have also been reported by other researchers (Solmon & Boone, 1994; Walling et. al., 1993). This suggests that students tend to perceive a climate as either mastery or performance oriented, rather than perceiving characteristics of both orientations as salient in the motivational climate. Thus while the structure and demands of a physical education learning environment can be perceived by students as being task-involved or ego-involved, students perceiving a task-involved climate seem to place less emphasis on the ego-involved elements of the same structure. There is some disagreement evident with regard to the relationship between dispositional goal perspectives. Dweck and her colleagues (Dweck, 1986; Dweck and Leggett, 1988) have characterized learning and performance orientations as bipolar, while Nicholls (1984, 1989) and Duda (1992) contend that task and ego orientations are independent or orthogonal constructs (i.e. an individual could be high in both task and ego involvement). The evidence here suggests that in regard to perception of climates, the construct of goal perspective is bipolar.

Task and ego perspectives, whether dispositional or perceived, showed different patterns of relationships with beliefs about the causes of success in physical education. Those students that were task-oriented or perceived a task-involved climate tended to believe that motivation and effort cause success. Ego-oriented students or those perceiving an ego-involved climate were more likely to focus on ability or deception as causes for success. These findings are supportive of research in academic classrooms (Nicholls et al. 1985, 1989, 1990; Thorkildsen, 1988) and
sport settings (Duda, Fox, Stuart, Biddle, & Armstrong, 1992; Duda & White, 1992; Newton & Duda, 1993; White & Duda, 1993; Lochbaum & Roberts, 1993; Treasure & Roberts, 1994) which show consistent links between attributional patterns and goal orientation. The findings of this study are consistent with research by Solmon & Boone (1994), providing further evidence that these relationships also exist in physical education classes. Students with a task-involved perspective emphasize the value of effort as a means of success while those with an ego-involved perspective downplay effort and emphasize their ability or their lack of ability as the cause of success or failure. Attributing success to effort reflects a more adaptive strategy because subsequent effort is controlled by the student. On the other hand, a focus on ability, a stable characteristic out of the control of the student, reflects a maladaptive motivational pattern which is not likely to sustain effort, especially if the task is perceived as too difficult.

Learning strategies were used more often when students were task-oriented or when they perceived their class as emphasizing mastery. This association between a task-involved perspective and the effective use of learning strategies has been reported in previous research (Ames & Archer, 1988; Graham & Golan, 1991; Solmon & Boone, 1993, 1994). Students selecting strategies to regulate and monitor their thinking during classes completed more practice trials and had higher achievement scores. On the other hand, an ego-involved goal perspective in this study negatively associated with the use of learning strategies, suggesting that the achievement of students may be at risk in this motivational climate. The
task-involved climate in physical education classes increased students' involvement in learning as well as positively influenced the quality of that learning.

Findings that students who spend time practicing in class achieve more was supportive of prior research (Ashy, Lee, & Landin, 1988; Buck, Harrison, & Bryce, 1991; Silverman, 1985, 1990). A key question is how to get students to spend quality time practicing. The relationships between task-involvement, effort attributions, and the use of learning strategies suggest that emphasizing task-mastery climates might encourage a willingness to engage in quality practice which in turn will lead to enhanced achievement. Perceptions of a task climate emerged as a significant predictor of achievement even though it accounted for little of the variance. Theoretically this is consistent with the hypothesis that perceptions of a task-involved climate, because of correlates with adaptive attributional patterns, the use of effective learning strategies, persistence, and more positive attitudes, will result in enhanced achievement. One of the more complicated aspects of the current research on achievement goals is the relationship between goal orientation, specific motivational processes, and achievement. The present study reveals only modest relationships between perceptions of a task-involved climate and indices of achievement. However, stronger relationships were found between goal perspectives, the use of learning strategies and the belief that success is caused by effort. Task-involved students monitored their own learning, used self-instruction, focused on effort, and used time wisely. This way of thinking should regulate practice and eventually foster increments in achievement.
The appearance of ego orientation as a predictor of achievement is noteworthy and serves to support Roberts' (1992) notion of the problematic nature of performance measures in motivational field studies. The use of performance measures is problematic to some extent because motor skill performance can be affected by constructs other than motivation. Although the skill test in this study was not designed to provide normative evaluation, it was still open to the view of other students in the classes, and was probably perceived by some to be a competitive situation. Ego-oriented students with good physical ability can score higher on the test because of a desire to out-perform classmates. This would be consistent with the research that reports that ego-involved students with high perceived ability do well in achievement contexts (Duda, 1992).

The intervention designed to create a task-involved climate resulted in more improvement from pre-test to post-test on the badminton short serve than the classes that received no intervention. The task-involved condition in this study provided a more favorable context for the students in those classes by focusing on improvement rather than competition and effort rather than ability. The motivational climate of these classes was influenced by lesson plans designed to enhance task-involvement. A key point in the enhancement of a motivational climate is the development of motivational knowledge in students. Winne (1991) defines various kinds of motivational knowledge as key elements in goal directed behavior. This knowledge influences a student's involvement in various learning tasks and provokes good or bad thoughts about the experience. In an attempt to influence motivational
knowledge and thus influence the climate of the class, specific points of emphasis were presented by the teachers in the task-involved condition. Of critical importance is the salience of the strategies used to promote the desired motivational climate. Winne (1991) also suggests that motivational knowledge can be activated by telling students, prompting students, and firsthand experiences. Emphasis is this study was placed on verbalizing motivational knowledge for information and for prompting. Even in a short period of instruction, the perception of a task-involved climate was enhanced by the intervention of task-involved strategies into the class. This is consistent with findings in research in the academic classroom (Ames & Maehr, 1989; Ames & Archer, 1990). The structure of the physical education class can be influenced to de-emphasize the almost inevitable social comparison that takes place and assessing ability in reference to others.

Findings from qualitative analysis found responses consistent with results found in academic and sport settings. For example, the students in the task-involved condition had more task-involved responses which included the use of specific learning strategies and using more effort. Students in the regular condition reported more ego-involved responses which included performance criteria. It seems plausible that the intentional emphasis on task-involved strategies in the task-involved condition resulted in students internalizing those motivational thoughts and reporting them when asked.

A higher percentage of the students in the task-involved condition reported liking the sport of badminton than in the regular condition. A closer look at why the
students in the task-involved condition enjoyed the sport revealed that they had fun and that it was a challenging sport. Similar results have emerged linking task-involvement to enjoyment of sport (Duda et al., 1992; Seifriz et al., 1993) and to the selection of challenging tasks (Elliot & Dweck, 1988; Thorne & White, 1993; Solmon & Boone, 1993). The most often used reason that students in the regular condition disliked the sport was the difficulty in mastering the skill, perhaps reflecting an aversion to challenging tasks.

Overall, the results of this study support the findings from previous research. Specifically, the correlates of dispositional goal orientation and perceptions of motivational climates with variables that affect learning and achievement mirror those found in academic classrooms and sport settings. From a practical standpoint it would seem that the adoption of a goal perspective that is task-involved would be most advantageous to the student learner.
REFERENCES


APPENDIX A

Extended Review of Literature
TEACHING AND LEARNING IN PHYSICAL EDUCATION CLASSES: A GOAL PERSPECTIVE APPROACH

Historically, the intent of teacher effectiveness research has been to identify factors which favorably influence student learning outcomes. Toward this end, the process-product paradigm has been used extensively as an organizing framework to determine relationships between teacher behavior or other process variables and product or achievement (Brophy & Good, 1986). The effectiveness literature in physical education (see Silverman, 1992 for a review) has produced few research-based conclusions about how students learn from teaching. This research, which is typically correlational, assumes a direct, linear relationship between teacher behavior and student achievement and has been criticized for its failure to reflect the complexities of classroom life (Lee & Solmon, 1992). A linear view of teacher effectiveness research fails to provide results which can explain the complex interactions among a variety of context variables, including important learner characteristics (Doyle, 1977). More recent formulations have included an increased sensitivity to contextual variables and the meanings students and teachers assign to events and processes during instruction (Doyle, 1977). From this perspective more emphasis has been placed on the wide array of covert responses students have during instruction which might mediate instructional events in classrooms. The mediating processes paradigm described by Doyle (1977), or the cognitive mediational paradigm formulated by Winne and Marx (1989) imply that teachers do not directly influence achievement but rather cause students to think and behave in certain ways.
It has been demonstrated that students mediate instructional events with their cognitive processing to the extent that Winne and Marx (1989) referred to the cognitive mediational paradigm as a heuristic for educational research. Results from studies using this approach have suggested that students' reports of their thought processes are more accurate predictors of achievement than overt observations of student behavior (Peterson & Swing, 1982). Students can mediate instructional stimuli in several ways but efforts to study the cognitive, affective and motivational aspects of student thinking during instruction in physical education is limited.

The research relating to time and student engagement to achievement represents an initial effort to understand important mediating variables. There is evidence to support the notion that the amount of time that students spend practicing (time or number of practice trials) at an appropriate or successful level is positively correlated with student achievement, while inappropriate or unsuccessful practice is negatively correlated (Ashy, Lee, & Landin, 1988; Buck, Harrison, & Bryce, 1991; Silverman, 1985, 1990). There is also evidence to suggest wide variation exists in the numbers of trials for students in the same physical education class (Silverman, 1990; Solmon, 1992). In light of this reality, it seems important to investigate mediating factors which enable certain students to practice successfully and demonstrate achievement while others under the same conditions do not practice effectively or improve. The concept of motivation provides one possible framework from which to examine this issue.
The purpose of this review is to define motivation from a cognitive perspective and to examine its role as a mediator between teacher action and student learning. Initially, the educationally relevant body of findings which is responsible for contemporary views is synthesized. A goal perspective approach is carefully examined to facilitate the understanding of motivated behavior in both educational and sport settings. This perspective is then employed as a framework from which to examine other elements which impact the cognitive process of motivation. These factors include perception of ability, self-efficacy, attribution theory, assessment of performance, value of the task, and perception of the environment. Based on the research that has been completed in both educational and sport settings, priorities for research on motivation to learn in physical education classes and suggestions concerning how physical education teachers can structure the environment to develop and sustain motivation are proposed.

