PERCEIVED MOTIVATIONAL CLIMATES AND ACHIEVEMENT GOAL ORIENTATIONS OF STUDENTS WITH RACIAL AND ETHNIC DIFFERENCES IN MIDDLE SCHOOL PHYSICAL EDUCATION CLASSES

By

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A THESIS PRESENTED TO THE GRADUATE SCHOOL OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN EXERCISE AND SPORT SCIENCES

UNIVERSITY OF FLORIDA

2005
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ACKNOWLEDGMENTS

First and foremost my thanks go to my Father in heaven for His anointing and blessings that are ever present in my life, for I would not have even been in this position without the guidance of His hand. I thank Him for this opportunity to enrich my life as I attempt to enrich the lives of others.

I would also like to send my deepest gratitude to John Todorovich, Ph.D., for his guidance as my advisor, committee chair, and mentor. His intelligence and patience are much appreciated and honored as admirable qualities.

I would like to thank my committee members, David Fleming, Ph.D., Delores James, Ph.D., and Lisa Lindley, Ph.D., for their assistance in producing this study and refining my work. Their time and patience have greatly aided in the construction of this document.

Appreciation also goes to Williston Middle School and all of the people who were involved in this process at the school. Thanks go to Sarah Todorovich and Norm Krueter for their patience and assistance.

Additional thanks go to all of my friends, instructors and fellow colleagues for supporting me with their prayers, encouragement, and enthusiasm.

Finally, I would like to thank my mother, grandmother and family for their ever present support in my pursuit of life and happiness. Their never-failing love has truly lifted me and supported me in all of my endeavors as a young man. Thanks and love go to all who have contributed to my success.
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The instructor in a physical education setting may intentionally or unintentionally establish a motivational climate. Students may perceive the motivational climate in the physical education setting as task-oriented, ego-oriented, or as neutral. Stereotypes about race and ethnicity in sports have created misperceptions about participation in various sports. Often those stereotypes are negative and create pressure on those who are associated with the group with whom the negative stereotype is coupled. The purpose of this study was to determine if students of different racial and ethnic backgrounds perceive the motivational climates of two middle school physical education classes differently. The Physical Education Climate Assessment Instrument was used to measure the actual motivational climates of the classes. The Task and Ego Orientation in Sport Questionnaire was used to measure the students’ achievement goal orientations, while the Perceived Motivational Climate in Sport Questionnaire was used to measure how the students perceive the motivational climates.
Results of data analysis indicated that there were differences in Perceived Motivational Climate in Sport Questionnaire scores of students with different racial and ethnic backgrounds when considering the entire study sample. No significant differences were found in Task and Ego Orientation in Sport Questionnaire scores. Furthermore, results indicated that there were significant correlations between Task and Ego Orientation in Sport Questionnaire and Perceived Motivational Climate in Sport Questionnaire scores when considering the racial and ethnic differences of the students of the entire sample, females only, African-American females, and males only. Neither a strong task- nor ego-involving climate was established by the instructors; thus analysis of any differences between student perception of and the establishment of the actual motivational climate could not be conducted. Results from this study do not clearly indicate significant differences between students; however, such data indicate that further study in this domain might lead to further, more compelling conclusions.
CHAPTER 1
INTRODUCTION

The emergence of sports in worldwide cultures has created discussion in many arenas. Of these issues, the involvement of race and ethnicity in sport has garnered attention, and has led to the development of many stereotypes (e.g., Harrison, 2001; Hoberman, 1997; Stone, Smojeling, Lynch, & Darley 1999). These stereotypes are often associated with the assumption that members of a particular race have either a positive or negative association with a particular sport. The effects of such stereotypes can be harmful to members of a racial/ethnic group who feel threatened by the existence of a negative stereotype. While stereotypes have been demonstrated to produce emotional, social, and physical damage, research on the effects of such stereotypes on students in physical education have been minimally studied.

The environment in which an individual is asked to perform is potentially helpful or harmful (Duda, 1996). Within achievement settings, an individual who elicits particular behaviors from others fosters a certain motivational climate. Specifically, teachers create a motivational climate for their class, either intentionally or unintentionally, that elicits adaptive or maladaptive behaviors. The development of such an environment can foster students to adopt adaptive behaviors (e.g., use of deep strategies in information processing, persistence at a task, enjoy effort output, preference for challenging tasks) that are considered by many researchers to be valued (Ames & Archer, 1988; Elliott & Dweck, 1988; Nolen, 1988). Conversely, the motivational climate may cause students to adopt maladaptive behaviors (e.g. surface level learning strategies,
negative feelings when unsuccessful, avoidance of challenging tasks, beliefs that only high ability produces success) that many may consider unwanted (Elliott & Dweck, 1988; Jagacinski & Nicholls, 1987; Nolen, 1988). The establishment of such motivational climates directly affects the performance of participants in that particular climate, and like negative stereotypes, can have harmful effects on the students.

Research regarding achievement settings and motivational climates has led to the emergence of achievement goal theory in directing research on student motivation. This theory is all inclusive of student orientation and achievement environment and has been widely used in research on motivation in the classroom (e.g., Nicholls, 1984). Achievement goal theory considers the student’s goal orientation as a mediating factor in their motivation to perform a task. Since bringing achievement goal theory to the attention of researchers in education, Nicholls has influenced other researchers to examine the academic classroom setting (e.g., Ames, 1992a, 1992b), as well as within the physical education setting (e.g., Todorovich & Curtner-Smith, 2002, 2003).

Understanding that individuals have a disposition, or orientation, which favors either a task- or ego-orientation is important in understanding student motivation. Task-orientation is an individual’s disposition that effort and ability are undifferentiated in the pursuit of success (Nicholls, 1984, 1989). Individuals with this orientation believe that success develops from the exertion of effort and ability (Walling & Duda, 1995). Believing that both constructs lead to success is essential in distinguishing task-orientation from ego-orientation.

Individuals with an ego-orientation have a disposition that effort and ability are differentiated constructs and that ability is primarily needed in order to succeed at a task.
These individuals often display self-consciousness about their ability to perform a task (Thorkildsen & Nicholls, 1988). While success may be attributed to other factors, the differentiation of effort and ability is the main identifier of ego-orientation.

Six principles have been identified as contributors to the establishment of a motivational climate: task, authority, rewards, grouping, evaluation, and time, referred to as TARGET (Ames 1992a, 1992b; Epstein, 1983, 1988, 1989). Task refers to the teacher’s presentation of a task during a learning activity. Authority is identified by the party who decides what activity will be performed. Rewards may be given privately or publicly, thus affecting the motivational climate. Grouping refers the way in which students are asked to complete tasks as individuals, pairs, and small groups among others. Evaluation may either be based on individual improvement or peer comparison. Finally, time refers to the amount of time given to complete an activity in the achievement setting. The presentation of these principles has been shown to influence the establishment of task- and ego-involving climates, and can lead to the demonstration of behaviors often seen in each of the motivational climates.

The method used to establish a motivational climate is effective if the student perceives the climate in the way in which it is intended. Perceptions of students within a motivational climate may lead them to behave in a way contrary to their goal orientations and in favor of the behaviors of the achievement setting (Ames & Archer, 1988). The perceptions of students are important in understanding how different environmental influences of the motivational climates affect their performance and motivation.

As mentioned earlier, discussions and theories around race and ethnicity influencing performance in sport have existed for over one hundred years (Wiggins,
Within such discussions, socialization has led to dichotomous thinking and the development of stereotypes (Dyer, 1980). Stereotypes have been made about the association between race and sport – often neglecting racial and ethnic components as parts of the conversation. Such thinking has contributed to the establishment of stereotypes that are often viewed as negative.

Research examining the existence of racial stereotypes in physical education is limited. It may be assumed that the same stereotypes that exist in the sports arena may exist in the physical education arena due to the close nature of activities (e.g., Hargreaves 1986; Harrison, 2001; Hayes & Sugden, 1999). While this assumption can be made, little research has been conducted to explain the effects of such stereotypes on the attitudes and performance of students in the physical education setting. Particularly interesting is the effect of negative stereotypes on the performance of students in class.

Negative stereotypes can affect the way in which individuals behave and perceive another group or even their own group (Steele, 1997). If such negative stereotypes are generally known, a threat to individuals associated with the group being negatively stereotyped may form, thus affecting their perceptions and actions. This theory is known as stereotype threat (Steele, 1997).

Stereotype Threat Theory (Steele, 1997) explains that pressure may exist when a negative stereotype is self-relevant to individuals of a group, and there exists a possibility that they will conform to the stereotype or be judged in terms of it. Stereotype threat has five general features that explain who may be affected, why it may affect them, how much it affects them, what they believe about it, and the harmful possibilities of the negative stereotype (Steele, 1997). Steele (1997) began research on stereotype threat in
academics and standardized testing, however some research on stereotype threat has been conducted in the area of sports (Stone, Smojeling, Lynch, & Darley, 1999).

Stereotype threat in sport exists among different groups and in different contexts. While different groups may participate in the same sport or activity, negative stereotypes that exist about a particular group may affect the performance of individuals in that sport according to their group affiliation. The salience of stereotype threat based on athletic performance can adversely affect all groups, and it has been shown to do so in the sport of golf (Stone, Smojeling, Lynch, & Darley, 1999). Researchers claim that the presentation of performance and the cues that help to establish an athletic performance environment contribute to the impact of stereotype threat to individuals in that setting. Stone, Smojeling, Lynch, and Darley found that black athletes perceived a stereotype threat when presented with a negative stereotype about intelligence in sport. They also found that white athletes perceived a stereotype threat when presented with a negative stereotype about physical performance in sport. Both groups were said to have performed below their normal abilities.

The influence of motivational climates (e.g., Theeboom, DeKnop, & Weiss, 1995; Todorovich & Curtner-Smith, 2002, 2003; Treasure, 1997) and stereotype threats (e.g., Steele, 1997; Stone, Smojeling, Lynch, & Darley, 1999) have been shown to affect the way in which individuals perceive and perform in an achievement setting. Both motivational climates and stereotype threat have similar elements that lead to the establishment, maintenance, and expulsion of negative perception and performance. While these elements have been identified, research examining the relationship between motivational climates and stereotype threat in physical education has not been examined.
The negative effects (e.g., decrease in performance ability) that may develop due to the existence of an undesirable motivational climate and a stereotype threat are sufficient to examine a potential scenario when such effects may occur.

Two physical education classes at a rural middle school in the southeast United States were observed and videotaped over ten consecutive class meetings. One class was made up of only females (N = 23) and taught by a female instructor. The other class was made up of only males (N = 31) and had a male instructor most of the class meetings. Instructors were asked to perform their normal day-to-day operations as there was no interference with the physical education program by the principle investigator. A video camera and microphone were used to record the actions and words of each instructor for later coding of the TARGET principles and confirmation of the actual climate of each class using the Physical Education Climate Assessment Instrument (PECAI; Curtner-Smith & Todorovich, 2002). Following the conclusion of the lesson on the tenth day of observation, a questionnaire packet was administered to participants. The questionnaire packet consisted of the Perceived Motivational Climate in Sport Questionnaire (PMCSQ; Seifriz, Duda, & Likang, 1992), the Task and Ego Orientation in Sport Questionnaire (TEOSQ – modified for physical education; Walling & Duda, 1995), and a demographic form created to gather information about participant age, grade, gender, and race/ethnicity. All students who returned a signed informed consent form were permitted to be videotaped and complete the questionnaire packet.

Participants were separated into three groups according to their self-reported race/ethnicity from the demographic form. Those students selecting “Caucasian or white (not if Hispanic origin)” were placed in the Caucasian group. Those selecting “African-
American or black” were placed in the African-American group. Those students selecting any of the remaining choices (“Hispanic/Latino,” Asian or Pacific Islander,” Native American,” or “Multiracial”) for race/ethnicity on the demographic form were placed in the Other group.

Data collected using the above procedures were analyzed according to four research questions. The first research question sought to find if any differences existed in the perception of the motivational climate between students of different racial and ethnic backgrounds. A 3 (race/ethnicity) by 2 (gender) by 4 (PMCSQ group) analysis of variance (ANOVA) test was ran, and a significant main effect was revealed for the entire sample for race and gender, and a significant interaction of race by gender was revealed by the data. A post-hoc Tukey test revealed no significant differences. When considering the females only, a significant main effect for race was revealed using a 3 (race/ethnicity) by 4 (PMCSQ group) ANOVA. When considering the males only, a 3 (race/ethnicity) by 4 (PMCSQ group) ANOVA revealed no significant main effect.

The second research question sought to find if any differences existed in the achievement goal orientation between students of different racial and ethnic backgrounds. Similarly to the analysis procedures for the first question, a 3 (race/ethnicity) by 2 (gender) by 4 (TEOSQ group) ANOVA was ran for the entire sample and a 3 (race/ethnicity) by 4 (TEOSQ group) ANOVA was ran for the female and male groups only. No significant main effects were revealed for the entire sample, females only, or males only. Such results indicate that there were no differences among racial and ethnic groups’ task and ego orientations.
The third research question sought to find if any relationship existed between achievement goal orientation and perception of the motivational climate among students of different racial and ethnic backgrounds. A Pearson Product Correlation test was conducted for the entire sample, females, Caucasian females, African-American females, males, Caucasian males, African-American males, and Other males. (Other females were excluded because there was only one case.) Results revealed a significant correlation between TEOSQ task and PMCSQ task, and TEOSQ ego and PMCSQ ego for the entire sample. For the female group, results revealed a significant correlation for TEOSQ task and PMCSQ task, while for the African-American females a significant correlation was found between the TEOSQ ego and PMCSQ ego. No significant correlation was found for the Caucasian females. Results revealed a significant correlation for the TEOSQ task and PMCSQ task, and TESOQ ego and PMCSQ ego for the male group. No significant correlation was found when considering the race/ethnicity groups individually.

The fourth research question sought to find if any differences existed in the establishment of an actual motivational climate and the student perception of that motivational climate. Since both actual motivational climates established by the instructors were coded as neutral (neither task- nor ego-involving), analysis could not be conducted. Thus, no differences in the motivational climate and student perception of the climate could be determined.

**Purpose of the Study**

The purpose of this study was to examine the achievement goal orientation and perceived motivational climate of racially and ethnically diverse middle school students in physical education classes to see if student perceptions or orientations vary across racial and ethnic populations. While it may be assumed that students in a motivational
climate are likely to perceive the climate in the same manner, differences in race and ethnicity may contribute to differences in perceptions of the climate based on potential stereotype threats. While stereotype threats are likely not going to be directly identified, research shows that performance and perceptions of a task can affect members of different racial groups in a variety of ways (e.g., physical performance, mental performance). The identification of the perceptions and goal orientations of students of different racial and ethnic backgrounds in a motivational climate was the main focus of this study.

The research questions guiding this study were:

Do differences exist in the perceptions of motivational climates between middle school students of different racial and ethnic backgrounds?

Do differences exist in the achievement goal orientation between middle school students of different racial and ethnic backgrounds?

What, if any, relationship exists between achievement goal orientation and perception of the motivational climate among middle school students of different racial and ethnic backgrounds?

What differences, if any, exist in the establishment of an actual motivational climate and the student perception of that motivational climate?

**Definitions**

*Achievement goal orientation* – disposition of how an individual may conceive of effort and ability.

*Achievement setting* – an environment created that allows for the students, both as a group and as individuals, to be moved to participate in a physical activity within the class.
Co-education – class consisting of both male and female students.

Ego-involving – an environment created to elicit the behaviors most closely associated with ego-orientation.

Ego-orientation – disposition that effort and ability are differentiated concepts and ability is needed to complete and succeed at a given task.

Ethnicity – classification according to common racial, national origin, or cultural background.

Motivation – that which leads students to think and act.

Motivational climate – a particular in-class environment promoted by what teachers say and do.

Negative stereotypes – stereotypes that may be demeaning in nature to a particular group.

Perceived motivational climate – the way that a student perceives an established motivational climate.

Race – biological characterization of humans possessing similar traits, in this case skin color, transmitted by decent.

Single-gender – class consisting of only one gender group.

Stereotypes – beliefs about the personal characteristics of a group, and these beliefs are often over-generalized and incorrect.

Stereotype threat – the threat of conforming to or being judged in terms of a negative stereotype.

Task-involving climate – an environment created to elicit the behaviors most closely associated with task-orientation.
Task-orientation – disposition that effort and ability are undifferentiated concepts and both are needed to complete and succeed at a given a task.

Limitations

1. Establishment of strong task- and ego-involving motivational climates may not occur.
2. Generalization may be limited due to the (rural) location and (small) size of the sample population.
3. Motivational climate establishment assurance depends on review of videotaped physical education classes and the proper functioning of videotaping equipment.
4. Self-reported race/ethnicity data depends on identification and recognition of student.
5. Teacher and student lack of consistent attendance in class.

Delimitations

1. Use of single gender classes may have affect on results.
2. Same gender teachers may have affect on classes, thus affecting the results.
3. Teacher race/ethnicity may have an affect on classes, thus affecting the results.
4. Sampling of the participants was based on a convenience population.
5. Recruiting of participants was based on selection of two classes at the beginning of the school day.

Assumptions

- Participants will be honest in answering questions on questionnaires.
- Teachers will establish intended motivational climate.

Significance of Study

Bloom and Willard (2002) identified race as the proverbial elephant in the middle of the road of sports that everybody sees, but few dare to acknowledge. The simple lack of research in physical education gives evidence of the lack of acknowledgement of this construct in the field of research in physical education. The issue of race in sports must be addressed in a scholarly manner. However, few scholars and researchers are willing to recognize and address the issue. Thus, there exists a small amount of research from which to draw and make educated assumptions. The elephant must be acknowledged.

When racial differences are an inherent part of life, the significance of a study like this is great. The establishment of race as a divider and separator in culture is settled.
However, recognizing the separation is not enough. Attempting to understand the issues that are involved within different racial and ethnic groups helps alleviate some of the misunderstandings from which society currently suffers. The elephant should not only be acknowledged, but it needs to be understood why it is standing in the middle of the road.
CHAPTER 2
LITERATURE REVIEW

Research on motivational climates and achievement settings and goals in physical education is plentiful, especially when compared to that which discusses race and ethnicity in physical education. Research on motivational climates in both a classroom and physical education setting have allowed researchers and teachers to discuss, strategize, and implement effective material into the teaching practice. The progression of the discussion of possible strategies to be implemented into the teaching practice in physical education where race and ethnicity are both considered and the focus has likely been hindered due to the minimal amount of research conducted in the physical education setting as it pertains to race and ethnicity. This is not a direct comparison of research in motivational climates in achievement settings and research in race and ethnicity in physical education. Rather, the comparison is used as evidence of the importance of increased research needed in the latter area as it will undoubtedly lead to more positive outcomes in the physical education class and field of research. Race and ethnicity are important social issues that are often ignored despite their resounding presence and they are issues that thus far have not received proper attention in physical education literature. Over the course of this literature review, a connection between the motivational climates in achievement settings and negative racial and ethnic stereotypes will unfold, displaying the significant work that has already been performed and highlight the areas that are less saturated and in need of more investigation.
Achievement Settings

In search of success in the physical education class, it is important that the teacher be prepared, but more so that the students be participants in the activities. Settings must be created that allow for the students, both as a group and as individuals, to be moved to participate in physical activity within the class. The students must have motivation to elicit the action of participation in the setting. Thus motivation, and the intricacies thereof, is often sought to attempt to understand what leads to greater and more effective student participation. If it can be understood why students are moved to do something, then it may lead to a greater implementation of tactics designed to help elicit those responses.

Motivational perspectives of factors that lead to action in the social and psychological arenas are numbered as research is plentiful in these areas. Both in the classroom and physical education setting, research has been conducted to prove and disprove theories and assumptions about student motivational factors. Among the list of factors of motivation are ability and efficacy beliefs (Bandura, 1977, 1997), control and autonomy beliefs (Connell & Wellborn, 1991), intrinsic and extrinsic motivation (Deci & Ryan, 1985), interest (Krapp, Hidi, & Renninger, 1992), subjective task value (Wigfield & Eccles, 1992), and achievement goal theory (Nicholls, 1989). The latter of these is used to attempt to understand why a student would want to do an activity, while the others are used to explain performance of activities. While each of these factors of motivation are all important in understanding student motivation, achievement goal theory will be the focus and theoretical model of this paper.
Achievement Goal Theory

Achievement goal theory is often considered the best theory when evaluating and examining student motivation as it considers both the orientation of the student toward a task and the environment in which the student is participating. Each presented task has an ability to influence the student; however, that can be mediated by the student’s goal orientation in an achievement setting. Motivated behavior is considered the relationship between requirements of a task and the environment, with an internal disposition toward an achievement setting. The internal disposition may also be considered the goal orientation. An achievement setting is greatly controlled by the teacher as they have the ability to incorporate cues that will lead to the development of an achievement setting that will interact with a student’s goal orientation. Achievement goal theory is all inclusive of student orientation and achievement environment, thus it is the main theoretical framework of this study.

Achievement goal theory has been used by researchers to investigate motivation in the classroom setting since the 1980’s (Nicholls, 1984). While achievement goal theory may have its roots in 1946 when Alper (1984) attempted to elicit task- and ego-involving responses from study participants, it is Nicholls (1984, 1989) who is considered to have brought achievement goal theory to the attention of researchers in the education arena. Numerous researchers have used achievement goal theory as the theoretical framework of their study since the establishment of its credibility and value in motivational research (e.g., Ames, 1992a, 1992b).

Achievement Goal Orientations

Achievement goal orientations are produced by the way in which an individual may conceive of effort and ability (Nicholls, 1984, 1989). Despite the assumption that most
people are able to define and describe vaguely of what effort and ability are composed, these two entities may be linked in the evaluation of success. This is known as the undifferentiated perspective. Also, when placed in an achievement setting, individuals may separate effort and ability in their evaluation of success. This is known as the differentiated perspective. Differentiated and undifferentiated perspectives aid in the identification of either a task- or ego-orientation. The undifferentiation perspective is most closely tied to task-orientation as the differentiated perspective is tied with ego-orientation.

Individuals tend to have an orientation that leans toward either a task- or ego-orientation based on their perceptions of ability and effort in relation to success. As mentioned previously, an individual with an undifferentiated perspective of ability and effort is most likely to be task-oriented. However, because a person has a particular orientation does not disallow them from becoming task-, or in this example ego-involving. The involvement in a particular setting that may be established by the incorporation of particular cues to elicit a given achievement setting may direct an individual with a task-orientation into an ego-involving climate. The establishment of such cues can place an individual in a setting that will cause for either task- or ego-involving responses from the individual. This is important for understanding the ability of a teacher to manipulate any environment into either a task- or ego-involved setting. Researchers, such as Todorovich and Curtner-Smith (2002, 2003), have provided valuable and validating research that shows that an achievement setting may be manipulated by the teacher to establish either a task- or ego-involving climate.
Task-Orientation

Task-orientation is simply an individual’s disposition that effort and ability are undifferentiated concepts and both are needed to complete and succeed at a given task (Nicholls, 1984, 1989). Task-oriented individuals tend to view success and evaluate “their competence in terms of their own effort and improvement” (Walling & Duda, 1995). When given a task, an individual with a task-orientation is likely to view the route to success as the fulfillment of both effort and ability. Thorkildsen & Nicholls (1998) reported that task-orientation is associated with beliefs that interest and effort cause success, while Newton and Duda (1993) indicate that effort and a de-emphasis of external factors lead to success. Individuals with an undifferentiated perception of ability and effort often seek to accomplish tasks that are more challenging because easier tasks are not seen as ones that will improve their skills, performance, or ability (Jagacinski & Nicholls, 1987). Due to the undifferentiated perception of ability and effort, individuals in this realm are considered task-oriented for their belief that the performance of a task is conceived as an end in itself, and those exhibiting this behavior during a task are labeled task-involving.

Individuals may have a task-orientation that is measured anywhere from high to low. High task-oriented students believed success is achieved through intrinsic interest, effort, and cooperation (Walling & Duda, 1995). Given a high, or strong task-orientation, an individual may be more inclined to adopt more adaptive behaviors associated with task-orientations in achievement settings. On the other hand, those who possess a low task-orientation may be less likely to adopt the adaptive behaviors of task-orientation. Adaptive behaviors most often adopted include the use of deep strategies in the processing of information (Nolen, 1988), persistence at a task (Elliott & Dweck, 1988),
pleasure with effort output (Jagacinski & Nicholls, 1987), and preference for challenging tasks (Ames & Archer, 1988).

**Ego-Orientation**

When contrasted with task-orientation, ego-orientation is seen as an individual displaying self-consciousness about their ability to perform a task in an achievement setting. Individuals with an ego-orientation or ones that are ego-involved believe, or display, the differentiated perception of ability and effort. They believe that they are less capable if another person were to put forth less effort while doing the same task and achieving the same success. Thus, they also believe that they would be more successful if they were to put forth less effort and do better at a task than someone else. Ego-orientation is associated with beliefs that competitiveness causes success (Thorkildsen & Nicholls, 1988). Duda, Fox, Biddle, & Armstrong (1992) found that ego-orientation is linked to work avoidance, and individuals believe that the possession of ability and deceptive tactics and external factors lead to success. While research shows that individuals may attribute success to many different factors, the differentiation between effort and ability remains the main identifier of ego-orientation.

While task-oriented and task-involved individuals were shown to adopt adaptive behaviors, researchers have found ego-oriented and ego-involved individuals to adopt maladaptive behaviors in achievement settings. Though there is research to support the adoption of maladaptive behaviors by individuals with an ego-orientation, the findings are less consistent than those associated with adaptive behaviors and task-orientation. Despite the limited research in maladaptive behavioral adoption, individuals with an ego-orientation tend to use surface-level strategies in learning (Nolen, 1988), display negative feelings when not successful (Jagacinski & Nicholls, 1987), avoid the challenge of tasks...
and believe that success is only achieved when someone possesses high ability (Walling & Duda, 1995). Individuals with an ego-orientation may be described as possessing a high, moderate, or low ego-orientation. Since the same can occur with task-orientation, beliefs about the combination of both orientations have been hypothesized and studied.

**Task- and Ego-orientation Combinations**

Research suggests individuals usually have one orientation or the other, however it is possible that a combination of task- and ego-orientation may be present within an individual and within the achievement setting. An individual may have achievement goals that reflect more of one orientation than the other, allowing them to be classified as high, or extreme in a particular orientation. High task-oriented/low ego-oriented achievement goals are reported as being the most desirable and successful in producing desirable behaviors related to achievement (Pintrich & Garcia, 1991). Research shows that college students who demonstrated a high task-oriented/low ego-oriented achievement goal combination often made higher grades and used cognitive strategies more than those who had different achievement goal combinations (Bouffard, Boisver, Vazeau, & Larouche, 1995). This information helps explain some of the complexities of what an individual with an achievement goal combination contemplates in an achievement setting, and how the environment can cause one orientation to surface more so than the other.

**Motivational Climate**

Ames (1992a, 19992b) reported on the classroom motivational climate describing the effects of what teachers say and do to promote a particular motivational climate in the classroom, and how those effects may influence the achievement goal orientations and
involvement of students. Motivational climates that focus on self-improvement and skill learning encourage a task-orientation. In contrast, motivational climates that focus on peer-related performance and comparisons of ability encourage ego-orientation (Ames, 1992a, 1992b). Duda (1996) explained that climates designed to elicit a task-orientation are task-involving climates, while climates designed to elicit an ego-orientation are ego-involving climates. It is important to understand the dynamics of classroom structure in producing motivational climates that make different types of achievement goals salient, and understand how those climates elicit different patterns of motivation (Ames, 1992b).

While Ames looked at the motivational climates of an academic classroom, researchers have looked at the affects of motivational climates in the physical education setting (Carpenter & Morgan, 1999; Curtner-Smith & Todorovich, 2002; Xiang, McBride, & Solmon, 2003). The research produced by Ames (1992a, 1992b) gives the principles by which researchers in physical education use to assess and influence motivational climates. Ames, along with Epstein (1983, 1988, 1989), essentially described six principles used in affecting a motivational climate. The teacher may alter each of these principles in order to elicit the motivational climate desired. The six principles are task, authority, rewards, grouping, evaluation, and time, and referred to using the acronym TARGET.

Understanding the TARGET principles is essential for understanding the way in which a motivational climate can be created by the teacher. A motivational climate can be created simply by the presentation of the task (Ames, 1992a, 1992b; Epstein, 1983, 1988, 1989). When attempting to elicit a task-involving climate, a teacher may afford students the opportunity to participate in activities that will produce self-regulated
individual improvement. The teacher may allow the students to practice skills that will lead to the fulfillment of the students’ individual goals. A teacher may also create an ego-involving climate through presentation of a task that calls for everyone to perform the same activity. Rather than allowing for students to dictate in what area each of them needs to improve, the teacher assigns a specific task that is to be performed by the entire group.

The effect of authority is apparent in situations in which a motivational climate is established (Ames, 1992a, 1992b; Epstein, 1983, 1988, 1989). In the physical education setting, the teacher ultimately has authority over the class. However, a teacher may decide to delegate some of the authority to the students when choosing activities and goals. In a task-involving climate, a teacher will work with the students allowing them to set individual goals and also work toward those individual goals. It is important that this is done within the framework of the class. The establishment of an ego-involving climate requires that the teacher dictate goals that the students will work toward as a class. There is no freedom for the establishment of personalized individual goals, rather the students are expected to perform the same activities to meet the same goals.

The rewards, and the way in which those are both given by the teacher and received by the student may dictate the development of a motivational climate (Ames, 1992a, 1992b; Epstein, 1983, 1988, 1989). Individuals that have either created their own achievement goals, or are in search of fulfilling those goals set for them, seek to accomplish a given task thought to help them achieve success. Through the process, an individual may seek to be rewarded by someone of authority so as to believe that they are being seen, their actions are being assessed, and their progress is being evaluated. In a
task involving climate, the students’ daily improvement is kept private between the student and teacher, and rewards are given for individual improvement. Whereas in an ego-involving climate, a teacher may make recognition of a student’s accomplishments public while giving rewards for superior performance only. The issuing of public rewards may cause the person who is being rewarded to be recognized as superior while also causing all of the other students to feel inferior because of the public reward for accomplishment.