**Motivation as a Cognitive Mediator**

Student motivation for learning generally is regarded as a critical determinant of the quality of the learning outcome (Mitchell, 1992). Educational researchers (Nicholls, 1972, 1979, 1984, 1989; Ames, 1983, 1984, 1992) have formulated models of motivation and have described teachers' practical concerns about unmotivated students (Veenman, 1984). According to Veenman teachers, both inexperienced and experienced, perceive problems associated with motivating students as one of the most serious issues in education today. While there is much interest in the analysis of motivation in teaching and learning, the construct as a condition for learning in
physical education classes remains rather vague. Typically, pedagogical researchers have studied teaching and learning as though motivation is constant across learners and thus does not influence the quality of participation in an instructional setting.

Since the mid-1970's the cognitive approach has revolutionized the study of motivation, and this has affected how the construct is conceptualized in educational (Weiner, 1979, 1990), and sport (Roberts, 1993), contexts. Motivation not only comes from external events or rewards, but also from complex mental processes that influence how a learner acquires and uses information. These cognitive processes or cognitive mediators influence how learners interpret and process events in the gymnasium and can help explain student behavior in learning situations. From this perspective, it is understood that motivation is very definitely an enabling factor in achievement or learning that cannot be underestimated, but it also should be an educational goal. In the desire to increase achievement in schools, the development of positive motivational attitudes should not be seen merely as a part of the enabling process, but also a desirable product.

Motivation has been referred to as the process whereby goal-directed behavior is instigated and sustained (Schunk, 1991). In describing a cognitive model of motivation, Winne (1991), and Winne & Marx (1989) define various kinds of motivational knowledge as key elements in goal directed behavior. This motivational knowledge is assembled by students and represents information about how they will go about approaching goals and what means they can use to achieve. This knowledge, represented as thoughts and thus not observable, influences a student's
involvement in various learning tasks and provokes good or bad feelings about the experience. Motivation, in a general sense, influences what a student thinks during and after instruction, what learning tasks are selected, how much interest is shown, and how much effort is put forth.

Motivation, or motivational knowledge as defined by Winne (1991), is not only a predictor of achievement, but can also be an outcome of involvement in a learning task. Winne (1991) contends that high levels of achievement do not ensure corresponding high positive levels of motivation, but that motivation needs direct instruction as well. Motivation then is a part of the "process" that facilitates achievement, but is also a result of achievement or the "product". It is entirely possible that the need is to redefine "product" to include achievement and motivational attitudes in an integrated fashion.

Source of Motivation

One approach which has been employed extensively as a framework to clarify and understand insight into the motivated behavior is the characterization of motivation as extrinsic or intrinsic. The usual way to describe these concepts would be to refer to intrinsic motivation as that which comes from the inside and extrinsic motivation as that which originates from the outside.

Intrinsic motivation

An intrinsically motivated activity is one for which there is no apparent reward except the activity itself, the activity is an end in itself. Individuals are considered to be intrinsically motivated when they engage in an activity for the
inherent pleasure derived from participation rather than an externally-imposed reward (Deci, 1975). Koch (1956) was one of the first to assert that motivational theory needed to be revised to afford increased importance to intrinsic motivation. He suggested persons who are intrinsically motivated become fully absorbed in an activity and are committed to it.

The promotion of intrinsic motivation is a major goal of education. Maehr (1976) refers to intrinsic motivation in education as "continuing motivation" or the development of interest in content that generalizes beyond the classroom. This implies that students will value knowledge and skills for their own sakes, as well as valuing the use of such knowledge and skill (Brophy, 1983a, 1983b). Corno and Rohrkemper (1985) identify two major features of intrinsic motivation as personal responsibility and competence. They contend that intrinsic motivation and an accompanying sustained desire to learn is fostered when students become deliberate participants in the continuous process of information exchange found in traditional classrooms. Intrinsic motivation has been equated with the enjoyment of learning characterized by curiosity, persistence, task-endogeny, and the desire to master challenging, difficult, and novel tasks (Gottfried, 1985).

Proximal goals and self-regulated learning have been presented as ways to enhance or facilitate intrinsic motivation. Bandura and Schunk (1981) argued that proximal goals would foster intrinsic interest because attainment of those goals would result in a sense of mastery and self-efficacy. Exclusive gauging of
performance against long term goals often leads to feelings of incompetence and frustration.

It is of interest to note that motivation to perform in a competitive setting, though it may appear to be external, may in reality be intrinsic in nature. There is evidence to suggest that winners display significantly greater intrinsic motivation than losers, perceiving themselves to be more competent (Reeve, Olson, & Cole, 1985). A key distinction emerges from this perspective. For intrinsically motivated competitors, winning or losing is not the only criterion for success. Satisfaction may be based on the quality of a performance, independent of the outcome of the competition.

**Extrinsic motivation**

Motivation to sustain activity is said to be extrinsic when the source of motivation is external rather than inherent. Typically, extrinsic motivation is characterized most easily by its dependence upon a tangible reward, such as trophies, money, prizes or privileges. It is important to point out that the mere presence of these tangible rewards does not necessarily dictate that motivation for an activity is extrinsic. The delineating factor between these two forms of motivation is the true source of the motivation, which may vary for individuals in similar circumstances.

There is evidence to suggest overuse of extrinsic rewards, producing extrinsic motivation, may undermine or decrease intrinsic motivation (Lepper, Greene, & Nisbett, 1973; Deci & Ryan, 1980; Deci, Betley, Kahle, Abrams, & Porac, 1981;
Earn, 1982), a process referred to as overjustification. This effect does not seem to occur when the external reward is a reflection of one's ability or competence (Rosenfeld, Folger, and Adelman, 1980; Fazio, 1981; Vallerand, 1983). Morgan (1984) characterized this phenomenon as reward instrumentality versus the use of rewards as symbols of task mastery. The implication is that rewards to facilitate student engagement in desirable activities should be used in a moderate or judicious manner. If the extrinsic reward is perceived as the motivation to sustain activity or task engagement, then participation in the activity will likely cease when the reward is no longer present. If the reward conveys information concerning competence or skill, intrinsic enjoyment of the task is enhanced and there is a greater probability of engagement in the task in the absence of extrinsic rewards.

This characterization of motivation as intrinsic or extrinsic has provided valuable insight with regard to the understanding of motivated behavior. A key element which has emerged from this framework is the desirability of motivation which is self-referenced or internalized as compared to incentive which is externally imposed or measured. A parallel construct which offers another perspective from which to examine motivated behavior is the study of goal orientation.

**Goal Perspective**

A contemporary approach in the study of motivation has been to examine the goal perspective or orientation of individuals as it relates to achievement. From this viewpoint, the goal perspective from which an individual approaches a task is a mediating process which affects achievement. A major assumption of this approach
is that individuals act to demonstrate competence or ability in achievement contexts (Dweck, 1986; Nicholls, 1989). Two dimensions of goal perspectives have emerged consistently in extensive investigation both in academic and sport settings. The terms task-involved and ego-involved have been used by Nicholls (1979, 1984) to describe these dimensions.

Task-involvement refers to a goal perspective which the development or demonstration of ability is primarily a function of meeting self-imposed standards. Goals focus on the mastery of a skill or task, and the criterion for success is self-referenced. Dweck and Elliot (1983) employ the term learning goals, while Ames (1984) uses the phrase mastery goals to describe a very similar goal dimension. However, all three terms generally refer to a goal orientation in which success or failure in a task is determined by whether one mastered, learned, or improved on a task.

Ego-involvement refers to development or demonstration of ability in relation to others. Terms used that parallel ego-involvement include performance goals (Dweck, 1986), ability focused goals (Ames, 1984), and competitive goals (Roberts, 1992), all of which generally refer to situations in which the criteria for success or failure in a task is based on comparison to the performance of others. Roberts (1992) has used the term competitive goals in relationship to sport settings. While this nomenclature may be logical since an ego-involved perspective is predicated upon winning, it creates some confusion, suggesting that a task-involved participant does not care about winning or losing. As Nicholls (1992) points out, people who
dislike competition probably would not participate in sports. Duda (1992) has reported that her initial research on The Task and Ego Orientation in Sport Questionnaire indicates that established measures of competitiveness, orientations to winning, and the desire to reach personal goals in sport are not psychologically equivalent to task and ego orientation. However, competing to demonstrate competence in an activity could be considered a task-involved perspective while competing to show superiority over another reflects an ego-involved perspective.

For the sake of consistency the terms task and ego-involvement will be used in the remainder of this text to describe the dimensions of goal perspectives. It has been suggested that these perspectives are bipolar (Dweck, 1986; Dweck & Legget, 1988). However, Nicholls (1984, 1989) and Duda (1992) contend that they are orthogonal and independent of one other. A person that is high in task-involvement may also be high in ego-involvement.