Placing students in groups for activities can have an affect on the establishment of a motivational climate in the classroom (Ames, 1992a, 1992b; Epstein, 1983, 1988, 1989). For each activity that is performed in a class, the teacher must make a decision as to how many groups should be established, how many students will be in each of the groups, and how the students will be divided into each of the groups. Grouping may be done in numerous ways, and it is important to understand the effects of grouping in motivational climate establishment. For the task-involving climate, activities and tasks are set up to focus on the developmental needs of the students and grouping is created accordingly. Students are given a choice as to what they would like to work on, as well as with whom they would like to work. Students may choose to work with other students that are more skillful in order to improve their individual skill, or they may choose to work with a group that is participating in an activity specifically designed to improve a certain skill area. In the ego-involving climate, all students are required to work on the same activity at the same time. Grouping for activities is not necessarily based on skill level of individual requirements, rather an attempt to have everyone participate in the same task.
The process of evaluating the progression and success of student participation is important in the establishment of motivational climates (Ames, 1992a, 1992b; Epstein, 1983, 1988, 1989). Teachers are expected to evaluate student performance based on standards believed to be acceptable. However, the basis on which standards are evaluated may be viewed differently in a task-involved or an ego-involved climate. In a task-involving climate, student progress is evaluated on individual improvement. Improvement, or whatever is chosen as the acceptable standards for evaluation, is based on individual goals for improvement rather than comparative group goals; whereas in ego-involving climates, evaluation is norm-referenced or rank-ordered. Students may be used as examples of quality or poor performers in comparison to other students in the class. Evaluation of student performance is made public and in accordance to peer-related performance.

The final component of the six TARGET principles used to establish a motivational climate in an achievement setting is time (Ames, 1992a, 1992b; Epstein, 1983, 1988, 1989). While most classes are restricted in the amount of time given to accomplish daily objectives, the assignment of time to activities and tasks within the class time has implications on motivational climate control. While the teacher still establishes specific time allowances for activities, the establishment of student individual goals and timelines to meet those goals is a part of the task-involving climate. The teacher and student will create a timeline for improvement and the allotment of time within a class period is intended for student achievement. In the ego-involving climate, the teacher decides and dictates timelines for improvement and performance measures. The student is given no chance for input when improvement or accomplishment should take place.
The six TARGET components are often employed together, though they can be used individually, in the establishment of a combination of a task-involving and ego-involving motivational climate. The TARGET principles are pertinent to this study in the establishment of both motivational climates and the recognition and evaluation of those motivational climates. While often the aim of the teacher is to create an environment in which either a task-involving or an ego-involving climate is present, the presentation of cues and the delivery of the TARGET components in the achievement setting may dictate the resulting motivational climate.

Understanding that teachers have a strong influence on their students and how their students perform in the classroom (e.g., Theeboom, DeKnop, & Weiss, 1995; Todorovich & Curtner-Smith, 2002, 2003; Treasure, 1997) is crucial to the investigation of the TARGET components. The reality of this can be perceived as both positive and negative. As more research on the relationship between teachers’ and students’ motivation shows proof of the teachers’ influential ability on students’ motivation, developing new teaching methods that will increase teacher effectiveness are necessary. Also, as more research begins to reveal some of the complicated connections between teacher and student motivation, the dynamics of selecting and training teachers will be more revered and require new approaches and tactics. Teacher and student motivations may be influential of one another, however the strength of teacher influence on student motivation creates an interesting discussion about teachers seeking to fulfill their own motives.

**Perceived Motivational Climate**

The way in which a student perceives an achievement setting and the motivational climate within that setting raises interesting questions about the relationship of achievement goal orientation and motivational climate. If students have a particular
achievement goal orientation, how does that cause them to perceive the motivational climate? What factors contribute to their perception of the motivational climate, and how do those factors affect their achievement goal orientation? Student perceptions of the motivational climate help to understand the intricacies of the climate as viewed by the student who is chiefly the one for whom the motivational climate is created.

Research in perceived motivation dates back to when Roberts, Kleiber, and Duda (1981) reported that the belief that perceived competence in physical skills has an important influence on participation and motivation in sports. While this information is pertinent to research done in the physical education setting, it is important to understand the findings that the researchers are presenting. Individuals seek competence through the process of education and learning, thus leading Roberts, Kleiber, and Duda to report that perceived competence is considered an important determinant of achievement motivation and behavior. Individuals’ perception of competence determines why they may do something (achievement motivation) and what they may do (behaviors) in a given achievement setting. This is important in understanding the impact of an individual’s perception on the way he or she acts, and the reason why he or she acts that way.

Individuals’ perceptions of an achievement setting and the motivational climate within that setting help identify their achievement goal orientation, while their perceptions also may alter their achievement goal orientation, thus their participation in the activities. Those with perceptions of a performance climate are most likely associated with ego-orientation, and those with perceptions of a mastery climate are most likely associated with task-orientation (Ntoumanis & Biddle, 1998). Note that the use of performance climate is similar to ego-involving climate and mastery climate is similar to
Sefriz, Duda, and Chi (1992) found that perceptions of mastery climate were related to effort as the reason for achievement. They also found that those with perceptions of a performance climate viewed superior ability as the reason for success. As mentioned earlier, those with a task-orientation have an undifferentiated conception of effort and ability and view the path to success as one involving effort and ability. Those with an ego-orientation are likely to believe success is achieved through ability alone. The perceptions of a climate can be used as identifiers of the individual’s achievement goal orientation.

While perceptions of the motivational climate often identify the orientation of an individual, perceptions of the motivational climate may also lead to the adoption of those behaviors most closely linked to either a task-involving climate or an ego-involving climate. Students who perceive the class as a mastery climate have reported using more effective strategies, prefer challenging tasks, have a more positive attitude toward class, and have a stronger belief that success follows effort (Ames & Archer, 1988). In a mastery climate where the goal is to elicit a task-orientation from the students, those who simply perceive the climate as mastery display the adaptive behaviors discussed previously. Ames and Archer concluded that classroom goal orientation might facilitate the maintenance of adaptive motivation patterns when mastery goals are salient and adopted by the students. In a study investigating the differences in student’s perceptions of motivational climate in physical education class, Solmon (1996) found that students in the task-involved climate completed more practice trials at a difficult level than those in the ego-involved climate. This suggests that despite having a task-orientation, students in a perceived ego-involved climate were more likely to adopt the behaviors of that climate,
rather than display behaviors more associated with task-orientation. Research shows that ego-involving characteristics of an environment become more salient over the school years (Eccles, Midgley, & Alder, 1984; Nicholls, 1989). For instance, as students age, their achievement goal orientation moves from more task-oriented to more ego-oriented (Xiang & Lee, 2002). Student perceptions of motivational climate foster responses as early as elementary school where more adaptive behaviors are exhibited, and maladaptive behaviors tend to increase as the students age.

**Race, Ethnicity and Sport**

The growing influence of sport in cultures worldwide has created discussion and controversy in the realm of racial and ethnic perceptions, stereotypes and sport. Discussion and theories about race and sports participation have been present since the 1800’s when sports writers and others wrote on the perceived differences between black and white athletes (Wiggins, 1997). Generalizations and misperceptions about the participants in different sports have led to stereotypes that subsist throughout socialized thought. Dyer (1980) noted that socialization leads to dichotomous thinking, in that there is a desire and a need to place everything into separate categories that have been neatly defined. As a result, the relationships of race and ethnicity and sport have had to endure the attempted struggle of being placed into dichotomous boxes. This has caused many people to construct misperceptions about sport and the relations that adjoin it to separate racial and ethnic groups. These perceptions can better be understood as stereotypes. Stereotypes have likely affected the profession of physical education as teachers possibly hold views that are fabricated by stereotypes about students who have a particular racial or ethnic group membership (e.g., Hargreaves, 1986). This has been recognized as a problem in the field, and study of this topic is warranted. Bloom and Willard (2002)
stated, “There is a need for fresh and original approaches to the relationship between race and sports.” The same might also be suggested for race and physical education.

As Malik (1996) suggests, everyone knows what race is, but no one can define it. The desire to categorize people by race comes from social surroundings, culture, beliefs, customs, and political associations, which then structure our perceptions of self and others (Haslam, Oakes, Reynolds, & Turner, 1999) and was first introduced in the 1790 United States census (Glazer, 2001). It might then be assumed that race and race association is formed to discretely place persons into categories that may be hard to define. This can cause confusion and misguided assumptions involving a person’s racial identification if discretely bonded units are not identified. Simply stated, a person’s race association is often categorized by superficial characteristics such as facial structure, hair texture, and most notably, skin color.

A conversation about race and ethnicity may occur, often with the misunderstanding that race and ethnicity have completely different properties, which help to understand the meaning of each. Race refers most notably to one’s skin color, but includes other genetically transmitted traits (Coakley, 2004). Ethnicity refers to an individual’s classification according to common racial, national, or cultural background and traditions (Coakley, 2004). While race may be used to define ethnicity, the two may not be used interchangeably nor be mistaken for one another when speaking of the two in an educational manner. Understanding the proper usage of these terms is critical to addressing the seemingly problematic situation stated earlier. It is believed that much of the establishment and persistence of stereotypes about race and ethnicity in sport stem from a misconception that people of the same race are also people of the same ethnicity.
When in actuality, it is possible that two people of different races may share more in common in terms of ethnicity than two people of the same race.

The reason for such division and misunderstanding when considering the categorical classification of people in the United States may date back to when the first census was collected only a few years after the documenting of the Constitution. For the first census, data was needed to understand population distribution so that proper representation could be established (Glazer, 2001). Glazer notes that only the categories of “free white males and females,” “slaves,” “all other free persons,” and “Indians not taxed” existed for which a person could identify. Thus began the differentiation of whites and blacks, and it represents the centrality of distinction in America adds Glazer. It appears the idea of knowing a person’s racial identification was so important that it became the key identifier among new Americans. Maybe without full consideration or care, race continued to be the key contributing factor in placing people in their categories based more so on the color of their complexion than the origin of their culture. Glazer adds that the most recent census taken in 2000 attempted to fully understand respondent’s race as it relates to “Hispanicity” due to the large influx of people of Hispanic decent into America in the past 100 years. It then becomes interesting to wonder how race and ethnicity in America has come to be defined by an immigrant population that has similar racial characteristics as those who have lived in America since the beginning. While it may be hard to understand and even harder to explain, the need for data on race and ethnicity in America is based on structuring and redrawing of Congressional districts as suggested by the Civil Rights Act (1964) and Voting Rights Act (1965) (Glazer, 2001). The idea that race and ethnicity will continue to be questioned on the United States
census in order to place people into districts within boundaries seems to almost follow the intentions of the original census creators in forcing people to identify first with their racial group for the sake of the country.

**Racial Identity**

Racial identity has both situational and stable properties, and when conditions arise when race is important, racial identity comes forward (Shelton and Sellars, 2000), thus is the case for sport. Twentieth century development has seen sport become an important socio-cultural arena where racial groups have contested, defined and represented their racial identities (Bloom & Willard, 2002). Bloom and Willard acknowledge sport as a critical part of the twentieth century social and cultural history, with increased value in creation of racial identity. The increased importance of sports in America has led to an intense relationship between racial identity and sports. As sports participation has increased and the emergence of elite athletes has followed the same pattern, identification of sport excellence has occurred, often alongside racial identification. The association of racial identity with individual sports is yet another misperception of superficial characteristics. And what is most interesting about racial identity in America is that most Americans have multiple racial and ethnic identities (Henderson, 2000) that may not even be considered by that person or others.

Cultures and communities have come to embrace sport as a central element with the ever-popular enthusiasm of sport that has emerged worldwide. Yet, race can often be over-publicized or ignored in scholarly debate. “In the culture that has developed around sports, race is the proverbial elephant in the middle of the road, which everybody sees, but few dare to acknowledge” (Bloom & Willard, 2002, p. 2). Those who acknowledge the elephant’s existence but do not stop to address the issue are allowing the socialized
thoughts about the race/sport correlation to confound their perceptions. As often is the case, ignoring the issue does not dismiss it from conversation and does not terminate its existence. This same lack of recognition of the possible and present problems of race and ethnicity in sport stereotypes in physical education exists and is rarely addressed.

Racial identity within athletics and sport participation has been suggested to be part of socialization within people that may lead them to believe that certain sports are reserved for individual racial and ethnic group participation (Coakley, 2001; George, 1994; Haslam, Oakes, Reynolds, & Turner, 1999). Haslam and colleagues (1999) believe that people have an inclination to categorize people in terms of race (e.g., Hewstone, Hantzi, & Johnston, 1991), and that inclination comes from social surroundings, culture, customs, beliefs, and political associations. They argue that those inclinations in turn guide self-conception and conceptions of others. Others agree that participation in athletics is partly based on either in-group or society-wide expectations about how appropriate it is to participate in a sport based on racial identification (Coakley, 2001; George, 1994). Such beliefs go back to when Barth (1969) supposed that racial group boundaries create norms that influence what activities, roles and values are appropriate for people within a racial group.

The relationship of racial identity and sport conjure up beliefs and thoughts that may or may not be accurate. Over the years, theories and hypotheses about the “natural” ability of African-American athletes have swayed the thoughts of populations (Hoberman, 1997). There is also a theory that exists illustrating that Caucasians are more suited for “country club sports” such as tennis and golf. A survey showed that most people think African-Americans are better suited to play basketball than Caucasians
(Harrison, 1999). The same survey produced results stating that African-Americans were not suited for golf or tennis. It should be noted that Tiger Woods and Serena Williams, both of African-American decent, are considered by many as the most dominant participants in their respective professions of golf and tennis. The stereotypes that exist with relation to sport and racial identity hinder the progression of sport and do not allow sport to exist in its intended sense.

**Stereotypes**

Stereotypes are beliefs about the personal characteristics of a group, and these beliefs are often over-generalized and incorrect (Meyer, 1993). As Oakes, Haslam, and Turner (1994) reports, stereotypes serve to organize and simplify information, justify collective actions, maintain group beliefs, sustain positive group distinctiveness and preserve important social values. Stereotypes exist everywhere as people try to make assumptions in an attempt to place people into defined categories. Dyer (1980) introduced the concept of dichotomous thinking as an attempt to place everything into separate categories, adding that dichotomous thinking is viewed as intellectual laziness and is seen as taking cognitive shortcuts. Dichotomous thinking is a product of stereotypic cognitive processing (Dyer, 1980). People believe that it will be easier to discuss and converse about similarities and dissimilarities between the groups if things, especially people, are placed into defined categories. In actuality, the categories cause confusion and misperceptions that lead to invalid statements and beliefs because the categories are not well defined and specific. Rather, the categories are given a few descriptors to help differentiate one another so as to avoid confusion and misunderstanding. Harrison (2001) declared that when stereotypes are based on much social and factual knowledge and are not used only to make trait inferences about
individual group members, they are generally accurate and pose few problems. The cognitive short cuts lead to detoured explanations that take more time in revision, and detract from the intended purpose of social analysis.

**Stereotypes in Sport**

Sport and physical activity allow for the evolution, engagement, and preservation of stereotypes (Harrison, 2001). It is natural for humans to view sports and attempt to conclude why certain people succeed more than others. A curious person will seek to find the answers, which is permissible. It is when stereotypes are formed because people limit their cognitive processes when problems arise and social awareness is needed.