Research Methodologies

The research on goal perspective has generally employed three approaches in the investigation of this construct: a) examination of the dispositional goal orientation of the subjects; b) investigation of the perception of environments as either ego-involved or task-involved; and c) manipulating a situation to be either ego-involved or task-involved. Examination of subjects' dispositional goal orientation typically involves the administration of a questionnaire with scales assessing task orientation and ego orientation. Adaptations to instruments are made as dictated by the particular study or age group of subjects. For example The Task and
Ego Orientation in Sport Questionnaire (TEOSQ) has been developed by Duda and Nicholls (1989) for use in sport settings. This instrument consists of 13 items comprising two orthogonal scales. Subjects respond to the statement "I feel most successful when..." for items reflecting task and ego oriented criteria, indicating their level of agreement on a five point Likert scale. In summarizing the results of research employing this scale, Duda (1992) reports substantial evidence to support both the internal consistency (alpha= .81-.86 for task scale and .79-.90 for ego scale) and test-retest reliability (r=.68 for task scale and .75 for ego scale) for the TEOSQ. Once the subjects' disposition toward a goal orientation has been established, relationships between goal perspective and variables which affect learning and performance are examined.

In addition to the investigation of the effect of an individual's dispositional goal orientation, the perception of a specific environment as either task or ego-involved has also been studied. In academic classrooms, this construct has been assessed through the use of questionnaires about student perception of the classroom goal orientation (Ames & Archer, 1988). A similar approach has been employed by Seifriz, Duda, & Chi (1992) in a sport setting.

The impact of goal perspective has also been investigated by manipulating learning environments to be either task-involved or ego-involved (Elliot & Dweck, 1988). The incorporation of manipulation of the environment has been extended to a sport setting by Duda & Chi (1989). A variation on this approach has been to incorporate hypothetical situations into the research paradigm by asking subjects to
imagine involvement in either a task or ego-involving situation (Jagacinski & Nicholls, 1984, 1987).

It should be noted here that the assessments of the subjects' dispositions and of many of the variables studied are made through self-reports with all of the potential problems associated with them. However, there is substantial evidence that self-report measures taken with care, can be reliable and useful (Ericsson & Simon, 1980; Howard, 1981; Lee, Landin, & Carter, 1992; Locke & Jensen, 1974; Solmon, 1991).

Empirical Evidence

The consistency evident in this line of inquiry regardless of the approach employed is encouraging. Investigation of goal perspective, affective variables, patterns of behavior, and measures of performance have supported the notion that relationships among these variables exist.

Attitudes

A consistent relationship between affective elements and goal perspective is evident in the literature. Students with a task-involved orientation generally display more positive feelings toward learning situations (Dweck, 1986; Dweck & Legget, 1988; Nicholls, Patashnick, & Nolen, 1985) as well as socially desirable attitudes in sport settings (Duda, 1989; Seifriz, Duda, & Chi, 1992). Conversely, negative or undesirable attitudes have been associated with an ego-involved perspective.

In the examination of the relationship between student perception of classroom goal orientation and attitude toward school, Ames and Archer (1988)
reported a high correlation between positive attitudes and the perception of an emphasis on mastery goals. Though the relationship was of a lesser magnitude, a significant negative correlation between perception of an ego-involved climate and enjoyment of the class was evident. When considered in conjunction with other variables investigated, Ames and Archer concluded this relationship was likely a function of the focus on effort rather than ability associated with the mastery orientation, and the students' tendency to evaluate their own ability negatively when an ego-involved climate was perceived.

In a series of experiments, Jagacinski and Nicholls (1984, 1987) employed scenarios and hypothetical situations to investigate the interaction of affect and goal orientation with other factors. The relationship between positive affect and task-involving situations was evident in these investigations. Positive affect was manifest across differing conceptions of ability in a task-involved situation, but not in ego-involved situations (Jagacinski & Nicholls, 1984). Information about social comparison produced negative affect in ego-involved situations, but not in task-involved situations (Jagacinski & Nicholls, 1987).

Attitudes toward sport and participation have been the focus of much research in sport settings. In a survey of high school athletes, Duda (1989) examined the relationship between goal perspective and the perceived purpose of involvement in sport. She reported a positive relationship between task orientation and the belief that the goals of sport should encompass many socially desirable attitudes. These include an emphasis on effort, cooperation with others, adhering to rules, and the
concept of fair play. The view that sport should serve as a socializing agent for honesty, respect, and concerned citizenry in society at large is also inherent in this conception. Task-involvement was also associated with the belief that participation in sport should enhance self-esteem and increase the probability of adopting and maintaining an active lifestyle.

Attempting to establish the link between dispositional goal perspectives and several motivational variables, Walling et al (1992) surveyed over two hundred youths. Subjects ranged in age from 12 to 17 years, and were participants in state or regional competition across several sports. Again, a positive relationship between task involvement and positive affect was reported. Youths high in task-involvement reported higher levels of pre-competition anticipation and confidence.

In the only investigation on the impact of goal perspective in physical education classes to date, Solmon and Boone (1993) reported results consistent with previous work in both academic and sport settings. Positive attitudes about class were positively associated with a task-involved goal perspective and negatively associated with an ego-involved orientation.

It appears from these investigations that task-involved goal perspective is likely to be associated with positive attitudes across many settings. As demonstrated by Jagacinski and Nicholls (1984, 1987), the relationship between task-involved situations and positive affect appears to remain constant when other factors are manipulated, while positive affect reported in an ego-involved setting is fragile when other factors are introduced.
Though the relationship between positive attitudes and a task-involved perspective is consistently positive and high, a corresponding negative relationship between ego-involvement and positive attitudes is not as evident. Though such a trend has been reported, in general, the inverse relationship has not been as strong. A possible explanation for this is that an ego-involved perspective may not foster positive affect, but does not necessarily preclude it. Negative affect or a decrease in positive affect associated with ego-involvement may be more consequential when considered in light of other factors.

There are several investigations which have reported ego-involvement to be associated with negative or undesirable attitudes. Elliot and Dweck (1988) found that a performance goal or ego-involved condition in conjunction with a low perception of ability produced negative affect. Ego-involvement foster the attitudes that education is only a means to an end (Nicholls, Patashnick, & Nolen, 1985) and that success depends on demonstrating superiority as compared to one’s peers knowing how to impress the teacher (Nicholls, Cheung, Lauer, & Patashnick, 1989).

Evidence that an ego-involved perspective is associated with undesirable attitudes is found in sport settings as well. Duda (1989) reported that an ego-involved orientation was related to attitudes about sport that emphasized extrinsic rewards, personal gains, or some seemingly undesirable avenues to success. In a subsequent study, ego-involvement was related to higher legitimacy ratings for non-physical intimidation in sports and intentionally injuring an opponent to gain advantage (Duda, Olson, & Templin, 1991). Athletes with ego or task-involvement
orientations seem to display contrasting judgements concerning what is fair and acceptable in athletic competition (Duda, 1992).

Patterns of behavior

Investigations conducted in academic as well as sport settings consistently suggest that students whose goals are related to the mastery of a task are more likely to engage in adaptive patterns of behavior. These include choosing challenging tasks, focusing on effort, and persisting in that effort over time and in the face of difficulty. Students whose goal orientation is ego-involved are more likely to employ maladaptive behaviors in the face of difficulty, such as choosing tasks to avoid challenge, displaying less persistence, and being unwilling to expend effort during practice (Roberts, 1992).

Task selection. Ames and Archer (1988), in their study of student perception of goal orientation, reported a positive relationship between the perception of a task-involved classroom and the tendency to prefer challenging versus easy tasks. They defined a challenging task as one in which students would likely encounter difficulty and make mistakes, but would learn new things and an easy task as one in which a minimum of confusion and struggle would be involved. In an experimental condition manipulated to produce a task- or ego-involved situation, Elliot and Dweck (1988) reported the mastery-involved condition promoted the use of challenge seeking behaviors while an ego-orientation produced behaviors designed to avoid challenge or risk.
There is evidence that the relationship between goal orientation and task selection reported in classroom settings is present in a physical education setting as well. In their study, Solmon and Boone (1993) used a system of contract grading in college tennis classes as a measure of task difficulty. Students exhibiting a task-involved goal perspective selected more challenging tasks as reflected by their choice of contract items, while ego-involved perspectives were negatively associated with this indicant. According to Duda (1992), the selection of challenging tasks has not previously been addressed in research in sport settings. The influence of the willingness to select challenging tasks associated with a task-involved goal perspective gains significance when considered in light of research establishing academic learning time as a mediating factor between teacher behavior and student learning (Fisher, Filby, Marliave, Cahen, Dish, Moore, & Berliner, 1978). The key element in this construct is that students be engaged at an appropriate level of difficulty. Inherent in the conception of an appropriate difficulty level is that students are challenged. Practice at a level on which one is assured of success, or of skills on can already perform, is unlikely to produce an increment in learning. Task-engagement at an unreasonably high rate of difficulty, where success is not expected, is also unlikely to result in achievement.

An ego-involved goal perspective, in which ability is referenced by comparison to the performance of others, is characterized by avoidance of risk or challenge. This translates into a tendency to select tasks on which success is assured (low level of difficulty), or tasks on which success is not expected (an unreasonable
level of difficulty), thereby avoiding challenge or risk. In a physical education setting, where skill practice is observable by peers and instructors by its nature, this effect could be intensified. By virtue of this reasoning, students with an ego-involved perspective would be unlikely to engage the level of practice which would be most beneficial.

Learning strategies. In addition to the tendency to select challenging tasks, a task-involved goal perspective is also associated with the use of effective learning strategies. Ames and Archer (1988) define these as approaches generic to the process of learning and studying including information-processing, self-planning, and self-monitoring. They found perception of a task-involved classroom climate to be positively correlated with the use of productive learning strategies. It has also been demonstrated that task-involved students tend to place emphasis on concepts of learning, and understanding of subject matter (Nicholls, Cheung, Lauer, & Patashnick, 1989; Nicholls, Cobb, Wood, Yackel, & Patashnick 1990).

In a situation manipulated to construe an ego-involved-low perceived ability condition, Elliot and Dweck (1988) reported evidence of a pattern of strategy deterioration. Similarly, Graham and Golan (1991) determined that children in an ego-involved situation exhibited poorer recall of words at deep processing levels, suggesting subjects in the ego-involved condition processed information more effectively.

The study by Solmon and Boone (1993) supports the notion that the positive relationship between a task-involved goal perspective and effective use of strategies
extends to a physical education setting, as well. In their study, task-involvement was positively, and ego-involvement negatively, associated with higher scores on a cognitive processes questionnaire. Higher scores on this instrument indicated use of strategies to understand concepts relevant to the task and an aptitude to regulate one’s own learning.

**Effort and persistence.** A focus on effort accompanied by a willingness to persist in the face of difficulty is typically included in descriptions of a task mastery goal perspective. While data addressing the relationship between goal orientation and effort are sparse, Duda, (1992) concludes the theoretical predictions made concerning the positive association between a task-involved goal perspective have been supported. It is plausible that direct evidence in this vein is lacking because of the difficulty inherent in defining and assessing varying levels of effort.

Scenarios and hypothetical situations were employed by Jagacinski and Nicholls (1984, 1987) to investigate the interaction between task- and ego-involvement with effort. In the initial series of studies (Jagacinski & Nicholls, 1984), task and ego involved situations were manipulated with varying levels of perceived effort. In the subsequent investigation, social comparison information was introduced in the design. Results from the series of experiments suggest that varying levels of effort on a task convey different messages concerning competence based on situational goal perspective and salience of information. Individuals in a task-involved setting are likely to associate high levels of effort with feelings of competence, and information about the effort or performance of others is unlikely to
affect these feelings. In an ego-involved situation, social comparison information about the effort of others impacts feelings of competence. A high level of effort may be associated with feelings of increased competence when the comparison information provided indicates a high level of effort is required by most people. However, if the information provided indicates others can perform with minimal effort, the high level of effort adversely affected subjects’ judgements of their competence. Feelings of guilt related to lack of effort and embarrassment when effort was expended were also reported. The authors describe a high level of effort in an ego-involved situation as a "double-edged sword."

Supporting evidence for the notion that a focus on effort is associated with a task-involved perspective is found in the study by Ames and Archer (1988). They report that students perceiving classrooms to be oriented toward mastery of a task expressed the belief that effort and success covary. Graham and Golan (1991) suggest that ego-involvement may disrupt the cognitive effort required for deeper levels of information processing.

In sport, achievement strategies or behaviors are often considered in the light of intensity, effort, and persistence. There is limited research on intensity and effort from a goal perspective but Duda (1988) has found that intramural athletes high in task-involvement reported that they practiced more in their free time. In the area of athletic injury rehabilitation, task-involved athletes pushed themselves while ego-involved athletes tended to put forth less effort (Duda, Smart, & Tappe, 1989).
There is also research to suggest that the goal perspective from which a participant approaches sport may have an effect on persistence. Roberts (1984) has argued for some time that participants with high ego-involvement would not persist in sport if their high ability goals were not met. The research has supported this argument with findings that show a positive relationship between task-involvement and persistence and a negative relationship between ego-involvement and continued involvement in sports (Duda, 1989; Burton & Martens, 1986; Ewing, 1981). In a physical education setting, Solmon and Boone (1993) reported a positive relationship between task-involvement and a willingness to persist in practice.

**Performance**

Although there may be some disagreement as to the importance of emphasizing accomplishment (Nicholls, 1992), the acceptance of the distinction of different goal perspectives in any practical way probably will hinge on differences in achievement. Related to this need is evidence that outstanding creative achievement in science and arts as well as success in school is fostered by high levels of task-involvement (Nicholls, 1972; Spence & Helmerich, 1983). Later evidence has been presented that task-involved learners in comparison to ego-involved learners actually perform better in achievement contexts (Butler, 1987; Stipek & Kowalski, 1989). Helmerich and Spence (1977) have suggested that task-involvement provides a more favorable intellectual achievement basis for children. An additional factor predicted by Ames (1983) was that task-involved students would view seeking
assistance as a way of learning and that even the low perceived ability students
would not avoid seeking assistance.

A relationship to impaired or deteriorating performance over time is seen with
is probable that this impaired performance is a result of maladaptive achievement
strategies or negative attitudes towards learning, however Nicholls (1989) has argued
that it comes as a result of the debilitating effects of anxiety. This argument is
consistent with the ego-involved learner’s preoccupation with enhancing or protecting
one’s rank in the hierarchy of ability. To date the majority of the research has
focused on Nicholls’ hypothesis of a debilitating effect of anxiety on performance
that is caused by high ego-involvement. This view has been supported in sport
studies (Duda, Newton, & Chi, 1990; Newton & Duda, 1992; Vealey & Campbell,
1988). A purpose of the Newton and Duda study was to measure the relationship
between goal perspectives and trait anxiety in adolescent tennis players. In support
of Nicholls’ hypothesis, it was found that ego orientation was related to heightened
worry and debilitated concentration.

It has been difficult to measure the effect of goal perspective on performance
in sport activities. It has been argued that it is difficult to produce a high level of
task-involvement in laboratory experiments that have been used to measure
performance (Nicholls, 1989). On the other hand it is often hard to get performance
measurements in field settings that are not controlled and where often there is no
clear determination of performance levels. In a review of motivation in sport and
exercise, Roberts (1992) has voiced criticism of the uncritical use of performance as a dependent measure. His criticism is based on the belief that performance may be affected by other constructs that may be present in a field setting. Every instance of performance enhancement or decline cannot be assumed to be a result of motivation.

**Situational and Developmental Influences on Goal Perspectives**

Much of the research has focused on achievement goal perspectives as being two different dimensions and the evidence has been convincing that task-involvement fosters positive learning strategies and quality of learning (Ames, 1992) as well as positive attitudes and actions in sport (Duda, 1992). The educator, coach, or parent seeing the evidence of the effects of goal perspectives should be particularly interested in the indications that goal perspectives can be situationally influenced (Ames & Archer, 1988; Chaumeton & Duda, 1988; Duda, 1989). The fact of the matter is that students do not operate in vacuum where the distinction is so clear. School environments have a decided effect on students' attitudes and motivation. It has been reported that school environments may rob children of their natural motivation (Deci, 1975; Harter, 1981; Maehr, 1983; Nicholls, 1979;), that declining motivation is a function of time spent in school (Halaydyna & Thomas, 1979), and even that self-perceptions and motivation suffer a decline in a single school year (Good & Brophy, 1986). The prediction is that same negative trends might be seen in sport settings as well. Approximately seventy-five percent of sport participants drop out by the time they are fifteen years of age (Schock, 1987). Perhaps this a revolt against ego-involving environments created by parents and coaches.
Situational influences. Ames has identified a need to focus on the context in which the different goal perspectives are developed, and look at how the structure and influences of an achievement environment can result in different goal perspectives. These different goal perspectives may even be present in the same person in different contexts. These contexts have been referred to as "climates" with the suggestion that a climate that emphasizes task-involvement will be more likely to encourage the development of a task-involved goal perspective with all of its positive benefits.

A study of high school students by Ames & Archer (1988) has established the relationship between a field setting that was perceived as being mastery oriented and individual mastery goal orientation. Ames states "Our findings suggest that the motivation of individuals, even in elite groups, is responsive to how the environment is defined" (p 265). Follow-up studies of the same students by Ames & Archer (1990) established a strong relationship in the use of effective strategies and positive attitudes exhibited with the numbers of years in a classroom they saw as mastery oriented. Students' use of effective strategies, preference for challenging tasks, positive attitudes, and attribution of effort for success were all found to covary with changes in a mastery climate (Ames, 1992). In studies of elementary school children, similar results have been found on a consistent basis even across different classifications of students (e.g. at-risk students). Of interest would be the effect of moving into different climates in sport settings and its influences on the participants.
Developmental characteristics. A critical factor that needs more research is the developmental pattern of goal perspectives. It has been suggested that children start school with a task mastery orientation and in the course of their school progression they often move to an ego-involved perspective (Deci, 1975; Harter, 1981; Maehr, 1983; Nicholls, 1979). Ewing, Roberts, and Pemberton (1985) provided some evidence that young children (9-10 years) demonstrated a clear mastery or task-involved orientation while adolescents (12-15 years) exhibited both task and ego-involved orientations (Ewing, 1981). Ames (1992) has made reference to choice points which children reach as they are impacted by significant others. The implication is that by giving certain cues, expectations, and directions, coaches, teachers and parents can play an important part in which goal perspective is developed. The manipulation of achievement climates holds some promise in the development of desired goal perspectives.

Generality of the Research

Research has been described that studies goal perspectives and their relationships to various motivational variables in both the academic classroom and sport settings. In general the sports research has borrowed heavily from the academic research to establish its methodology. However, very little research has been done on the generality of the goal perspectives across the two domains. Recently Nicholls & Duda (1992) attempted to address this question in a survey of 207 high school students. They found that beliefs about the causes of success in school and sport to be logically related to students personal goals. In summary, the
generality of the classroom and sport research is that task and ego-involvement goal perspectives are found in both domains and that beliefs about the causes success as well as positive attitudes toward achievement tasks are the similar in both. This conforms with the view by Nicholls (1989) that individuals' personal theories of the way the world operates are related to their goals in a logical fashion and that these goals are generally consistent with the belief of how success is achieved. With that view, some generalization across achievement contexts may be expected.