Stereotypes are ever-present in the sports arena and the most widely recognized one involves gender and gender equity. The stereotypes about race and sport are equally important, yet few, it seems, want to discuss it because of a fear of insulting a group or groups. The race and sport relationship deserves valid conversation because the amassed stereotypes that exist with regard to race and ethnicity and sport are over-whelming and often incorrect, and need rectification.

In the domain of sport, the rare occurrence exists when African-Americans are stereotyped as dominant and Caucasians as inferior (Harrison, 2001). Most notably this stereotyped dominance occurs with regards to American football and basketball. When viewing football and basketball, the abundance of African-Americans is recognized and often obvious, especially on an elite level. However, exceptional athletes are not the best representation for judging the athletic abilities of a racial population (Meyer, 1993). Professional and elite athletes should be understood as an exception to a rule, yet socialization allows the supposition that all people existing within a group contain the same characteristics as those viewed as athletically successful.
In the 1970’s, a debate between scholars surfaced to help bring understanding to a comment made by Cobb (1934) regarding the role of socialization on athlete performance differences. Cobb believed that black and white performance differences were due to socialization, proper training, and certain incentives. Sociologist Kane (1971) suggested that black athletes possessed greater and superior athletic abilities based on a form of social Darwinism. His thought was that the average black man has greater physical abilities because the demands of slavery forced those that were not as strong out, and kept those that had adaptive physical characteristics. Thus, the evolution of the black man in America and his athletic abilities is founded in slavery and survival of the fittest. Another sociologist, Edwards (1973), argued that Kane’s (1971) genetic claims concerning social Darwinism implied that whites then possessed greater, or superior, intellect than blacks. Edwards argued that blacks needed just as much intellect as physical ability to survive slavery. Stereotypes about blacks’ physical abilities and whites’ mental abilities may be implied through socialization, which leads to misrepresentation and misunderstanding of the resources and abilities needed to succeed in both sports and life in general.

Stereotypes about athletes stem from over-generalized views of affiliation to a particular racial group (Harrison, 2001). People may think sports such as soccer, golf and tennis are reserved for Caucasians, and thus creating the idiom “white” sport. Those same people may consider basketball, football and sprint track to be “black” sports. These socially created misrepresentations dissuade participation in and distort the sport to which they are attached. Since racial desegregation of sports began in the mid-1900’s, no single sport currently exists with total participation of one specific racial group, yet these terms are used and often understood. Both African-Americans and Caucasians define basketball
as a “black” sport even though there is recognized widespread participation of various racial groups (Harrison, 1999). It is true that a majority of professional basketball players are African-American (80%; Lapchick & Matthews, 1997), but to stereotypically refer to basketball a “black” sport ignores the participation of millions of non-blacks that play basketball on a professional, competitive, and recreational level. Misunderstanding perpetuates with the idiomatic mention of either condescending construct mentioned above, consequently creating a socialized understanding, acceptance, and misdirection.

Further empirical evidence discloses the presence of stereotypes surrounding race and athletics. Devine and Baker (1991) found confirming evidence of what Edwards (1973) suggested that the characteristics of the black athlete include unintelligence and ostentation. Others found that black males were perceived to be more athletic than white males (Biernat & Manis, 1994) and that white participants rated black athletes as less intelligent, less academically prepared, and more temperamental (Sailes, 1996). Sailes also found that black participants viewed white athletes as less competitive and as having less “athletic style.” What may be concluded from the given reports of stereotypes is the consistent belief that black athletes have physical superiority over white athletes, but the black athletes also have an intellectual inferiority to white athletes (Stone, Sjomeling, Lynch, & Darley, 1999). Other stereotypes that are presented through such research are the ideas that black athletes seem to be “ostentatious” (Devine & Baker, 1991) or “temperamental” (Biernat & Manis, 1994), while white athletes lack some of the athletic style (Sailes, 1996) demonstrated by ostentatious black athletes. The reporting of stereotypes may be different among various populations, however it seems as though the
most consistent in empirical evidence is the stereotypes about black athletic ability and white intelligence, which is similar to that stated by Harris (1997).

**Stereotypes in Physical Education**

It has been shown that race and sport stereotypes have influenced youth and the general public (Harrison, 1999), but further studies have demonstrated the views of coaches and physical educators (Hargreaves, 1986; Hayes & Sugden, 1999; Horn & Lox, 1993). Hargreaves (1986) reports that physical education teachers assume that blacks are naturally better at sports, performing at higher levels than other students. This assumption suggests that racial stereotypes reside in the perceptions of those teaching children, thus possibly promoting and enabling them to exist in class and school. The ability of a teacher to create a motivational climate to elicit a chosen achievement goal orientation has been stated, and it can be assumed that a teacher has the same likelihood to demonstrate and promote stereotyping behaviors about race and ethnicity in sport.

It can be inferred that physical education teachers may be influencing and encouraging black students into sport based on stereotypical perceptions of blacks’ athletic ability (Hayes and Sugden, 1999). It is hoped that this is not the case, rather that teachers would influence participation in sport in general, not a specific sport based on stereotypes. Physical education provides a conducive arena to promote misperceptions about racial participation in sport. Teachers who hold stereotypical expectations regarding the athletic abilities of the students may display different expectations of the students’ athletic abilities (Horn & Lox, 1993). This can create a problem when physical educators allow and possibly promote stereotypes about race and sport. It is inaccurate to say that this occurs in all physical education settings, though research shows that such teaching is possible (e.g., Hargreaves, 1986; Hayes & Sugden, 1999; Horn & Lox, 1993).
The effects of stereotypes manifesting and harboring in the physical education setting have not been fully disclosed, however it may be assumed that the permission of any inaccurate stereotypes regarding race and ethnicity in sport may be harmful. Hargreaves (1986) suggests that there is little recognition within the physical education community of the problematic relationship between race and physical education.

**Negative Stereotypes**

The effects of stereotypes can have a lasting effect on a person’s behaviors and perceptions of another racial or ethnic group of people as well as the group to which the individual belongs. While often stereotypes may be perceived as references to someone else, self-stereotyping may also occur. In fact, when stereotypes are made known and generally referred to, people of that group may associate with the stereotype. However when the stereotype is negative, or demeaning in nature, one may assume that a member of that group would refuse to believe the stereotype and attempt to prove wrong those who believe it to be true. An individual’s behaviors and actions may change if they perceive the negative stereotype as a threat to them. Despite not believing in the negative stereotype, the individual may feel pressure to disprove it personally.

**Stereotype Threat Theory**

Steele (1997) explained that the threat of a negative stereotype may create pressure and be detrimental to an individual in the group associated with the negative stereotype. Steele examined the performance of individuals in an activity in which a negative stereotype is associated with the individual’s group. He assessed both racial and gender situations and found that the simple threat of a negative stereotype was enough to place the individual under the pressure of disproving the stereotype. Thus the stereotype threat theory states that when a negative stereotype about a group becomes generally known for
evaluating performance, an individual of the group becomes concerned that their performance may confirm the validity of the negative stereotype (Steele, 1997).

Stereotype threat has some definitive qualities and five general features that allow for its existence. The negative stereotype must be self-relevant, and the possibility of conforming to the stereotype, or being judged in terms of it, becomes self-threatening (Steele, 1997). The individual must recognize the stereotype, and then believe that there is a possibility that the actions he or she displays may validate the negative stereotype. The individual might also believe that he or she is free from conforming to the stereotype, however they may be judged based on the characteristics of the stereotype.

The general features of stereotype threat identifies who it affects, why it affects that person, how much it affects that person, what that person believes about it, and how it can be detrimental to the person. First, stereotype threat can affect anyone who is a member of a group about whom there exists a negative stereotype that is generally recognized and known (Steele, 1997). For instance, a black male may be affected by a stereotype threat because of the negative stereotype that black males are often uneducated and less intellectual. The stereotype threat may be used on numerous other groups as it is not confined to racial and ethnic group stereotypes.

Second, stereotype threat is restricted by whether a negative stereotype about an individual’s group becomes relevant to self-interpretation of the individual (Steele, 1997). This is especially true when an individual is in a setting where a negative stereotype is most likely to be present and possibly fulfilled. Cross (1991) referred to this as spotlight anxiety, when an individual is in a situation where the stereotype exists such that he or she may be judged or treated in terms of a racial stereotype. However, the stereotype
threat may also surface in an isolated environment free from the pressures of validating the stereotype (Steele, 1997).

Third, the type and the degree to which the threat is experienced vary from group to group and across settings (Steele, 1997). Often, negative stereotypes are associated with one particular group. Seldom do negative stereotypes exist across the boundaries of different groups, especially among racial and ethnic stereotypes. Additionally, the degree, or severity of the stereotypes may vary according to which group the negative stereotype is associated. Caucasian men do not have the same negative stereotypes as African-American or Hispanic men. While there may be negative stereotypes about men as a group, members of each of the three groups may experience varied types of negative stereotypes and there may be varying degrees to which those stereotypes are viewed as threatening to the member of that group. Yet, someone in a group may experience a stereotype threat in one setting, that same individual may not experience the same threat when placed in a different setting.

Fourth, it is important to understand that it is not necessary that an individual believe the negative stereotype or be concerned about its validity (Steele, 1997). The simple presence of a negative stereotype about a group to which an individual belongs may create a stereotype threat in that individual. Whether the individual believes that possibly the stereotype is true is irrelevant. The individual simply must acknowledge that the stereotype exists and that there is a possibility of conforming to that stereotype.

Finally, it can be difficult to put forth enough effort to overcome and disprove the stereotype threat (Steele, 1997). Many people try to disprove stereotypes by being an exception to what is stereotyped. However, being considered an exception may not be
enough to disprove the stereotype. Attempting to disprove every negative stereotype about the group to which an individual belongs would take a great amount time and effort that may turn out to be unsuccessful. The five general features help to understand the existence of stereotype threat based on negative stereotypes.

**Stereotype Threat in Sport**

While this theory was first associated with women taking math tests and African-Americans taking standardized tests (Steele, 1997; Steele & Aronson, 1995), research has since been reported on the stereotype threats present in athletic performance (Stone, Sjomeling, Lynch, & Darley, 1999). Using stereotype threat as a theoretical model, Stone, Sjomeling, Lynch, and Darley sought to examine how stereotype threat processes operate in a sports context for African-American and Caucasian participants. Other studies primarily used the theory for learning and academic context research. Investigating the theory in a sport context addresses the issue of race/sport stereotypes to which Bloom and Willard (2002) referred. The similarities and shared experiences between recreational sport participation and physical education allow for the results of the Stone, Sjomeling, Lynch, and Darley (1999) study to be considered in the physical education setting.

Stone, Sjomeling, Lynch and Darley (1999) concluded that the salience of stereotype threat based on athletic performance can adversely affect both African-American and Caucasian participants of sport. These findings correlate with the third feature of stereotype threat that suggests that it may occur in different types and to different degrees from group to group (Steele, 1997). In addition, specific conditions of stereotype threat that lead to poor performance are different for various groups (Stone, Sjomeling, Lynch, & Darley, 1999). The conditions studied included African-Americans
suffering from the negative stereotype of poor sports intelligence, and Caucasians suffering from the negative stereotype of poor athletic ability. Both of these negative stereotypes are referred to and often sought out (e.g., Biernat & Manis, 1994; Sailes, 1996; Harris, 1997), and the threat of these stereotypes is imposing on the individuals of these groups. While a stereotype threat exists for various groups, the affects it has on each individual group may be different but may ultimately lead to poor performance in that sport (Stone, Sjomeling, Lynch, & Darley, 1999).

Research indicates that the problems resulting from the salience of stereotype threat appear to primarily affect individuals to whom it is important to seek self-worth through sports performance (Stone, Sjomeling, Lynch, & Darley, 1999). Contextual factors, such as the framing of performance and cues, which distract individuals from thinking about the negative stereotype, may be able to help reduce the impact of salient negative stereotypes. In other words, the achievement setting and the amount of attention given to and emphasis placed on performance are shown to be influential in the impact of negative stereotypes. Also, the cues that are presented to an individual facing the stereotype threat influence the impact of the negative stereotype. Essentially those same factors that influence motivational climate and achievement goal orientations influence the impact of salient negative stereotypes.

**Motivational Climate and Stereotype Threat**

The connection between motivational climates and stereotype threat allows for discussion as to the risks associated with creating a motivational climate that enables a negative stereotype to exist and possibly grow. Contextual factors have been shown to impact negative stereotypes (Stone, Sjomeling, Lynch, & Darley, 1999). Similar factors have been shown to influence the establishment of a motivational climate (Todorovich &
Curtner-Smith, 2002, 2003). Research also distinguishes that an ego-involving climate is less desired than a task-involving climate. The characteristics of an ego-involving climate place much pressure on an individual to perform up to expectations of success through the reliance on ability. What happens when the expectations of success can only be obtained through a path that requires an individual to recognize a stereotype threat? The individual is placed in a situation that does not allow him or her to escape from the confines of the stereotype threat because of the restriction caused by the establishment of the ego-involved climate. Thus, the individual is pressured to perform beyond his or her normal capabilities just to attempt to disprove the negative stereotype. Stone, Sjomeling, Lynch, and Darley (1999) showed that pressure to perform well enough to disprove the negative stereotype was enough to alter the individual’s performance in a given activity. The risk of creating a motivational climate, namely an ego-involving one, can be detrimental in not only the adoption of maladaptive behaviors, but the undesirable fulfillment of a negative stereotype.

It is important to ask questions that examine student motivation while being cognizant of social issues. This project is aimed at evaluating students’ goal orientations and perceptions of motivational climates with the understanding of each student’s racial and ethnic background. The effects of task- and ego-involving climates are known, as well as the effects of a stereotype threat in a sports performance situation. However, understanding how the two constructs work independently of one another is only good for speculation. Understanding how the two constructs work in relation to one another allows for greater academic discussion that will hopefully allow for the progression of
discussion of possible strategies to be implemented into the teaching practice in physical education.

**Gender in Physical Education**

While not a primary focus of the study, the role of gender in physical education deserves consideration and discussion. Many researchers, such as Mary O’Sullivan, Thomas McKenzie, and Melinda Solmon have spent valuable research time attempting to understand the dynamics of physical education as it pertains to gender and gender relations. Evidence regarding such research indicates a myriad of possibilities that a teacher, administrator, and/or school board would need to consider when discussing gender and physical education policy. While in the Netherlands education ideals may be the reason why co-education classes exist in physical education (Van Essen, 2003), the educational ideals remain different in the United States. Much discussion has occurred surrounding co-education and single-gender physical education classes (e.g., Griffin, 1984, 1985a, 1985b; Lirgg, 1994; Treanor, Graber, Housner, & Wiegand, 1998) in the United States, yet still there is no consensus. Thus, it is found that often individual schools and school boards determine which style of physical education, single-gender or co-education, they will offer.

Gender researchers O’Sullivan, Bush, and Gehring (2002) published a document detailing the United States’ perspective on gender equity and physical education in a summarized format, yet questions and discussion still persist today regarding the appropriateness of co-education and single-gender classes. One of the biggest concerns surrounding the allowance of co-education classes is that female students often do not receive equitable physical education when in a co-education class (Griffin, 1984, 1985a, 1985b; Lirgg, 1994; Treanor, Graber, Housner, & Wiegand, 1998). Dunbar and
O’Sullivan (1986) explain that differential treatment between males and females has been seen in co-education physical education for decades. Various reasons, such as teacher strategies (Santina et al, 1998), student beliefs (e.g., Solmon et al, 2003), and/or parent beliefs (e.g., Xiang, McBride, & Bruene, 2003), just to name a few, may contribute to such an occurrence. Research in the co-education class also has tried to determine the effectiveness of single-gender groups (Gabbei, 2004). Gabbei (2004) suggests that single-gender groupings within the co-education physical education class may be more beneficial, in terms of skill development, for female students. So while some research indicates that positive effects can be witnessed in the co-education class, others recognize the disparity and attempt to alleviate the problem.

One might think that because males have a stronger preference for physical education than females (Colley & Comber, 1994), they may be more likely to receive adequate treatment in physical education, thus benefit from it more than females. This disparity in benefits may especially be true when considering that males at the middle school level engage in more moderate to vigorous and vigorous physical activity than female students (McKenzie et al, 2000). A separate reason for lack of accomplishment of females in physical education when compared to males may be noted in the study of gender appropriate activities (Lee, Nelson, & Nelson, 1988; Lirgg, George, Chase, & Ferguson, 1996). Researchers (e.g., Lee, Nelson, & Nelson, 1988) have found that gender inappropriate activities have a more detrimental affect on females than they do on males. Consider the class that presents a perceived gender-inappropriate activity in which the students must participate. In a co-education environment, if the activity is more male appropriate, the likelihood of the female students benefiting as much as the male students
is even less than if the activity was perceived as female appropriate. Again, male students prefer physical education, thus they may lay aside their thoughts and beliefs about gender inappropriateness for participation in physical education. The evidence is that when considering co-education classes in physical education, lack of benefits and increased likelihood of detriment is seemingly more destined for female participants than their male counterparts.

While arguments for co-education classes have surfaced in the physical education literature, so too have arguments revolving around the discussion of single-gender physical education classes. Such researchers as McKenzie, Prochaska, Sallis, and LaMaster (2004) have attempted to educate the field of physical education on the arguments for and against single-gender and co-education physical education. While the arguments may be presented in such a way to demonstrate the views of the researcher or practitioner, others have sought the opinions of the students. Treanor and colleagues (Treanor Graber, Housner, & Wiegand, 1998; Lirgg, 1994) have found that both males and females prefer to have physical education in a single-gender environment. This finding demonstrates that the feelings of desired single-gender classes are not solely presented by females, but the feeling is mutual. While the reasons for the desire of a single-gender class may be completely different for males and females, the preference is still demonstrated by both parties. The discussion for and against co-education classes will possibly continue as long as the discussion about race and ethnicity in sports. Thus, for this study discussion of the two elements is necessary and appropriate, especially when considering much of the data collected on gender and physical education was done in the middle school setting.
CHAPTER 3
METHODS

The following chapter includes a description of the methods used in the study of perceived motivational climates and achievement goal orientations of students of different racial and ethnic backgrounds in a middle school physical education class. The participants, setting, data collection, and data analysis will be discussed.

Setting

The school chosen for this study was located in Williston, Florida in the southeastern United States. The school was used in this study because of the interesting contextual elements that would contribute to analysis and address the research questions posed. The school was made up of 66.4% white (Caucasian), 24.2% black (African-American), and 9.4% other (e.g., Hispanic, Native American, Asian American, Multiracial). Fifty-nine percent of students at the school received reduced or free meals.

A teacher of the same gender taught each physical education class independently as the students’ classes were not co-educational. The teachers determined the content of the class and the investigator did not interfere with the physical education program delivery or content in any way.

Participants

The participants in this study were 23 females in one physical education class and 31 males in another physical education class. A smaller sample size than expected may be due to attrition. The participants were middle school students whose ages ranged from
11 to 15 years. Participants were not required to take physical education at this school, although 78.7% (42.5% male; 36.2% female) of the students were enrolled.

**Sampling**

The school was identified and used in this study based primarily on the racial and ethnic make-up of the student body, along with other contextual elements (i.e., socioeconomic status, rural setting). Other schools in the area were considered as possible data collection sites, however they were not considered appropriate for the study because it was necessary to videotape class lessons in order to determine the actual motivational climate. Other schools and districts in the area offered restrictions to videotaping the participants, however the school in this study allowed for such videotaping. Because only one school was chosen for this study due to resources and time constraints, the present sample may be considered a convenience sample.

**Recruiting**

The participants chosen for this study were selected based on the time their physical education class met during the school day. Hence, because the researcher was interested in investigating the “natural environment,” it was not appropriate for the researcher to randomize students. Therefore, intact classes were used for this study. The physical education teachers and the school administration determined the actual periods chosen for the study, and this also limited the number of classes that could be observed to two. The male class was selected as it was the first period of physical education of the school day. The female class was selected as it was the second period of physical education of the school day. Students were not offered incentives to participate in the study.
Data Collection

Four instruments were used in data collection for this study. These included the Physical Education Climate Assessment Instrument, the Task and Ego Orientation in Sport Questionnaire, the Perceived Motivational Climate in Sport Questionnaire, and a demographic form.

Physical Education Climate Assessment Instrument

As previous research indicates, teachers of physical education classes will intentionally or unintentionally establish a motivational climate during class. The Physical Education Climate Assessment Instrument (PECAI; Curtner-Smith & Todorovich, 2002) (See Appendix A) was used to determine if a class motivational climate was task-involving, ego-involving, or neutral. Each class was videotaped over 10 consecutive days. A video camera was arranged in the class setting so that the teacher was seen providing classroom instruction. The teacher was also equipped with a microphone so that an audio recording of class instruction could be coded for analysis purposes.

The principle investigator coded each task presented by the teacher according to what was viewed on the videotape. The coder then decided whether the task, authority, rewards, grouping, evaluation, and time elements indicated the establishment of a task- or ego-involving motivational climate by the teacher according to criteria in the categorical descriptions. The task element was coded as neutral if the orientation of the element could not be identified. The coding process began directly after a task was presented to the class, as the task and authority elements were coded first. The video recorder was then restarted and ran until the task was completed. At that time, coding for rewards,
grouping, evaluation, and time was conducted. This process continued until all tasks of a lesson had been analyzed.

When the tasks for each lesson were completed, the number (raw score) and percentages for each element coded as task, ego, or neutral were computed. The raw score indicates the number of times an element is coded as task, ego, or neutral. The percentage is the raw score for each element divided by the total number of tasks. The number and percentage of task, ego, and neutral codings can be computed for a lesson. The raw scores were totaled when all of the elements were coded as task, ego, or neutral during all tasks. The percentages were computed by dividing the total raw scores for task, ego, and neutral by the number of codings possible for that lesson. Since more than one lesson was coded, the total raw scores and percentages were computed for the task elements and the lessons.

The PECAI has been demonstrated to be reliable and valid for assessing the motivational climate of a physical education class. This instrument yielded data that helped confirm the establishment of a motivational climate in the physical education class.

**Coding and inter-observer reliability**

One researcher coded all lessons videotaped for the study. However it was important that the coder exhibited inter- and intra-observer reliability. The TARGET principles of motivational climates in physical education must be understood and recognizable by the coder to help ensure accuracy in the coding process. The coder completed training to better become familiar with recognizing the TARGET elements during class lessons and increase familiarity with the PECAI. Training consisted of
coding pre-recorded lessons that were not a part of this study for approximately five 
hours.

Methods described by van der Mars (1989) were followed throughout this study. 
Inter-observer reliability refers to the accuracy of observation records of one person 
compared to those of a second person. To ensure inter-observer reliability, two observers
(the principle investigator and supervising professor) coded a sample lesson from start to
finish. Inter-observer agreement was calculated through task-by-task comparisons of the
TARGET components. The agreement score was found by dividing the number of
agreements by the number of agreements plus the number of disagreements and
multiplying the result by 100. Acceptable scores for agreement are 80% and higher. Inter-
observer reliability scores were 97%.

The two coders were of different racial and ethnic backgrounds and were both
male. The principle investigator was of a bi-racial (Caucasian and African-American)
background, while the supervising professor was of a Caucasian background. The
presentation of this information is to indicate that those coding data for reliability
purposes were different.

**Intra-observer reliability**

Intra-observer reliability refers to the accuracy of an observation record made by
one observer on one day compared to the observation record of the same events by the
observer at a later date. The coder for this study (principle investigator) coded a sample
lesson twice, one week apart to assess intra-observer reliability. Agreement scores for
intra-observer reliability were found using the same methods as those used for inter-
observer reliability. Acceptable agreement scores for inter-observer reliability are 80%
and higher as defined by van der Mars (1989). Intra-observer reliability scores were 83.3%.

Observer drift, or the tendency to change coding rules and category interpretations, was addressed in the methods. The coder periodically coded pre-scored lessons and compared agreement scores to check for observer drift.

**Task and Ego Orientation in Sport Questionnaire**

For determining the achievement goal orientation of the participants, the Task and Ego Orientation in Sport Questionnaire (TEOSQ – modified for physical education; Walling & Duda, 1995) (See Appendix B) was used. This instrument has been used in addressing achievement goal orientations of students in previous research (e.g., Duda & White, 1992; Hanrahan & Biddle, 2002; Ntoumanis & Biddle, 1998). The TEOSQ has also been used to evaluate task- and ego-orientations of students in a similar age range (Lau, Fox, & Cheung, 2004; Todorovich & Curtner-Smith, 2002)

The TEOSQ was administered on the final day of observation after the completion of the lesson. The TEOSQ is a 16-item questionnaire measured on 5-point scales from 1 (*strongly disagree*) to 5 (*strongly agree*). The stem of the statements were “I feel most successful in physical education class when…” Eight of the items referred to task orientation (i.e., I feel really successful in physical education when I learn a new skill and it makes me want to practice more), while eight items referred to ego orientation (i.e., I feel really successful in physical education when something I learn makes me want to go and practice more). Mean scale scores were calculated for the two subscales and could range from 1 (low) to 5 (high).
**Perceived Motivational Climate in Sport Questionnaire**

The instrument used to record the participants’ perceptions of the motivational climate was the Perceived Motivational Climate in Sport Questionnaire (PMCSQ; Seifriz, Duda, & Likang, 1992) (See Appendix C). The PMCSQ has been used in previous studies to detect the perceptions of students in a sport (e.g., Petherick & Weigand, 2002; Ryska, Yin, & Boyd, 1999) or physical education setting (e.g., Ntoumanis & Biddle, 1998; Xiang & Lee, 2002; Yoo, 1999). Reliability (Petherick & Weigand, 2002) and validity (Walling, Duda, & Chi, 1993) have been shown to be acceptable in the PMCSQ. The PMCSQ has been used to evaluate perceptions about the motivational climate with students in a similar age range (Magyar, Feltz, & Simpson, 2004).

The PMCSQ was administered to the participants upon completion of the lesson on the final day of observation. The PMCSQ is a 21 item questionnaire measured on 5-point scales from 1 (*strongly disagree*) to 5 (*strongly agree*). The stem of the statements were “In this physical education class...” Nine of the items referred to task orientation (i.e., In this physical education class trying hard is rewarded), while twelve of the items referred to ego orientation (i.e., In this physical education class students are punished for mistakes). Mean scale scores were calculated for the two subscales and could range from 1 (low) to 5 (high).

**Demographic Information Form**

Based on the focus of this study, it was important to gather information pertaining to student demographics. Thus, a demographic information form was created by the principle investigator to gather information pertaining to student age, grade, gender, and race/ethnicity (See Appendix D). A generic demographic information form was created to
focus data collection of demographic information on only that information that was important to the study.

Participants were asked to complete the demographic information form by writing their age and grade. Participants were then asked to circle the gender group to which they belong (e.g., Male/boy or Female/girl). The final demographic category asked participants to circle only one of the groups that best described their race/ethnicity. Race and ethnic group titles used for this study were based on those that are similarly used for the US Census (Glazer, 2001) and the middle school questionnaire of the Youth Risk Behavior Survey (CDC, 2005). A multiracial group was added to ensure that those who were of more than one race/ethnic group did not have to choose one group over another.

**Procedures**

Approval to conduct the study was first gained from the University of Florida Institutional Review Board for the Protection of Human Subjects before the study began. Students were given an informed consent form that was required to be returned before participating in the study. Students were asked to have their parent(s) sign the parental consent form and students were asked to return the signed form. The informed consent form allowed the students to be videotaped and to complete the TEOSQ, PMCSQ and demographic form. Parents and/or guardians had the option to allow their child to participate in normal class activities while being videotaped, yet disallow the student to complete the TEOSQ, PMCSQ and demographic form. Students were not asked to sign the informed consent because they were under the age of 18, thus their signature is disregarded. Those students who failed to return the consent form to the principle investigator by the time videotaping began were given alternate physical education assignments to complete. Students were permitted to enter the study as soon as they
returned the signed consent form. The instructors were also required to sign the informed consent since they too were videotaped.

Observation of the classes was recorded using a video camera. In order to successfully view the teacher in the class setting, the camera was positioned so that the teacher was in view at all times when tasks and activities were presented to the class. The video camera was operated by the principle investigator at all times during recording. It was also important that the teacher was monitored throughout the activity to measure other TARGET components, such as rewards and evaluation, which are not measurable during task presentation. A microphone was also attached to the teacher so that if instruction was given far from the camera, audio recording of the teacher-student interaction was ensured. Only one camera was used during the videotaping procedure.

The same two classes were observed over the course of ten consecutive days. On the tenth and final day of observation, the TEOSQ and PMCSQ were administered to students upon completion of the lesson. First, students were asked to complete the TEOSQ. Then students were asked to complete the PMCSQ. A form collecting demographic information from students was administered along with the TEOSQ and PMCSQ. All three forms were collected and securely filed in the office of the supervising professor until data entry was conducted and will remain filed for 3 years after the conclusion of the project.

Coding of each of the twenty lessons began after the completion of the ten days of observation. The investigator used the PECAI to code each lesson to determine the motivational climate of each class lesson.
Data Analysis

Data analysis was conducted using data collected from the PECAI, TEOSQ, and PMCSQ instruments. Descriptive statistics were computed for the PECAI to determine if the physical education class climates were task-involving, ego-involving, or neutral. Directions for the recording procedure are listed in the data collection section and examples of the instrument can be found in Appendix A. Student task- and/or ego-orientation were derived from the TEOSQ. Directions for collecting data for student achievement goal orientation are given in the data collection section and an example of the instrument to be used can be found in Appendix B. The perceived motivational climate was determined by the PMCSQ to be either task-involving and/or ego-involving. The data collection section also contains directions on how this instrument was used and an example of the instrument can be found in Appendix C.

Data were entered into a computer using the Statistical Package for the Social Sciences (SPSS) 13.0 program. This program allows for data to be analyzed because it is able to produce values for ANOVAs and Pearson Product Correlation, both of which were used in this study. Collected data from the TEOSQ and PMCSQ allowed for a Median Split approach. Each of the instruments produced a total for items that were task- and ego-oriented. The mean was then calculated for each student according to responses given for the task-oriented items. The same procedure was used for the ego-oriented items. Those two procedures produced two numbers between 1 and 5. The median split approach indicated that any student with a mean value of 1.0 to 3.000 was labeled low in that particular orientation. Any student with a mean value of higher than 3.000 was labeled high in that particular orientation. The median was determined to be 3.000. This value was selected to ensure that any student producing a score of 3.0 would be included
in a group. Students were then determined to have a combination of the two orientations given their responses to items on the TEOSQ or PMCSQ. Such combinations could be high-task and high-ego, high-task and low-ego, low-task and high-ego, and low-task and low-ego.