**Impact on Cognitive Mediation**

It is apparent motivation is an important construct which affects student interaction in physical education classes and that the concept of goal perspective has emerged as a useful approach in understanding motivational behavior. However, just as it is simplistic to approach motivation as if it were it merely a matter of identifying a certain quantity necessary for success, it is also simplistic to assume that goal orientation is a characteristic unaffected by other variables. In order to more clearly examine the impact that goal perspective has in achievement settings, it is important to examine the interaction between goal orientation and other factors identified as cognitive mediators.

**Perception of Ability**

The manner in which success is referenced or defined is a key distinction between the task-involved and ego-involved goal perspectives. A closely related concept is the definition of ability or competence. Contrasting conceptions of ability are defined by Nicholls (1984). The point of divergence between two is the
reference point for the definition of ability. In one conception ability is self-referenced. Ability is appraised on the basis of making progress toward or achieving the mastery of a task. The difficulty level of the task is also self-referenced so the mastery of increasingly difficult tasks is associated with the perception increased ability. This conception of ability is consistent with a task-involved goal perspective. In the other conception, ability is judged in relation to performance of others. An individual espousing this conception of ability could actually improve skills, or even master a challenging task, and yet have a low perception of his or her ability when based on the comparison to others. This definition of ability is congruent with an ego-involved goal orientation.

There is a consensus that individuals will likely develop achievement goal perspectives consistent with their perception of ability (Ames & Archer, 1988; Nicholls, 1984; Roberts, 1992). In addition to the definition of ability, however, there are other considerations related to this issue which interact with and impact goal perspective. Specifically, they are perceived competence, or self-concept of ability, and self-efficacy, described as the confidence or belief that one can succeed at a task.

**Perceived competence.** The role an individual’s perception of his or her own ability plays in motivation has been investigated extensively (Roberts, 1992). Much of the research that has been conducted is based on Harter’s (1982) competence motivation theory in which perceived competence is conceived as a multi-dimensional construct which motivates individuals in cognitive, social, and physical
domains. Within these domains, higher levels of perceived competence and intrinsic pleasure are associated with success and facilitate the desire to achieve, while the perception of incompetence and feelings of dissatisfaction result in anxiety and a decrease in achievement behavior.

Eccles & Wigfield (1985) contend a positive self-concept of ability has a positive influence on student motivation and persistence in challenging tasks, yielding increased levels of achievement. In contrast students with negative self-concepts of ability display decreased motivation and lack the perseverance to work hard, with likely results in decreased achievement. This can lead to a discouraging cycle in which low achievement produces perception of low ability, which in turn decreases motivation. The decrease in motivation adversely impacts the already low level of achievement, continuing the downward spiral.

Of particular interest in this paper is the interaction between goal orientation and perceived competence. Several investigations have examined the composite impact of these constructs. A task-involved perspective, with a self-referenced evaluation of ability, appears to enhance the development of perceived competence, while ego-involvement, with the focus on comparing one’s performance to others, increases the probability of perceiving oneself as incompetent (Duda, 1992). Various studies in a sport context support this notion (Burton, 1989; Hall, 1990). In a field based experiment, Duda and Chi (1989) explored the effect on perceived competence of either an ego or task-involving one-on-one basketball game by assessing the pre-game and post-game perceived competence of the participants. Low pre-game
perceived competence subjects who were in the task-involving situations demonstrated higher levels of perceived competence at the end of the game than the low perceived competence subjects in the ego-involving game.

**Self-efficacy.** Bandura (1977) used the term, self-efficacy to describe the belief that one can succeed at a task. Its focus is on confidence that one can accomplish a task rather than simply on a conception of ability. In practice, low self-efficacy can have an effect comparable to that of a low self-concept of ability because it may prohibit an individual from even attempting a task. According to Bandura, individuals generally engage in activities that they think they can do. Bandura (1989) predicted that those with high self-efficacy will try harder and persist longer, while those with low self-efficacy will not try as hard and give up quickly. This prediction is consistent with predictions made concerning task- and ego-involved goal perspectives.

It appears that conception of ability, whether best described as self-efficacy or perceived competence, has an interactive effect with goal perspective. A high conception of ability is likely to result in use of adaptive behaviors even when the goal orientation is ego-involved. An ego-involved goal orientation is more likely to result in maladaptive motivational behaviors when it occurs in conjunction with a perception of ability or lack of confidence. It seems that task-involvement fosters higher levels of perceived competence while in contrast ego-involvement may actually cause perceived competence to decline.
Attributions for Success

A model of attribution based on the concept of locus of control serves as a useful tool in conceptualizing how students' motivational processes mediate achievement. Perceived causes of success or failure are ability, luck, effort, or task difficulty. There is empirical evidence to support the notion that when students attribute success or failure to their own effort or lack of it they will be highly motivated to learn. Effort is an internal factor, or one which an individual can control. When students ascribe the cause of their success or failure to factors beyond their control, such as ability, luck, or task difficulty they are less likely to persist in an activity. Dweck (1975) suggested that children who give up in school when faced with difficult tasks do so because they attribute their failure to lack of ability.

Attribution of failure to lack of ability leads to low self-esteem and since ability is seen as a stable factor (Eccles [Parsons], Adler, Futterman, Goff, Kaczala, Meece, & Midgely, 1983), the problem is seen as long-lasting or permanent. Learned helplessness may result from repeated failure attributed to lack of ability (Abramson et al., 1978) and is reinforced by more failure.

Attribution theories of motivation have been criticized as not being comprehensive and for lacking strength when interventions to enhance attribution are considered (Roberts, 1992). Roberts notes that attributional retraining interventions used in the classroom with some success (Dweck, 1975) have not translated to sport settings.
In classroom studies, attribution of failure to a lack of effort has been unrelated (Greene, 1985) or negatively related (Marsh, 1984) to motivated behavior or achievement. Covington and Omelich (1984) argue that because ability and effort are often seen as being inversely related, individuals who try hard often are seen as compensating for the lack of ability. As a result, advice to low-achieving students to try harder may be sending a message that they must make extra effort to compensate for insufficient ability, actually defeating the purpose of attribution retraining. This parallels the work by Jagacinski and Nicholls (1984, 1987) which suggests that a high level of effort on a task easy for others adversely affects competence judgements in an ego-involved situation.

An adaptive attributional pattern is evident when students attribute their success or failure to effort rather than ability or luck. Ames (1984) studied this effect with fifth and sixth grade children by looking at attributions made in both a competitive and individualistic condition. The results revealed that in the individualistic condition the children displayed a mastery orientation and that more effort attributions and self-instructions were made than in the competitive condition. Results from other classroom studies have supported this finding of a strong relationship between task orientation and the belief that success is dependent upon effort (Jagacinski & Nicholls, 1984; Nicholls et al, 1985, 1989, 1990).

Differences in attributions found in the classroom between task-involvement and ego-involvement have also been found in sports (Whitehead, 1986; Duda & Nicholls, 1989). Results show that task orientation positively correlates with the
belief that success in sports depends on hard work or effort, while there was a negative correlation with the idea that success is related to the ability to cheat or deceive the coach. The contrasting view in ego orientation was that success was dependent on being talented or skilled. Ego-involvement has also been linked to a tendency to downplay the impact of effort when faced with failure (Duda & Chi, 1989). The research suggests that different goal orientations correspond to different attributions of causes of success in a predictable manner (Duda, 1992).

Interaction of Ability Perceptions and Attributions

There is some evidence to support a claim by Bandura (1986, 1989) that self-efficacy imposes a bias on attributions of failure. Those who have a high level of self-efficacy tend to attribute failure to lack of effort, while those with low self-efficacy tend to attribute failure to lack of ability (Feltz, 1992).

A study by Hall (1990) examined relationship between attributions, perceived competence, and goal structure. The results suggest individuals with a low perception of ability are at risk, which is consistent with results evident in academic research (Nicholls, 1989). People who doubt their physical skill in an ego-involved situation were more likely to reduce their effort, while task-involved people expressed the belief that the investment of effort was worthwhile, regardless of their level of perceived competence.

Conclusions, Future Directions, and Applications

A careful review of the literature has established existence of different goal perspectives which individuals employ in achievement contexts. Very different
actions and attitudes develop from a task or ego-involved goal perspective and the findings are consistent in academic and sport settings. Of great interest to physical educators is whether these findings will generalize to the physical education class. Physical education cannot be conceptualized as identical to either the academic classroom or to sport settings but certainly includes characteristics of both. At least one study (Solmon & Boone, 1993) in physical education classes has shown relationships between goal perspectives and motivational processes which are consistent with the academic and sport literature. A more complete analysis of goal perspective and its impact on achievement related behaviors in physical education is needed. These research efforts must be planned systematically if new knowledge about how students learn from teaching in physical education classes is to be generated.

Future Directions

Initial work is needed to develop and refine instruments to assess motivational processes in the gymnasium. Researchers must develop ways to measure relevant constructs. Then observation instruments are needed to get accurate estimates of persistence and effort during movement and sport practice. If this can be accomplished the relationships between goal perspective and practice patterns can be determined and the effect of these on learning can be studied.

The essential elements of a task-involved physical education class should be determined and ways to create this climate need to be explored. Then it will be important to determine if the manipulation of a physical education class to make it
more task-involved will produce task-oriented students. Based on the research described in this review paper and the assumption that the findings should generalize to the physical education context, it is hypothesized that the conscious introduction into physical education classes of a task mastery climate will produce the development of task-involved goal orientations, the selection of and engagement in challenging tasks, adaptive attributional patterns, use of adaptive learning strategies, persistence in task-related activity, and enhanced learning. Studies to examine the interactions and outcomes of a situation where an environment that is in conflict with the orientation (e.g. a task-oriented person placed in an ego-involving climate) should be designed.