Data collected regarding the students’ racial and/or ethnic background was split into three groups. Given the possible choices on the demographic sheet, students who selected “Caucasian or white (Not of Hispanic Origin)” were placed in the Caucasian group. Students who selected “African-American or black” were placed in the African-American group. Students who selected “Hispanic/Latino,” “Asian or Pacific Islander,” “Native American,” or “Multiracial” were placed in the Other group. This was done to separate students into groups so that appropriate data analysis could be completed.

Descriptive statistics were calculated for the entire group, and boys and girls separately. The three groups must be considered because there may be curricular differences according to the teacher of the class. Thus, for each research question addressed, the three above groups must be considered in addition to the values being compared. The following will indicate the research question and method used to analyze the data with which it is associated.

**Research Question 1: Do Differences Exist in the Perceptions of Motivational Climates between Middle School Students of Different Racial and Ethnic Backgrounds?**

A 3 race/ethnicity (Caucasian, African-American, Other) by 2 gender (male, female) by 4 perception (high-task/high-ego, high-task/low-ego, low-task/high-ego, low-task/low-ego) ANOVA procedure was used. A Tukey follow-up procedure was used to determine what differences existed between groups. Data used for this procedure was collected using the PMCSQ and demographic form. This procedure was used once to
calculate if any differences existed among the entire student group. A second ANOVA (3 race/ethnicity x 4 perception) was used to calculate any differences that may exist among male students. An ANOVA (3 race/ethnicity x 4 perception) was also used to calculate any differences among female students. Two of the three (male and female) ANOVAs conducted were calculated using the 3 by 4 matrix. The first (entire group) ANOVA conducted used the 3 x 2 x 4 matrix. Calculations from the ANOVA’s indicated if perception differences existed among the 3 racial and ethnic groups.

**Research Question 2: Do Differences Exist in the Achievement Goal Orientation between Middle School Students of Different Racial and Ethnic Backgrounds?**

A 3 race/ethnicity (Caucasian, African-American, Other) by 2 gender (male, female) by 4 orientation (high-task/high-ego, high-task/low-ego, low-task/high-ego, low-task/low-ego) ANOVA was used. A Tukey follow-up procedure was used to determine any differences that might exist among groups. Data used for this procedure was collected using the TEOSQ and demographic form. Similarly to the procedure used for the data analysis of the first research question, an ANOVA was used to calculate possible differences among the boys, among the girls, and among the entire student group. A second ANOVA (3 race/ethnicity x 4 perception) was used to calculate any differences that may exist among male students. An ANOVA (3 race/ethnicity x 4 perception) was also used to calculate any differences among female students. Two of the three (male and female) ANOVAs conducted were calculated using the 3 by 4 matrix. The first (entire group) ANOVA conducted used the 3 x 2 x 4 matrix. Calculations from the ANOVA’s indicated if goal orientation differences existed among the 3 racial and ethnic groups.
Research Question 3: What, if any, Relationship Exists Between Achievement Goal Orientation and Perception of the Motivational Climate among Middle School Students of Different Racial and Ethnic Backgrounds?

A Pearson-Product Correlation was used to determine if relationships exist between values produced for the TEOSQ and PMCSQ for students. Each student’s value for the TEOSQ was compared to the value for the PMCSQ. This was done for the entire group first. Then, those values were compared amongst the male students. Finally, those values were compared amongst the female students. Each comparison produced a value that indicated if there was a relationship between values obtained on the TEOSQ and PMCSQ. Correlation values were evaluated within the race and ethnic groups as well as were compared to the other two race and ethnic groups. The comparison groups that were evaluated were Caucasian males, Caucasian females, Caucasian entire student group, African-American males, African-American females, African-American entire student group, Other males, Other females, and Other entire student group.

Research Question 4: What Differences, if any, Exist in the Establishment of an Actual Motivational Climate and Student Perception of that Motivational Climate?

A 3-way ANOVA was used to calculate the differences that might exist between student perception and the established climate. A 3 race (Caucasian, African-American, Other) by 4 perception (high-task/high-ego, high-task/low-ego, low-task/high-ego, low-task/low-ego) by 3 climate (task-involving, ego-involving, neutral) ANOVA was used. A Tukey follow-up procedure was used to determine if differences exist. Data used for the procedure were collected using the PMCSQ and PECAI. A 3-way ANOVA was used to calculate if there are any differences among the entire student group. A second 3-way ANOVA was used to calculate any differences that may exist among male students. A 3-way ANOVA was also used to calculate any differences among female students. The
calculated values indicated if there were any differences that exist between perceived and the established motivational climates.
CHAPTER 4
RESULTS

Results from the collected and analyzed data for research question 1, research question 2, research question 3, and research question 4 will be presented in the following text. Also, description of the two class environments will be illustrated.

Data Analysis Results

Research Question 1: Do Differences Exist in the Perceptions of Motivational Climates between Middle School Students of Different Racial and Ethnic Backgrounds?

Participants’ means and standard deviation scores on the PMCSQ are displayed in Table 1.

Table 1. Descriptive Statistics of Comparison of PMCSQ Scores among Students of Different Race and Ethnicity

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Gender</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Male</td>
<td>1.45</td>
<td>.68755</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1.81</td>
<td>.40311</td>
<td>16</td>
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<td></td>
<td>Total</td>
<td>1.66</td>
<td>.55470</td>
<td>27</td>
</tr>
<tr>
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<td>1.57</td>
<td>.53452</td>
<td>7</td>
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<tr>
<td></td>
<td>Female</td>
<td>2.00</td>
<td>.00000</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.76</td>
<td>.43853</td>
<td>13</td>
</tr>
<tr>
<td>Other</td>
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<td>.68874</td>
<td>13</td>
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<tr>
<td></td>
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</tr>
<tr>
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<td>2.00</td>
<td>.87706</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>Male</td>
<td>1.64</td>
<td>.66073</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1.95</td>
<td>.56232</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.77</td>
<td>.63444</td>
<td>54</td>
</tr>
</tbody>
</table>

Results of the 3 race/ethnicity by 2 gender by 4 perception ANOVA on the PMCSQ grouping scores for the entire sample revealed a significant main effect for race [$F(2,48) = 8.906, p = 0.001$] and gender [$F(1,48) = 18.495, p = 0.000$]. A significant
interaction of race by gender was also revealed by the data \( F(2,48) = 4.405, p = 0.018 \). Interestingly, however, the post-hoc Tukey test revealed no significant differences between racial groups. Because this is a rare statistical outcome, the Partial Eta or practical significance was examined and revealed that only approximately 27.1% of the variance was explained by race. These results are best explained by the relatively small sample size.

Results of the 3 race/ethnicity by 4 perception ANOVA on the PMCSQ group for only females revealed a significant main effect for race \( F(2,20) = 18.540, p = 0.000 \). However, these results should be viewed cautiously as one racial grouping (Other) had fewer than two cases and no post-hoc tests were performed.

Results of the 3 race/ethnicity by 4 perception ANOVA on the PNCSQ group for only males revealed that there was no significant main effect for race \( F(2,28) = 1.111, p = 0.343 \). This indicates that race was not an influence on the perceived motivational climate for the male group.

**Research Question 2: Do Differences Exist in the Achievement Goal Orientation between Middle School Students of Different Racial and Ethnic Backgrounds?**

Participants’ means and standard deviation scores on the TEOSQ are displayed in Table 2.

Results of the 3 race/ethnicity by 2 gender by 4 orientation ANOVA on the TEOSQ grouping scores for the entire sample revealed no significant main effects for race \( F(2,48) = 0.470, p = 0.628 \) or gender \( F(1,48) = 0.356, p = 0.554 \). In addition, no significant interaction of race by gender was found \( F(2,48) = p = 0.757 \). These data indicate that there were no statistically significant differences between participants’ task and ego orientations.
Table 2. Descriptive Statistics of Comparison of TEOSQ Scores among Students of Different Race and Ethnicity

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Gender</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>Male</td>
<td>1.27</td>
<td>.90453</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1.50</td>
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<td></td>
<td>Total</td>
<td>1.40</td>
<td>.69389</td>
<td>27</td>
</tr>
<tr>
<td>African-American</td>
<td>Male</td>
<td>1.14</td>
<td>.37796</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1.50</td>
<td>.54772</td>
<td>6</td>
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<tr>
<td></td>
<td>Total</td>
<td>1.30</td>
<td>.48038</td>
<td>13</td>
</tr>
<tr>
<td>Other</td>
<td>Male</td>
<td>1.15</td>
<td>.37553</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1.00</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.14</td>
<td>.36314</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>Male</td>
<td>1.19</td>
<td>.60107</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1.47</td>
<td>.51075</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.31</td>
<td>.57705</td>
<td>54</td>
</tr>
</tbody>
</table>

Results for both 3 race/ethnicity by 4 orientation ANOVA’s on the TEOSQ grouping scores for only females \[F (2,28) = 0.140, p = 0.870\] and for only males \[F (2,28) = 1.111, p = 0.343\] each revealed no significant main effects for race on TEOSQ grouping scores. Again, this indicates that there were no differences among racial groups’ task and ego orientations.

Research Question 3: What, if any, Relationship Exists Between Achievement Goal Orientation and Perception of the Motivational Climate among Middle School Students of Different Racial and Ethnic Backgrounds?

Correlations between the PMCSQ and TEOSQ scores are displayed in the Table 3.

Results for the Pearson-Product Correlation test for the entire group produced a significant correlation between the TEOSQ task and PMCSQ task, and TEOSQ ego and PMCSQ ego scores. The scores for the TEOSQ task and PMCSQ task revealed a correlation of .474 at the \(p < .01\) level. The scores for the TEOSQ ego and PMCSQ ego revealed a correlation of .439 at the \(p < .01\) level.
Table 3. Correlations of PMCSQ and TEOSQ Scores among Students with Different Race and Ethnicity

<table>
<thead>
<tr>
<th></th>
<th>TEOSQ task</th>
<th>TEOSQ ego</th>
<th>PMCSQ task</th>
<th>PMCSQ ego</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TEOSQ task</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>.083</td>
<td>.474</td>
<td>-.289</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.551</td>
<td>.000</td>
<td>.034</td>
</tr>
<tr>
<td>N</td>
<td>54</td>
<td>54</td>
<td>54</td>
<td>54</td>
</tr>
<tr>
<td><strong>TEOSQ ego</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.083</td>
<td>1</td>
<td>.126</td>
<td>.439</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.551</td>
<td>.551</td>
<td>.362</td>
<td>.001</td>
</tr>
<tr>
<td>N</td>
<td>54</td>
<td>54</td>
<td>54</td>
<td>54</td>
</tr>
<tr>
<td><strong>PMCSQ task</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.474</td>
<td>.126</td>
<td>1</td>
<td>-.098</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.362</td>
<td>.479</td>
<td>.479</td>
</tr>
<tr>
<td>N</td>
<td>54</td>
<td>54</td>
<td>54</td>
<td>54</td>
</tr>
<tr>
<td><strong>PMCSQ ego</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>-.289</td>
<td>.439</td>
<td>-.098</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.034</td>
<td>.001</td>
<td>.479</td>
<td>.479</td>
</tr>
<tr>
<td>N</td>
<td>54</td>
<td>54</td>
<td>54</td>
<td>54</td>
</tr>
</tbody>
</table>

Results for the Pearson-Product Correlation test for the female group produced a significant correlation between the TEOSQ task and PMCSQ task scores. The scores for the TEOSQ task and PMCSQ task revealed a correlation of .425 at the $p < .05$ level. However, when comparing scores for African-Americans in the female group, there was a significant correlation between the TEOSQ ego and PMCSQ ego scores as they revealed a correlation of .882 at the $p < .05$ level. There were no significant correlations between TEOSQ and PMCSQ scores for Caucasian girls. A Pearson Product Correlation test could not be used for the Other group because there was only one case.

Results for the Pearson-Product Correlation test for the male group produced a significant correlation between the TEOSQ and PMCSQ for the task and ego scores. The TEOSQ task and PMCSQ task showed a correlation of .487 at the $p < .01$ level, while the TEOSQ ego and PMCSQ ego showed a correlation of .367 at the $p < .05$ level. However, when comparing scores within the three race/ethnicity groups, no significant correlations were found between the TEOSQ and PMCSQ.
Research Question 4: What Differences, if any, Exist in the Establishment of an Actual Motivational Climate and Student Perception of that Motivational Climate?

Male class

The overall climate for the male class in this study was determined to be neutral. Based on the codings from the PECAI, the climate in the class was more neutral than either ego or task-involved. However, because there was a relative consistency among the three perceived climates (24% task, 28% ego, and 48% neutral), no one true climate was established by the teacher. Codings for the PECAI for the male class can be found in Table 4.

Table 4. Codings for the PECAI for the Male Class

<table>
<thead>
<tr>
<th></th>
<th>Task</th>
<th></th>
<th></th>
<th>Ego</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw score</td>
<td>%</td>
<td>Raw score</td>
<td>%</td>
<td>Raw score</td>
</tr>
<tr>
<td>Task</td>
<td>12</td>
<td>40</td>
<td>0</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Authority</td>
<td>12</td>
<td>40</td>
<td>0</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Rewards</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>72</td>
<td>7</td>
</tr>
<tr>
<td>Grouping</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>24</td>
<td>19</td>
</tr>
<tr>
<td>Evaluation</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>72</td>
<td>7</td>
</tr>
<tr>
<td>Time</td>
<td>12</td>
<td>40</td>
<td>0</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Total Score</td>
<td>36</td>
<td>24</td>
<td>42</td>
<td>28</td>
<td>12</td>
</tr>
</tbody>
</table>

The first three classes that were observed were taught by a substitute teacher as the regular instructor was absent. The substitute may be described as a Caucasian female. Students, on those days, participated in “free play” in which they were able to choose to participate in any activity they desired. Activities ranged from playing half-court basketball, playing “keep away,” walking around the gym, playing hacky-sack, and sitting in the bleachers and talking to other students. Two groups of students would play half-court basketball at the two different baskets. Two different substitutes were assigned to the class, and both displayed relatively low amounts of interaction with the students after giving the “free play” assignment.
On the fourth day of observations, the regular instructor for the class returned. Upon return, the class began a new unit on the “decathlon.” The instructor explained how points would be earned based on benchmark times and distances. As was the case on five of the seven days led by the regular instructor, students performed calisthenics at the beginning of class in the school gymnasium. During calisthenics, students led the progression of activities as the instructor watched. Afterwards, the instructor led the students in a warm-up in which students participated in various movements (e.g. running with high knees, carioca, skipping) from one side of the gymnasium to the other. Following warm-up, sometimes the instructor would teach students about proper form to execute the task of the day. Demonstrations would usually be performed by a student. Following the briefing session, students would often go and participate in the day’s activity.

On day four, students ran the 50-meter dash. Students were timed and were told to run against someone of like ability. When students finished running, their respective times were announced by the instructor and recorded by a student. This same procedure was used for the 100 meter dash the following day. On both days, once students had participated in the activity one time, the class returned to the gymnasium for “free play” for the remainder of the class period. On day six, students participated in calisthenics and warm-up and then participated in the shot put. Students were given two throws each for distance, which were announced by students retrieving the shot and recorded by the instructor. Upon completion of the two puts, students were allowed to have “free play” in the schoolyard. Day seven differed in that students did not do calisthenics or warm-up before participating in the 200-meter dash. Again, student times were announced publicly
by the instructor and recorded by a student upon finishing the event. After all students
had participated in the event, they returned to the gymnasium for “free play.”

Day 8 was an extended period due to the scheduling at the school. Class was
extended from one to two periods. Students did calisthenics, a warm-up, and then were
instructed on how to properly hurdle and throw the discus before they went to participate
in each event. Students were told to practice the 110-meter low hurdles while the
instructor went with a group to watch them perform the discus. Students were given two
throws each and scores were announced and recorded by the instructor. After all students
had finished throwing the discus, the instructor had students run the 110 meter hurdles.
Student times were announced by the instructor and recorded by a student. On day nine,
students did calisthenics and warm-up, and then practiced in the gym for the long jump.
The class then went outside where students performed two jumps which were announced
and recorded by the instructor. The final day of observation, day ten, students were given
the assignment of “free play” for the period. This time, some students chose to play
football outside, while others played half-court basketball and sat in the bleachers and
talked in the gymnasium. The instructor swept the gymnasium floor during this time. At
the end of the class, administration of the questionnaire packet took place.

Female class

The overall climate for the female class in this study was neutral. Based on the
codings from the PECAI, the climate in the class was more ego than task-involved.
However, because there was a relative consistency among two of the three perceived
climates (6.7% task, 46.7% ego, and 46.7% neutral), no one true climate was established
by the teacher. Codings for the PECAI for the male class can be found in Table 5.
A student teacher (female) was present in the class during observations. The primary amount of instruction during observation came from the regular instructor, except when the class was separated into small games and the student teacher was asked to supervise one of the games. Also, on day four, the regular instructor was absent and the student teacher was asked to instruct the class.

On days one through five, the students participated in game play as the concluding portion of the unit of ultimate frisbee. Students had already been divided into teams of four and five, thus when they arrived at the field, quick instructions about points of focus were given by the instructor before teams were to begin play. Games lasted about twenty minutes on average, and were continuous except for water breaks and when the instructor would stop the game to make comments. Even on the fourth day when the regular instructor was absent, the student teacher followed the same general format.

On day six, students began a unit on soccer. During the unit, students mostly participated in drills administered by the instructor. The first couple of days (six and seven) were marked by students performing in dribbling drills to and between cones. These tasks were often initiated and set-up by the instructor and all students performed the task together. Students were generally given several trials to perform the task before

<table>
<thead>
<tr>
<th>Task</th>
<th>Neutral</th>
<th>Ego</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw score</td>
<td>%</td>
</tr>
<tr>
<td>Task</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Authority</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rewards</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Grouping</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>Evaluation</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Time</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>Total Score</td>
<td>10</td>
<td>6.7</td>
</tr>
</tbody>
</table>
the instructor moved to the next task. The instructor gave recognition for accomplishment and encouragement publicly.

Day 8 for the females was similar to that of the males in that the class period was extended to two periods due to school scheduling. Tasks on that day included “taps,” dribbling, and passing. The students participated in seven different tasks that were presented and set-up by the instructor. All tasks had the same coding for perceived climate on the PECAI. The ninth day was similar to the previous day as students participated in drills in dribbling and passing. Again, tasks were arranged and conducted by the instructor in the same fashion as was described previously. The final day of observation saw students perform in more soccer drills led by the instructor. At the end of the class, administration of the questionnaire packet took place.

The PECAI revealed a lack of consistent teaching cues from both teachers as they provided an almost equal portion of ego, task, and neutral motivational cues to the students. In other words, the actual motivational climate was neither strongly ego- nor strongly task- involving. While students may have a particular perception of the teaching environment, connections between their perception and the actual climate cannot be deduced statistically and is also problematic theoretically. Thus, this research question was not pursued.
CHAPTER 5
DISCUSSION

The purpose of this study was to examine the achievement goal orientations and perceived motivational climate of racially and ethnically diverse middle school students in physical education classes to see if student perceptions or orientations vary across racial and ethnic populations. No previous research has sought to identify any differences that might exist between students of different racial and ethnic backgrounds when considering their achievement goal orientation (Nicholls, 1984, 1989) and perceptions of the motivational climate (Roberts, Kleiber, & Duda, 1981) in the physical education setting. While research indicates that students might be affected by negative stereotypes that are associated with a student’s particular race or ethnicity (Steele, 1997), such investigations have not been completed in the field of physical education. Though the threat of negative stereotype was not measured for this study, the theory allowed for the assumption that there may be some influence of racial and ethnic elements in the physical education setting.

The combination of achievement goal theory (Nicholls, 1984, 1989) and negative stereotype theory (Steele, 1997) allows for consideration of the possibility that students with different racial and ethnic backgrounds may have different achievement goal orientations because they might perceive the physical education climate differently. The stereotypes exhibited in studies by researchers examining perceptions of athletic participation and racial identity has generally shown that blacks were often viewed as more athletic than whites and whites were viewed as more intelligent than blacks (Biernat
& Manis, 1994; Harris, 1997; Sailes, 1996). Such stereotypes were shown to possibly affect participation in athletics (Stone, Sjomeling, Lynch, & Darley, 1999), producing thoughts that the framing of performance and cues may help to reduce or influence the salience of negative stereotypes. Such suggestions are similar to those presented by researchers of achievement goal orientations and motivational climate in physical education (e.g., Todorovich & Curtner-Smith, 2002, 2003) who proposed that teachers have the ability and authority to influence the psychosocial motivational climate of the physical education setting and to influence student motivation. The perceptions of students in those climates have been shown to indicate a relationship between climate perception and student goal orientation (Ntoumanis & Biddle, 1997), which is of interest in this study.

The first research question sought to find if differences exist in the perceptions of the motivational climate of students of different racial and ethnic backgrounds. Given the previous research and assumptions made based on that research, the question was one that could have proven that students perceive the motivational climate due to their racial or ethnic backgrounds. The data in this study revealed that there may be some influence in terms of the perceptions of the motivational climate when considering the entire student group (both gender and all three race/ethnicity groups included). However, the limited sample size (N = 54) may be the reason a post-hoc Tukey failed to identify any further conclusions. Thus, only inferences and assumptions can be made regarding the affects of race and gender on student perceptions in this study. Further, the female group shows, too, that some influence may be present when considering the perceptions in this
study. However, the lack of numbers in the Other group (N = 1) require that caution be taken when considering the true effects of the outcome.

When considering these results, it is striking that the male group did not show a main effect, but the female and entire groups did reveal a main effect. Also, the interaction of race by gender was shown to be significant. It might be speculated that the reason for the different results between the female and male groups could be related to the established climate of the female class since a main effect was not seen in the males. However, it would not be reliable to make such judgments at this juncture. The data of this research question indicate a significant main effect when comparing the entire student group. What is interesting now is to see if it is possible to identify why those differences may exist and what has caused such differences to produce the main effect. While it will not be seen using the participants of this study, future research should seek to not only identify if differences occur, but discover what the causes for such differences might be.

While differences were revealed for the PMCSQ when comparing students of different racial and ethnic backgrounds, the same was not true for the comparisons of TEOSQ scores. When comparing scores at the entire group, male only, and female only levels, no significant main effects were shown for differences in TEOSQ scores. The resulting data shows that the students of different racial and ethnic groups used in this study do not differ in achievement goal orientation when comparing the entire group, males, and females. Similarly to the results from the first question about the PMCSQ, these results may be affected by sample size (N = 54).
To assume the answer as to why data revealed these results is not within the scope of this study. The aim was to identify if any differences exist in the goal orientations of the students used in this study when considering their race and ethnicity. Similarly to the comments made above, future research should seek to identify if any differences exist and attempt to recognize what causes such differences. No hypotheses were made for this study as they pertain to predicting the outcome of data analysis for the four research questions; however the previous research conducted on physical education student achievement goal orientation and the negative stereotype threat theory led to the desire to ask such questions. While it will not be assumed that the data from this study is representative of the entire population, the quest to find if differences exist in goal orientation should not be concluded at this time.

What is interesting about the results revealed in analysis of the data in the third research question is that while the first two analyses did not produce significant differences, the third analysis of the correlation between the PMCSQ and TEOSQ scores showed several cases of significant correlation. When viewing the entire group, the significance levels for both components (task and ego) of the PMCSQ and TEOSQ were lower than the 0.01 level. There was also significant correlation discovered for the female only group (TEOSQ task and PMCSQ task), African-American female (TEOSQ ego and PMCSQ ego), and male (TEOSQ task and PMCSQ task, and TEOSQ ego and PMCSQ ego). The data seems to be in agreement with the findings of Ntoumanis and Biddle (1998). They concluded that students with perceptions of a performance (e.g., ego-involving) climate were most likely ego-oriented, and those students with perceptions of a mastery (e.g., task-involving) climate were most likely task-oriented.
What is even more interesting is when running the Pearson-Product Correlation test and one-tailed significance, the resulting data produced figures worth mentioning. When running the test for African-American males and females, significant correlation was found for both groups for the TEOSQ ego and PMCSQ ego scores. Similarly, when running the test for Caucasian males and females, significant correlation was found for both groups for the TEOSQ task and PMCSQ task scores. Though the correlations were not equal, nor even similar, and the levels of significance were different ($p < .01$ for African-American female group and $p < .05$ of other 3 groups), it is still interesting to see that correlations were found in the TEOSQ and PMCSQ for the groups of like racial and ethnic background for both gender groups. Could it be that the African-American students were perceiving an ego-involving climate that suggested they would be more successful if they put forth less effort, yet still did better than their classmates (Thorkildsen & Nicholls, 1988) and ultimately adopted that corresponding ego-orientation? Again, Ntoumanis and Biddle (1998) found that students who perceived a motivational climate also possessed the coordinating goal orientation. When bearing in mind the stereotypes that are most often associated with African-American participants in sports, and the close association of sports and physical education, the possibility that both the male and female students perceive and are oriented to adopt the maladaptive behaviors of ego-orientation leads only to the speculation that the African-American students in this study are concerned with displaying high ability levels so as to demonstrate their superior athletic ability compared to other students in the class. Not only did one racial and ethnic group used in this study produce a similar correlation between TEOSQ and PMCSQ scores, but two groups in each of the gender groups had
significant correlations for the same orientation and involvement. Why this occurred can only be speculated, however it raises interest as to how such findings came to fruition. Certainly there are some relationships between achievement goal orientation and perceptions of the motivational climate for 4 of the 9 total groups in the study, and 7 of the 9 total groups when using a one-tailed test, but it remains a mystery as to what caused such correlations.

As noted in the results, the fourth research question was not pursued once data from the PECAI revealed that neither teacher established a strong task- nor ego-involving motivational climate. This was due to the lack of cues that would have facilitated a strong climate. Rather, the teachers used actions and language that were coded as neutral according to the instructions of the PECAI. So, while students’ perceptions of the motivational climate could be detected, such comparisons could not be made to the actual motivational climates of the two classes.
CHAPTER 6
CONCLUSION

This study sought to find answers to questions that had not yet been asked in the field of research in physical education. Two theories were used to support the practicality of asking questions about the motivational climate perceptions and achievement goal orientations of students with different racial and ethnic backgrounds. While the data collected in this study did not produce overwhelming evidence as to whether such differences and relationships existed in the perceptions and orientations of the students, such evidence still allows for additional questions.

Limitations

There were several limitations to the present study that should be recognized. First, the small sample size seems to have had a direct effect on data analysis and the results. As reported, the number of cases in the Other female group were less than two after participant attrition, thus, not allowing for certain statistical procedures to be conducted. The small sample size, which was the product of small class sizes, also did not allow for post-hoc Tukey tests to be effectively performed as seen in the data analysis of the first research question. Generalization of results certainly cannot be considered given the current sample size, and might be hard to justify given a larger sample as well. Stereotypes are the products of generalization that do not always aid in the presentation of information, thus such efforts regarding results from a similar study may not be beneficial.
A second limitation worth noting was the establishment of neutral motivational climates in each of the classes. Because both classes were coded as neutral according to the PECAI, analysis of the fourth research question could not be conducted. Such analysis would have indicated if students’ perceptions are similar or different than the actual motivational climate established in the class. The information might have allowed for further speculation, and certainly would have allowed for questioning of the reasons why students of different racial and ethnic backgrounds do or do not perceive the motivational climate as it actually is. Without the establishment of a strong task- or ego-involving climate, an entire research question in this study has gone without analysis.

The self-report data from the questionnaire packet, including the PMCSQ, TEOSQ, and demographic form, is yet another limitation of the study. It is uncertain what affect on the data was caused by participants’ desire to finish quickly, or understanding of the instructions and instrument statements. However, a certain level of self-report error would likely be present across all situations.

A final limitation is the convenience sampling and recruitment procedures used. Due to the nature of the study and the time constraints under which it took place, the study was limited in the sampling of participants at one school. In addition, the two classes met at the beginning of the school day (first and second periods). The participants in the current study may not be representative of the students at the school due to time of the class, and are not representative of all middle school students. Such sampling and recruiting was caused by external factors which pose a limitation in the current study.

**Future Considerations and Closing Remarks**

Future research in physical education, as it pertains to race and ethnicity, is of importance. Research in this area has not saturated the literature base and poses potential
for producing interesting and helpful information. Further research in this area may lead
to the production of greater teaching methods aimed at considering the well-being of all
students. This may be helpful in ensuring that all students benefit and maximize their
opportunities while participating in physical education. Similar to the case of the
production of stereotypes, not all research can be applied to all settings and populations.
Thus, consideration to generalizability must be given when seeking answers even in
samples larger than that used in the current study. However, data gathered from a larger
population may lead to further consideration of this topic if the data reveals that
significant differences and correlations can be found in PMCSQ and TEOSQ scores of
students of different racial and ethnic backgrounds. Yet, even if significant differences
and correlations are still not found, such information helps in understanding that
supposed differences between students of different racial and ethnic backgrounds are less
evident than suspected. Either result leads to further enrichment of our knowledge about
the differences between groups of different races and ethnicities.

This study sought to find if any differences and correlations existed in the sample
population; however, future research may consider why such differences and correlations
exist. Though the negative stereotype threat theory (Steele, 1997) was used as supportive
evidence that the potential exists for students to perceive a climate differently according
to their racial and ethnic background, this study did not directly seek to understand why
students have such perceptions. More so than just understanding if differences exist,
attempts should be made to understand why differences exist, if in fact they do.
Knowledge of the causes of differences and correlations in the perceptions and
orientations of students would likely lead to greater understanding of how best to motivate and teach students within the physical education setting.