Applications for Teachers

Taken together the recent research on goal perspective from academic and sport settings has some implications for practitioners. While additional work is needed before research based guidelines for physical education can be formulated, it appears that a task-oriented environment should be created and maintained by teachers. From the standpoint of teaching several considerations need attention.

Motivational knowledge and attitudes should be a vital part of the goals of a physical education curriculum. Since high achievement alone does not ensure that positive attitudes are developed, teachers must be more aware of the motivational knowledge needed by students. Positive motivational thoughts should be a focus of instruction beginning in the primary grades. Research (Good & Brophy, 1986) has suggested that declining motivation is a function of years spent in school and this
trend needs to be reversed. Gottfried (1990) stressed that motivational interventions are important and should be established as early as possible if failure cycles are to be prevented. More emphasis should be put on the mastery of tasks rather than who wins or loses the game or contest. This is especially important in physical education considering the historical significance of competition in classes at all grade levels.

The incentives used in physical education classes should be reevaluated with the intrinsic value of activities emphasized to facilitate continued participation. Rewards used should reflect competency and should be used moderately. Utility value is a viable incentive but exclusive use would not be recommended. Teachers should establish some proximal goals, or at least help students set short term realistic goals. According to Alderman (1990) attainment of short term goals begins the momentum of changing motivational attitudes. A challenge for teachers is to help students set goals that are obtainable and avoid emphasis on comparison with goals of other students. This is troublesome for physical education teachers in that the environment is one where performance on tests or in games is open to the view of other students. There is evidence, however, that this social comparison is not as harmful if it is not emphasized (Jagacinski & Nicholls, 1987).

The ability to have some choice or control over one's own situation is a key to developing intrinsic motivation and teachers must consider this during planning. By giving carefully conceived choices, an atmosphere may be created that encourages individual effort and persistence.
From a motivational standpoint an attempt should be made to focus on effort rather than ability as a cause for success. Often children have the concept that ability is a stable condition, but there is evidence that this view could be changed with intervention (Eccles & Wigfield, 1985). Then children could grasp the possibility that future success is not necessarily linked to assessment of current ability (Eccles, Midgely, & Adler, 1984).

In conclusion, the findings presented in this paper suggest that the conceptualization of motivation as a cognitive process is relevant to effective teaching and learning in physical education. The goal orientation approach can provide a framework for pedagogical researchers to study specific mediating processes. The results of this research can generate important research-based implications for practice and interventions.

Additional References


Newton, M., & Duda, J. (1992). Tennis is not a matter of life or death, it is much more important than that: The relationship between dispositional goal perspectives and effort, interest, involvement, and trait anxiety in adolescent tennis players. Research Quarterly for Exercise and Sport, 63, A81-82.


APPENDIX B

Pilot Study
Pilot Study

Most of the studies that examine the relationship of goal perspective and variables which affect learning and performance have been conducted in the academic classroom and in sport settings. Since the physical education class incorporates features from both settings, it is expected that similar findings will be reported. In an early field-based investigation using college age students Solmon and Boone (1993) reported results consistent with the work done in the academic classroom and in sport settings. The first objective in this pilot was to examine these relationships with younger students. A second objective was to examine how students' individual goal orientation relate to the perceived motivational climate in physical education classes. Another question that has not been addressed to this point is whether the physical education class with its performance and evaluation often open to the view of other students is more apt to produce an ego-involved climate. In this study a comparison of the motivational climates of physical education and math classes is made.

Methods

Subjects and Procedures

The subjects for this study were 341 students from physical education classes and 305 students from math classes in three public junior high schools in the Southeastern United States. The students surveyed ranged from grades seven through nine.
Data Collection

After obtaining permission from the principals and teachers involved at each school, questionnaires were administered at the beginning of a regularly scheduled class. The questionnaires were given during the last two weeks of the school term. Students were encouraged to answer all the questions honestly and were assured the responses were to be anonymous.

The Task and Ego Orientation in Sport Questionnaire. Students in the physical education classes completed the Task and Ego Orientation in Sport Questionnaire (TEOSQ), developed by Duda and Nicholls (1989). This instrument consists of 13 items comprising two orthogonal scales. Subjects responded to the statement "I feel most successful in PE when..." for items reflecting task and ego oriented criteria. The subjects indicated their level of agreement on a five point Likert scale (1=strongly disagree, 5=strongly agree). In summarizing the results of research employing this scale, Duda (1992) reports evidence to support both the internal consistency (alpha=.81-.86 for task scale and .79-.90 for ego scale) and test-retest reliability (r=.68 for task scale and .75 for ego scale) for the TEOSQ. The Cronbach alpha reliability coefficients for this study were .81 and .82 for task and ego scales, respectively.

Perceived Motivational Climate in Physical Education. Each subject is a physical education class was asked to respond to the statement "IN MY PE CLASS..." for items reflecting task and ego involved criteria (e.g. "out performing classmates is important"). The 25 items on the questionnaire were adapted from
the Perceived Motivational Climate in Sport Questionnaire developed by Seifriz, Duda, and Chi (1992). A five point Likert scale was used to determine the level of agreement with each statement (1=strongly disagree, 5=strongly agree). Cronbach alpha reliability coefficients were .80 for task climate and .78 for ego climate.

Beliefs About Causes of Success Survey. Students in physical education classes were asked to complete a survey indicating the reasons for success in physical education. The 20 item questionnaire reflected attributions for success that included motivation and effort (e.g. "they try really hard"), ability, deception, and external factors. A five point Likert scale was used to determine the level of agreement with each statement (1=strongly disagree, 5=strongly agree). The Cronbach alpha reliability coefficients for each sub-scale were .83 (motivation and effort), .43 (deception), .65 (ability), and .33 (external factors). Because of a low reliability coefficient the external factors sub-scale was not used in subsequent analysis.

Learning Strategies Inventory. Subjects in the physical education classes were asked to respond to a 40 item questionnaire generated in an earlier study to examine the relationship between goal perspective and cognitive processes affecting learning (Solmon & Boone, 1993). The instrument, designed to gather information from the student's perspective, focused on student understanding of instruction, use of strategies, level of attention and motivation, and attitude toward class. Items were generated based on questionnaires and responses from
stimulated-recall interviews in previous studies (Peterson, Swing, Stark, & Waas, 1984; Solmon, 1991), in conjunction with the examination of an instrument developed and validated for use in academic course work (Weinstein, Palmer, & Schulte, 1987).

Students indicated how well statements described themselves by selecting from the responses 1) very much like me; 2) like me; 3) sorta like me; 4) little like me; 5) not like me. In order to encourage subjects to carefully read and respond to each item and discourage production of socially desirable responses, the items were counterbalanced so that some were positively weighted for response one and others were positively weighted for response five. The reliability coefficient for the inventory was .89.

**Perceived Motivational Climate for Academic Classroom.** Each subject in a math class was asked to respond to the statement "IN MY MATH CLASS..." for items reflecting task and ego orientation criteria. A five point Likert scale was used to indicate the subject's level of agreement with each statement (1=strongly disagree, 5=strongly agree).

**Data Analysis**

The means and standard deviations were calculated for goal orientations, perceived motivational climates, attributions for causes of success, and scores on the cognitive processes questionnaire. Relationships among dispositional goal orientation, perceived motivational climate, attributions for success, and cognitive processes were examined using Pearson Product Moment Correlation Coefficients.
An independent t-test was used to determine if motivational climates in physical education and math classes differed. An analysis of variance was used to determine class and school differences in motivational climates in math classes.

**Results**

**Descriptive Data.**

Descriptive data for goal orientations, perceived motivational climates for physical education and math classes, attributions for causes of success, and cognitive processes are presented in Table 8.

**Table 8**

**Descriptive Statistics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Orientation</td>
<td>324</td>
<td>3.71</td>
<td>.70</td>
<td>1-5</td>
</tr>
<tr>
<td>Ego Orientation</td>
<td>324</td>
<td>2.90</td>
<td>.88</td>
<td>1-5</td>
</tr>
<tr>
<td>Perceived Climate/PE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task</td>
<td>285</td>
<td>3.47</td>
<td>.67</td>
<td>1-5</td>
</tr>
<tr>
<td>Ego</td>
<td>285</td>
<td>3.19</td>
<td>.58</td>
<td>1-5</td>
</tr>
<tr>
<td>Causes of Success in PE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivation/Effort</td>
<td>254</td>
<td>3.59</td>
<td>.72</td>
<td>1-5</td>
</tr>
<tr>
<td>Ability</td>
<td>254</td>
<td>3.07</td>
<td>.70</td>
<td>1-5</td>
</tr>
<tr>
<td>Deception</td>
<td>254</td>
<td>3.07</td>
<td>.86</td>
<td>1-5</td>
</tr>
<tr>
<td>External</td>
<td>254</td>
<td>3.09</td>
<td>.70</td>
<td>1-5</td>
</tr>
<tr>
<td>Perceived Climate/Math</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task</td>
<td>305</td>
<td>3.88</td>
<td>.58</td>
<td>1-5</td>
</tr>
<tr>
<td>Ego</td>
<td>305</td>
<td>2.73</td>
<td>.50</td>
<td>1-5</td>
</tr>
<tr>
<td>Learning Strategies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory</td>
<td>214</td>
<td>128.51</td>
<td>22.57</td>
<td>71-194</td>
</tr>
</tbody>
</table>
Correlational Data

Correlations between dispositional goal orientation, perceived motivational climates, attributions for causes of success, and cognitive processes scores are presented in Table 9.

Table 9
Pearson Correlation Coefficients

<table>
<thead>
<tr>
<th></th>
<th>TK</th>
<th>EG</th>
<th>TC</th>
<th>EC</th>
<th>MO</th>
<th>AB</th>
<th>DC</th>
<th>EX</th>
</tr>
</thead>
<tbody>
<tr>
<td>TK</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EG</td>
<td>-.05</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TC</td>
<td>.48*</td>
<td>.02</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC</td>
<td>-.15</td>
<td>.31*</td>
<td>-.31*</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MO</td>
<td>.53*</td>
<td>.16</td>
<td>.54*</td>
<td>-.05</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AB</td>
<td>-.11</td>
<td>.35*</td>
<td>.05</td>
<td>.39*</td>
<td>.01</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC</td>
<td>-.24</td>
<td>.17</td>
<td>-.35*</td>
<td>.43*</td>
<td>-.35*</td>
<td>.39*</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>EX</td>
<td>-.08</td>
<td>.06</td>
<td>-.02</td>
<td>.23</td>
<td>-.06</td>
<td>.31*</td>
<td>.43*</td>
<td>1.0</td>
</tr>
<tr>
<td>LS</td>
<td>.32*</td>
<td>.04</td>
<td>.30*</td>
<td>-.13</td>
<td>.26*</td>
<td>-.26*</td>
<td>-.37*</td>
<td>.33*</td>
</tr>
</tbody>
</table>

* - Probability > .001

Legend
TK = Dispositional Task Orientation
EG = Dispositional Ego Orientation
TC = Perceived Task-Involved Climate
EC = Perceived Ego-Involved Climate
MO = Motivation and Effort
AB = Ability
DC = Deception
EX = External Influences
LS = Learning Strategies
Dispositional Goal Perspective and Perception of Climate.
Task orientation was found to be positively related to perceptions of a task-involved climate while ego orientation was found to be positively related to perceptions of an ego-involved climate. A negative correlation emerged between task orientation and a perceived ego-involved climate as well as ego orientation and perceptions of a task-involved climate.

Attributions for Success and Cognitive Processes. Task orientation was positively related to the belief that motivation and effort caused success and to higher scores on the cognitive processes questionnaire. A negative relationship emerged between task orientation and the belief in deception as a cause of success in physical education.

Similar relationships were found with the perception of task-involved climate being positively correlated with the belief that motivation and effort cause success and higher scores on the cognitive processes questionnaire. A negative relationship was found between a perception of a task-involved climate and the belief that deception is a cause for success.

A positive relationship emerged between ego orientation and the belief that ability is the cause of success. Those students perceiving an ego-involved climate tended to believe that ability and external factors cause success in physical education.

Comparison of Perceptions of Academic and Physical Education Settings
Students reported a perception of a more task-involved climate in math classes ($t=8.2$, $p>.001$) and a more ego-involved climate in physical education classes.
(t=10.7, p>.001). An analysis of variance followed by a post hoc test (Tukey/Kramer) revealed that one of the three schools reported higher perceptions of an ego-involved climate and lower perceptions of a task-involved climate in their math class.

Discussion

The relationship between students' dispositional goal perspective and their perception of a motivational climate was expected and has been evident in previous research in a sport setting. The perception of a motivational climate in an achievement situation is thought to be dependent on both individual differences in goal orientation and the structure of the achievement situation. Unless salient characteristics are present or strategies introduced to create either a task or ego-involved environment it is likely that students generally will interpret the situational climate in a manner consistent with their existing disposition.

Goal Perspective, Attributional Pattern, and Learning Strategies

The relationships found in this pilot study between goal perspective, either dispositional or perceived climate, and beliefs about the causes of success and the use of learning strategies are consistent with results in academic (Nicholls, 1992; Ames, 1992) and sport settings (Duda, 1992; Roberts, 1992).

Different perceived motivational climates should be of particular interest to the educator. Nicholls (1989) has argued that those who see motivation and effort as a primary cause of success are more adaptive in the use of strategies to improve or success in an achievement situation while those who see ability as a primary cause of
success are less adaptive. Students who see ability as the primary cause of success are often trapped in the belief that extra effort or any learning strategy is not going to make a difference since their ability level is seen as stable (Eccles [Parsons], Adler, Futterman, Goff, Kaczala, Meece, & Midgely, 1983). The result is often students that have given up or have reduced effort, a condition that may be especially true in students with low perceived ability (Dweck, 1975).

Motivational Climates

A topic that had not been previously addressed was the comparison of motivational climates in physical education and another academic area. It has been suggested that schools in general have yielded to competitive structures that lead to an ego-involved environment (Nicholls, 1989). However, there is a basis to believe that physical education with an emphasis on competition, grouping by skill level, normative and overt evaluation, as well as public performance tends to promote an ego-involved environment. The findings in this pilot study that math classes were more task-involved and that physical education classes were more ego-involved support this contention.

Conclusions

It has been reported that students that perceive their educational experiences as being mastery oriented or task-involved are more likely to use positive or adaptive achievement strategies (Ames & Archer, 1988, 1990). The key word in this scenario is perception. It is clear that this perception is shaped by goal disposition and the achievement context. To educators looking for ways to promote a positive learning
environment, the question is how to promote task-involvement. The logical place to focus on for intervention is the context or structure of the class. Maehr (1984) has contended that individuals give meaning to or perceive their experiences according to prior experiences or expectations.

In order to structure physical education classes to produce a task-involved climate, careful thought must be given to the characteristics of the class as well as the strategies to be employed in teaching the class. These characteristics and strategies must be salient to the student.
APPENDIX C

Skill Test
French Short Serve Test (Scott, 1941)

Objective: To test ability to serve accurately with a low and short placement.

Directions: The examinee stands behind the short service line, anywhere in the right service area, and takes 20 short serves. Each serve that passes between the net and a rope positioned twenty inches from the top of the net, and lands in the right target area is scored. The serve must be executed legally. Any serve that hits the rope is repeated.

Scoring: A scorer stands in the court adjacent to the target area and records the target score (5, 4, 3, 2, or 1) if the shuttle passes between the net and the rope and lands in the target area, otherwise a 0 is recorded for the score. Two practice trials are permitted.
APPENDIX D

Questionnaires
The Task and Ego Orientation in Sport Questionnaire (TEOSQ)

Read each sentence and mark the box which says how much you agree with it.

<table>
<thead>
<tr>
<th>I FEEL MOST SUCCESSFUL IN PE CLASS WHEN...</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I the only one who can do the play or skill</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I learn a new skill and it makes me want to practice more</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I can do better than my friends</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The others can't do as well as me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I learn something that is fun to do</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others mess-up and I don't</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I learn a new skill by trying hard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I work really hard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I score the most points/goals/hits etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Something I learn makes me want to go and practice more</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I'm the best</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A skill I learn really feels right</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do my very best</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Perceived Motivational Climate in Physical Education

Read each sentence and fill in the circle which indicates how much you agree with it.

<table>
<thead>
<tr>
<th>IN PE CLASS...</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students feel good when they do better than classmates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students are embarrassed when they make mistakes</td>
<td></td>
<td></td>
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<td>Trying hard is rewarded</td>
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<td>Students lose their turn because of mistakes</td>
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<td>The teacher focuses on skill improvement, not who is the best</td>
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<td>Outperforming classmates is important</td>
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<tr>
<td>The teacher pays the most attention to the best students</td>
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<td>Every student's improvement is important</td>
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<tr>
<td>Doing better than others is important</td>
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<td>The teachers want me to improve my score and not worry about anyone else's score</td>
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<td>The teacher favors some students</td>
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<td>Students are encouraged to work on getting better</td>
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<td>The teacher does not worry about who is the best</td>
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<td>Students are encouraged to outperform classmates</td>
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<td>Everyone wants to be the best</td>
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<td>Only the top students &quot;get noticed&quot;</td>
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<td>Students try to improve just based on their own score</td>
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<td>Students are afraid to make mistakes</td>
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<td>All students have an equal chance to participate</td>
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<tr>
<td>Only a few students can be the &quot;stars&quot;</td>
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<tr>
<td>Most students get to participate the same amount</td>
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<tr>
<td>All students are encouraged to do their best</td>
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<tr>
<td>Students don't worry about their mistakes</td>
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<tr>
<td>Students feel left out if they are not among the best</td>
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<tr>
<td>Students give up easily if they are not good</td>
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</tbody>
</table>
Causes of Success Survey

What do you think is most likely to help students do well or succeed in PE class?