Seeking to find the perceptions of the motivational climate and goal orientations of students of different racial and ethnic backgrounds should continue to be sought in various environmental settings. This study was conducted through observation at a rural school, thus observations in the future should be made in urban and suburban settings as well. Considering the socioeconomic status of the participants in this study, research in more affluent communities and schools might reveal differing results than those revealed in this study. Also, research should seek to find if any differences exist between the various levels of schools (e.g., elementary, middle, high school) to see if students’ perceptions and orientations change with age. Seeking to find as much information about students’ perceptions and orientations in various environments will help in understanding if certain contextual elements (e.g., socioeconomic status, grade level, school setting) influence students.

Finally, the affect of the activity on the perceptions of the students would be interesting research in the future. Since certain stereotypes about sports participation have been attached to various races and ethnicities, it would be interesting to see if participation in a sport in physical education elicits a different perception from participants when the sport is stereotypically associated with their race or ethnicity, compared to when participating in a sport stereotypically unassociated with their race or ethnicity. Do African-American students have a different perception of the motivational climate and orientation when in a basketball unit in physical education than when in a soccer unit? Do Caucasian students have a different perception when in a tennis unit than
when in a track unit? The influence of activity was not directly considered in this study, but would be of interest in future research.

While the data and results from the current study were limited in the failed attempt to find statistical significance, the importance of such research is not diminished. This study sought to find if any differences or correlations in students, when considering their racial and ethnic backgrounds, could be found. Data analysis hints at the possibility that such differences and correlations exist, and certainly the sample size influences much of the interpretation, yet the results lead to more intriguing questions. Why differences exist in some of the analysis cannot be concluded. Such is the case for understanding why correlations exist when comparing student perceptions and orientations as well. Finding even a small amount of evidence indicating that differences and correlations exist in students leads to the possibility of the need for future research in this area and temporarily validates the attempt of this study to find such differences and correlations.
APPENDIX A

PHYSICAL EDUCATION CLIMATE ASSESSMENT INSTRUMENT (PECAI)

The Physical Education Climate Assessment Instrument (PECAI) focuses on determining the overall motivational achievement goal orientation climate established in a physical education classroom. It uses a task-by-task analysis to measure the number of tasks where behaviors related to fostering a task or ego achievement goal orientation occur.

Category Descriptions

The categories of the PECAI are based on Ames (1992) and Epstein's (1988) work on classroom structure and climate. Ames' and Epstein's focus was on the alterable components of a lesson. These aspects of the lesson include (a) task, (b) authority, (c) rewards, (d) grouping, (e) evaluation, and (d) time. The acronym TARGET is used to refer to these components, and the choices teachers make regarding these components determine the degree to which a classroom is more task-involving or ego-involving in relation to Nicholls (1984, 1989) achievement goal theory. The categories of the PECAI consist of six TARGET components for the task orientation and six TARGET components for the ego orientation.

Recording Procedures

A researcher using the PECAI codes each task that occurs during a physical education lesson. A task is defined as "a unit of work given verbally and/or visually by the teacher that focuses students on the intended skill or aspect of that skill to be executed once the activity is initiated" (Rink & Werner, 1989). Coding involves deciding whether
the task, authority, rewards, grouping, evaluation, and time components of the task indicate that the teacher is creating an ego or task-oriented climate according to the criteria outlined by Ames (1992) and Epstein (1988). In addition, when the orientation of a component for a specific task is undetermined, it is coded as neutral. After a task is presented or introduced, the coder stops the videotape and codes the task and authority components. The videotape is then played until the task has been completed. At this time, the tape is stopped and the rewards, grouping, evaluation, and time components are coded.

Summarizing and Interpreting the Data

Once all the tasks in a lesson have been coded, the number and percentages for each element coded as task, ego, or neutral are computed. In addition, the total raw score and percentage for task, ego, and neutral codings are computed for the lesson. Researchers coding a series of lessons can then compute mean percentages of ego, task and neutral codings across lessons in total and for TARGET components.

Inter- and Intra-Observer Reliability

Intra-observer reliability is checked using the methods described by van der Mars (1989). This involves the researcher coding a videotaped "reliability" lesson before a study commences. This practice will be recoded after a specified amount of time has passed (e.g., one week). The second coding of the reliability lesson is then compared to the original. Intra-observer agreement is then calculated by using event-by-event comparisons of TARGET categories, and by dividing the number of agreements by the number of agreements plus the number of disagreements and multiplying the result by
100. An 80% agreement level or higher is usually considered reliable as suggested by van der Mars (1989).

Further intra-observer reliability checks can be made in order to check for "observer drift." This involves recoding the original reliability lesson and comparing the new codings with the original. An 80% agreement level or higher is usually considered to be reliable for these reliability checks as suggested by van der Mars (1989).

Inter-observer reliability involves two coders independently coding a single videotaped lesson designated as the “reliability lesson.” Inter-observer agreements is calculated by using event-by-event comparisons of TARGET categories and dividing the number of agreements by the number of agreements plus the number of disagreements and multiplying the result by 100.
Definitions of Categories for the PECAI

Task Achievement Goal Orientation Categories

The task achievement goal orientation categories describe those aspects of the TARGET components that foster a task-oriented lesson.

Task. Individuals are given different tasks and assignments to perform. Children may set their own short-term, realistic goals.

Authority. The students choose tasks they want to learn and have the opportunity to set up their own equipment and tests. Students are allowed to monitor and evaluate their own performance.

Rewards. Recognition for progress or accomplishment is private between teacher and student. Opportunity is equal for rewards. The focus on rewards is on each child's individual self-worth.

Grouping. Students work on individual tasks; however, if this is impractical, students work in small cooperative groups. Grouping is flexible and heterogeneous.

Evaluation. Evaluation is self-referenced only and is based on personal improvement. Progress is made in terms of individual goals, participation, and effort. Assessment is kept private between teacher and student.

Time. Students are given enough time to make improvements on the selected skills. Children help to plan, schedule, and order rate of improvement.
Ego Achievement Goal Orientation Categories

The ego achievement goal orientation categories describe those aspects of the TARGET components that foster an ego-oriented lesson.

Task. All students attempt the same task focusing on the same assignment. The teacher determines the goals for the students.

Authority. The teacher makes all decisions about what students will learn, sets up all equipment and tests, and performs all evaluations of students.

Rewards. Recognition for progress or accomplishment is made public and rewards are given for superior performances.

Grouping. The entire class works on one task or the students are ability grouped.

Evaluation. Evaluation is norm referenced or rank ordered in the class. The teacher makes assessment public and determines the goals and objectives for the students.

Time. The students are given strict timelines to complete assignments as the teacher determines the time allotments for improvement.
Coding Sheet For The PECAI

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Class:  _____________________________  Teacher: ________________________________________
Start: ______________________________  Stop: ___________________________________________
Time: ______________________________

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Inter- and Intra-observer Reliability Coding Sheet For The PECAI

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Class:  _____________________________  Teacher: ________________________________________
Start: _______________________________ Stop: ___________________________________________
Time: ______________________________

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Sample Coding Sheet For The PECAI

Subject: _________________ Hockey

Class: _________________ 6th grade

Teacher: _________________ Todorovich

Start: _________________ 8:00

Stop: _________________ 8:30

Time: _________________ 30 min.

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Inter- and Intra-observer Reliability Coding Sheet For The PECAI

Subject: _______ Hockey _______

Class: _______ 6th grade _______
Teacher: _______ Todorovich _______

Start: _______ 8:00 _______
Stop: _______ 8:30 _______
Time: _______ 30 min. _______

Task # 1 Task Description: __________ Warm-up __________

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Percent agreement = 9/12 = 75%

Task # 2 Task Description: __________ dribbling practice __________

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APPENDIX B
TASK AND EGO ORIENTATION IN SPORT QUESTIONNAIRE (TEOSQ)

AGE: ______________
GRADE: ___________
GIRL OR BOY: __________

Directions: Sixteen statements are going to be read twice to you. When a statement is read, read along and think about when you feel successful in physical education. After each statement is read, circle ONE of the numbers below the statement. Circle 1 if you strongly disagree with the statement, 2 if you somewhat disagree, 3 if you do not agree or disagree, 4 if you somewhat agree, and 5 if you strongly agree with the statement. Do not skip ahead to the next item until told to do so by me.

1. I feel really successful in physical education when I'm the only one who can do the play or skill.

   1          2    3   4           5
   Strongly Disagree             Disagree                Neutral                Agree                     Strongly Agree

2. I feel really successful in physical education when I learn a new skill and it makes me want to practice more.

   1          2    3   4           5
   Strongly Disagree             Disagree                Neutral                Agree                     Strongly Agree

3. I feel really successful in physical education when I can do better than my friends.

   1          2    3   4           5
   Strongly Disagree             Disagree                Neutral                Agree                     Strongly Agree
4. I feel really successful in physical education when the others can't do as well as me.

1          2    3   4           5
Strongly Disagree             Disagree                Neutral                Agree                     Strongly Agree

5. I feel really successful in physical education when I learn something that is fun to do.

1          2    3   4           5
Strongly Disagree             Disagree                Neutral                Agree                     Strongly Agree

6. I feel really successful in physical education when others mess up and I don't.

1          2    3   4           5
Strongly Disagree             Disagree                Neutral                Agree                     Strongly Agree

7. I feel really successful in physical education when I learn a new skill by trying hard.

1          2    3   4           5
Strongly Disagree             Disagree                Neutral                Agree                     Strongly Agree

8. I feel really successful in physical education when I work really hard.

1          2    3   4           5
Strongly Disagree             Disagree                Neutral                Agree                     Strongly Agree

9. I feel really successful in physical education when I have the highest score.

1          2    3   4           5
Strongly Disagree             Disagree                Neutral                Agree                     Strongly Agree

10. I feel really successful in physical education when something I learn makes me want to go and practice more.

1          2    3   4           5
Strongly Disagree             Disagree                Neutral                Agree                     Strongly Agree
11. I feel really successful in physical education when I'm the best.

1          2    3   4           5
Strongly Disagree             Disagree                Neutral                Agree                     Strongly Agree

12. I feel really successful in physical education when a skill I learn really feels right.

1          2    3   4           5
Strongly Disagree             Disagree                Neutral                Agree                     Strongly Agree

13. I feel really successful in physical education when I do my very best.

1          2    3   4           5
Strongly Disagree             Disagree                Neutral                Agree                     Strongly Agree

14. I feel really successful in physical education when I am more skilled than other people

1          2    3   4           5
Strongly Disagree             Disagree                Neutral                Agree                     Strongly Agree

15. I feel really successful in physical education when I can keep practicing hard.

1          2    3   4           5
Strongly Disagree             Disagree                Neutral                Agree                     Strongly Agree

16. I feel really successful in physical education when I beat others.

1          2    3   4           5
Strongly Disagree             Disagree                Neutral                Agree                     Strongly Agree
Scoring of TEOSQ

1. Add the following numbers for the Task component:
   2, 5,7,8,10,12,13,15

2. Add the following numbers for the Ego component:
   1,3,4,6,9,11,14,16

3. Determine the means for each group and each component.
4. 
APPENDIX C
PERCEIVED MOTIVATIONAL CLIMATE IN SPORT QUESTIONNAIRE (PMCSQ)

The Perceived Motivational Climate in Sport Questionnaire (PMCSQ) is designed to measure the perceived motivational climate in a sport specific setting. The instrument may also be used in the physical education setting. Questions are designed to assess the students’ perceptions of the degree to which their class’ motivational climates are characterized by an emphasis on mastery and performance goals. The 21 item version of the PMCSQ will be used in this study.
Perceived Motivational Climate in Sport Questionnaire

AGE: _____________
GRADE: __________
GENDER: _________

Directions: There are 21 statements below. Read each statement carefully and think about when you are in physical education class. After you read each statement, circle ONE of the numbers below the statement. Circle 1 if you strongly disagree with the statement, 2 if you somewhat disagree, 3 if you do not agree or disagree, 4 if you somewhat agree, and 5 if you strongly agree with the statement.

1. In this physical education class players feel good when they do better that their classmates.

   1  2  3  4  5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

2. In this physical education class students are punished for mistakes.

   1  2  3  4  5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

3. In this physical education class students are sat down for their mistakes.

   1  2  3  4  5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

4. In this physical education class out-performing classmates is important.

   1  2  3  4  5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

5. In this physical education class the teacher pays most attention to the “stars”.

   1  2  3  4  5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

6. In this physical education class doing better than others is important.

   1  2  3  4  5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree
7. In this physical education class the teacher favors some students.

   1   2   3   4   5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

8. In this physical education class students are encouraged to outperform classmates.

   1   2   3   4   5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

9. In this physical education class everyone wants to be the best.

   1   2   3   4   5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

10. In this physical education class only the top students “get noticed”.

    1   2   3   4   5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

11. In this physical education class students are afraid to make mistakes.

    1   2   3   4   5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

12. In this physical education class only a few students can be the ‘stars’.

    1   2   3   4   5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

13. In this physical education class trying hard is rewarded.

    1   2   3   4   5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

14. In this physical education class the teacher focuses on skill development.

    1   2   3   4   5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

15. In this physical education class each student’s improvement is important.

    1   2   3   4   5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree
16. In this physical education class students try to learn new skills.

   1       2       3       4       5
Strongly Disagree  Disagree   Neutral  Agree    Strongly Agree

17. In this physical education class students are encouraged to work on their weaknesses.

   1       2       3       4       5
Strongly Disagree  Disagree   Neutral  Agree    Strongly Agree

18. In this physical education class the teacher wants us to try new skills.

   1       2       3       4       5
Strongly Disagree  Disagree   Neutral  Agree    Strongly Agree

19. In this physical education class students like playing against good teams/players.

   1       2       3       4       5
Strongly Disagree  Disagree   Neutral  Agree    Strongly Agree

20. In this physical education class all students have an important role.

   1       2       3       4       5
Strongly Disagree  Disagree   Neutral  Agree    Strongly Agree

21. In this physical education class most students get to play in the games.

   1       2       3       4       5
Strongly Disagree  Disagree   Neutral  Agree    Strongly Agree
Scoring of the PMCSQ

1. Add the following numbers for the **TASK** component. 13-21

2. Add the following numbers for the **EGO** component. 1-12

3. Determine the means for each group and each component.

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APPENDIX D
DEMOGRAPHIC INFORMATION FORM

AGE: ____________

GRADE: _________

GENDER: (please circle only one)

Male (boy)  Female (girl)

RACE/ETHNICITY: (please circle only one)

Caucasian or white (Not of Hispanic origin)

African-American or black

Hispanic/Latino

Asian or Pacific Islander

Native American

Multiracial
LIST OF REFERENCES


I, Justin Harden, was born in Tucson, Arizona, on January 3, 1980, to Sharon Kelley and Johnnie Harden. My academic career began at Howard University in Washington, D.C., where I studied pre-physical therapy and physical education and played baseball for two years. I transferred and continued my undergraduate education at the University of North Carolina – Chapel Hill where I studied and received my Bachelor of Arts in exercise and sport science in May of 2002. My graduate career began in August of 2003 when I began pursuit of a Master of Science in Exercise and Sport Science degree with a specialization in exercise and sport pedagogy. I taught for 4 semesters in the Sport and Fitness Department under the direction of Gary Nave. I have also had the opportunity to teach classes in the Department of Health Education and Behavior. Upon completion of my master’s degree, I plan on teaching physical education and possibly pursuing a Doctor of Philosophy in physical education teacher education.