<table>
<thead>
<tr>
<th>PEOPLE SUCCEED IN PE CLASS WHEN...</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>They are born naturally talented</td>
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<td>They pretend they like the teacher</td>
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<td>They are just lucky</td>
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<td>They help each other practice and learn</td>
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<td>They know how to make themselves look better than they are</td>
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<td>They are more skilled than others</td>
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<td>They know how to impress the teacher</td>
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<td>They are better than others at taking tests</td>
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<td>They are willing to try things they are not good at</td>
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<tr>
<td>They are interested in improving</td>
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<td>They work really hard</td>
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<tr>
<td>The teacher thinks they do well</td>
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<tr>
<td>They always do their best</td>
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<tr>
<td>They like to learn new skills and activities</td>
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<td>They always try to beat others</td>
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<td>They only try things they are already good at</td>
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<tr>
<td>They like to practice</td>
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<td>They have the right clothes and equipment</td>
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<td>They know how to cheat</td>
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<tr>
<td>They try really hard</td>
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</tbody>
</table>
Learning Strategies Inventory

<table>
<thead>
<tr>
<th></th>
<th>Very Much Like Me</th>
<th>Like Me</th>
<th>Sorta Like Me</th>
<th>Little Like Me</th>
<th>Not Like Me</th>
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</thead>
<tbody>
<tr>
<td>I feel like I can't do well no matter how hard I try</td>
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<tr>
<td>When the PE teacher shows me how to do a skill, I think &quot;Oh, this is easy&quot;</td>
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<tr>
<td>I try to go over the right way to perform the skill I learn in PE in my mind at home</td>
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<td>When I make mistakes during practice I say to myself &quot;I can do better&quot;</td>
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<tr>
<td>I listen closely when the teacher explains a skill during the PE lesson</td>
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<tr>
<td>When the teacher is talking, I find myself thinking about other things</td>
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<td>I avoid practicing anyway I can</td>
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<tr>
<td>When I am practicing a skill, I try to think how it is like something I already know</td>
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<td>When the teacher tells me what I am doing wrong, I do not understand it</td>
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<tr>
<td>When I practice, I try to think only about the skill I am working on</td>
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<tr>
<td>I only try hard when the teacher is looking at me</td>
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<tr>
<td>When the teacher explains a skill, I practice the skill in my mind</td>
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<tr>
<td>When I am practicing skills in PE class, I try to get better each time</td>
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<tr>
<td>After I watch the teacher perform a skill, I can do it right</td>
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<tr>
<td>In PE class I try to stay in back of the line so that I won't have to take as many turns</td>
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<tr>
<td>I like to learn new and different games and skills</td>
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<td>I feel like I can do well if I try hard</td>
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<td>I would rather stay in the classroom than go to PE class</td>
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<tr>
<td>If I don't understand how or what to do, I ask the teacher for help</td>
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<tr>
<td>When I listen and watch the teacher explain a skill, I think &quot;Oh, I can do that&quot;</td>
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<td>If the skill is too difficult at first, I know I can figure out how to do it</td>
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<td>If I am not good in practice, I keep trying hard</td>
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<tr>
<td>When I cannot do a skill in PE, it is because it is too hard</td>
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<td>I try to remember the important things the teacher says about a skill activity when I am practicing</td>
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<tr>
<td>I talk to myself during practice to help me do better</td>
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<tr>
<td>When the teacher tells us what skill to do, I hurry to get ready so I will have more time to practice</td>
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<tr>
<td>I only like to do games and activities that I am good at</td>
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<tr>
<td>I work hard during practice in PE</td>
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<tr>
<td>When the PE teacher tells us what to do, I stay in back of the line so I won't have to work as hard</td>
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<tr>
<td>When I can do a new skill in PE, I think it is because I am lucky</td>
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<tr>
<td>I try to practice skills I learn in PE class at home</td>
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<td>During PE class I give up when the skill is hard</td>
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<td>I feel bad when my skills are not as good as my classmates</td>
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<tr>
<td>During class, I talk to my friends when I should be practicing</td>
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<tr>
<td>I find that new games and skills are fun once you give them a try</td>
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<tr>
<td>In PE class I hurry to get in line so that I can get as many turns as I can</td>
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<tr>
<td>When I practice a skill, I try to figure out what I am doing wrong</td>
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<td>I set goals for myself during practice</td>
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<td>I miss important things the PE teacher says because I am not paying attention</td>
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<tr>
<td>It is hard for me to correct the things the teacher says I am doing wrong</td>
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APPENDIX E

Survey
GOAL PERSPECTIVE IN PHYSICAL EDUCATION CLASSES

**TASK-INVOLVEMENT.** A perspective in which the development or demonstration of ability is a function of meeting self-imposed standards. Goals focus on mastery of a skill or task and success is based on whether a task is mastered or improvement is achieved.

**EGO-INVOLVEMENT.** Refers to a situation in which the development or demonstration of ability is in relationship to others. Criteria for success or failure in a task is based on comparison to the performance of others.

Educational research has asserted that the individual goal perspective that a student adopts is influenced by the climate that prevails in a particular class. Would you identify characteristics and strategies you would expect to find in both a task-involved and an ego-involved environment in physical education classes.

CHARACTERISTICS:

TEACHING STRATEGIES:

GRADING PROCEDURES:
APPENDIX F

Parental Consent Form
Dear Parent:

Your son's/daughter's physical education teacher has agreed to participate in a research project on motivation in achievement situations. Students who participate in the project will complete several questionnaires, a skill test, and report their thoughts about their physical education class. All of the research will be conducted during the regular physical education class.

The identity of each student who participates will be confidential and names of the students will not be used in any way. If you will give permission for your child to participate in this project, please sign the form at the bottom of this page and return it to the physical education teacher.

Thank You,

Jerry Boone
Department of Kinesiology
Louisiana State University
Baton Rouge, LA 70803

I give my permission for my child to participate in a research project while participating in his/her physical education class.

(date) (parent or guardian)
APPENDIX G

Sample Lesson Plan
LESSON PLAN #1

Date: ______________________

Unit: Badminton

Goal(s): To introduce the forehand grip and the high deep serve

Materials: Badminton racquet for each student, shuttlecocks, nets

Instructional Techniques:

1. Forehand grip
   a. hold the head of the racquet perpendicular to the floor and "shake hands" with the racquet
   b. the grip should be with the fingers rather than the palm
   c. the fingers should be slightly spread with the forefinger extended even further out
   d. the thumb wraps around the handle and rests on the middle finger
      and the butt of the racquet should be touching the heel of your hand
   e. the grip should be a loose one to allow free wrist movement

2. High deep serve
   a. take a position near the center line and turn sideways to the net with your feet about shoulder width apart and with the racquet side foot back
   b. using the thumb and forefinger hold the shuttle at its base with the arm extended to the front at about shoulder height
   c. using the forehand grip cock the racquet so that the racquet is behind the wrist before dropping the shuttle
   d. drop the shuttle in a manner that it drops straight down without tumbling
   e. shift the weight forward to the front foot and swing the racquet through the shuttle making contact below the waist level

Procedures:

1. Forehand Grip
   a. demonstrate the forehand grip
   b. have each student place the palm of the dominant hand on the face of the racquet
   c. slide the hand down the racquet and shake hands with the grip of the racquet
2. High deep serve
   a. demonstrate the serve
   b. have each student assume the proper position
   c. each student should drop the shuttle out in front of the body a few
times to find the proper position
   d. coordinate the swing with the drop

Drills:

1. Service drill - this drill is done with a partner. The server hits the high
deep serve to the correct court. The partner lets it drop to see where it
will land in the court. The partner then picks it up and serves it back.

2. Target drill - rectangular targets are set for the server to serve into.

Points of Emphasis:

1. Focus on improvement and learning new skills
2. Give equal attention to everyone
3. Give positive reinforcement for effort

Closure:

1. Invite about three students to verbally describe important coaching
   points to remember in the high deep serve
2. Reinforce any coaching point not covered by the students
APPENDIX H

Student Thought Questions Sample Responses
Student Thought Questions Sample Responses

1. What changes do you try to make when you are not successful in hitting the birdie?
   a. I try to hold the racquet different
   b. I try to concentrate more
   c. Just hit it
   d. Act like it is someone else's head
   e. To do it right
   f. To swing at the right time

2. When you are practicing the serve in badminton, what are you thinking about?
   a. Going home
   b. Looking at the target
   c. Getting it over the net
   d. Winning
   e. Scoring a point
   f. Keeping my eye on the birdie

3. Is there anything you can do to make yourself a better badminton player? If so what is it?
   a. Nothing
   b. I need to work harder
   c. Practice at home
   d. I can't do any better

4. What do you like or dislike about the game of badminton
   a. Like
      1) Having fun
      2) Good exercise
      3) Playing the game
      4) Something to do besides basketball
      5) Something new
   b. Dislike
      1) I can't play good
      2) Boring
      3) Having to practice
      4) I don't like the serve
      5) Not enough time playing a game
VITA

Jerry Wilson Boone was born in Meridian, Mississippi on November 8, 1945. He graduated from Glen Oaks High School in Baton Rouge, Louisiana in June of 1963. In May of 1969, he graduated from Southeastern Louisiana University with a Bachelor of Arts.

Jerry began his graduate studies at Central State (OK) University in the fall of 1969. He completed his Master of Teaching degree in the summer of 1970. In the fall of 1970, Jerry began teaching and coaching at Oklahoma City Southwestern College.

Jerry was married to the former Glenda Lanette Rodgers of Campo, Colorado on August 16, 1970. Jerry and Glenda have two children, Kristen, age 20, and Erin, age 17.

In the fall of 1981, Jerry began teaching and coaching basketball at Sul Ross State University in Alpine, Texas. In the fall of 1984, he accepted the position of basketball coach and physical education department chairman at Jimmy Swaggart Bible College in Baton Rouge, Louisiana. In 1992, he became the intramural director and taught physical education at Lee College in Cleveland, Tennessee. In the fall of 1993, Jerry accepted his current position as men’s basketball coach and assistant professor at Emmanuel College in Franklin Springs, Georgia.

Jerry began his doctoral degree at Louisiana State University in 1989 and expects to complete the Doctor of Philosophy degree in May, 1995.
DOCTORAL EXAMINATION AND DISSERTATION REPORT

Candidate: Jerry W. Boone

Major Field: Kinesiology

Title of Dissertation: Achievement Goals and Motivational Climates for Physical Education

Approved:

[Signatures]

Major Professor and Chairman
Dean of the Graduate School

EXAMINING COMMITTEE:

[Signatures]

Date of Examination:

December 15, 1994