

Personal Characteristics of
Beginning, Intermediate, and Advanced Sport Performers

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Danielle R. Chiesi
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Author: Danielle R. Chiesi

Read and Approved by:

Daniel E. Smith
Melissa M. Brown
Yvonne J. Flynn

Date Submitted to the Department of Physical Education and Sport:

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Francis X. Shurt
Chairperson, Department of
Physical Education and Sport

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ABSTRACT

PERSONAL CHARACTERISTICS OF
BEGINNING, INTERMEDIATE, AND ADVANCED SPORT PERFORMERS

DANIELLE R. CHIESI

DEPARTMENT OF PHYSICAL EDUCATION AND SPORT

STATE UNIVERSITY OF NEW YORK

COLLEGE AT BROCKPORT, 1997

DR. DANIEL SMITH

This study investigated differences in six sport specific personal characteristics as a function of skill level. The characteristics included competitive trait anxiety, trait self-confidence, concentration, mental preparation skills, achievement motivation, and leadership. A self-evaluation questionnaire was administered to students in beginning, intermediate, and advanced physical education activity classes at the State University of New York, College at Brockport.

Analysis of variance (ANOVA) and multiple comparison test statistics were used to analyze differences for each of the six personal characteristics and a mental toughness composite score across the three groups of performers.

The results revealed significant differences in achievement motivation in favor of advanced performers over beginners, and advanced performers over intermediate performers. Advanced performers also made better use of their mental preparation skills than beginners. In the area of concentration, intermediate performers posted significantly better scores than beginners. Significant differences among and between the three skill groups were not found for any of the other personal characteristics under investigation. The failure to find additional differences among the three groups of sport performers was explained by the fact that the questionnaires used to obtain the data were designed for the sport context, not a physical education environment.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION.....	1
Statement of the Problem.....	3
Hypothesis.....	3
Assumptions.....	4
Delimitations.....	4
Limitations.....	5
Definitions.....	6
Chapter	
II. REVIEW OF LITERATURE.....	8
Introduction.....	8
Understanding Sport Performance.....	9
intrinsic motivation.....	11
extrinsic motivation.....	12
Personality and Performance Research Studies.....	12
Competitive Trait Anxiety.....	14
Trait Self-Confidence.....	17
Concentration/Attention.....	20
Mental Preparation Skills.....	21
goal setting.....	22
energy management.....	23
stress management.....	24
imagery.....	25
Achievement Motivation.....	25
Leadership Skills.....	27

Chapter

III. METHODS and PROCEDURES.....	29
Subjects.....	29
Instrumentation.....	30
Administration of the Instrument.....	31
Analysis of Data.....	32

Chapter

IV. RESULTS.....	33
Means and Standard Deviations Table.....	34
Analysis of Variance Table.....	36
Summary of ANOVA.....	37
Multiple Comparison Test Results.....	37
Multiple Comparison Test (tables).....	38
Summary of the Multiple Comparison Tests.....	45

Chapter

V. DISCUSSION, CONCLUSIONS, and RECOMMENDATIONS.....	46
Discussion of Results.....	46
Competitive Trait Anxiety.....	47
Trait Self-Confidence.....	47
Concentration.....	48
Mental Preparation Skills.....	49
Achievement Motivation.....	49
Leadership Skills.....	50
Mental Toughness Composite Score.....	50
Conclusions.....	51
Recommendations.....	52
Appendix A: Questionnaire	
References	

Chapter I

Introduction

In the realm of sport, it is only natural that great emphasis and attention are focused on physical skill and its contribution to event outcome. In recent years, it has become evident that personality traits and mental capacities influence the performance of physical skills, and ultimately, the performer's success or failure. For example, with respect to the relationship between motivation and skill, Straub (1978) has written:

Although skill is essential to success in sport, without motivation, skill is of little value. It is only when skill and motivation are both present that optimum performance results (p. 29).

In addition to motivation, several other personal characteristics are deemed important for achieving success in sport. For example, Tutko and Richards (1971) identified eleven personal characteristics that successful athletes possess in varying degrees. They are: drive, aggressiveness, determination, responsibility, leadership, self-confidence, emotional control, mental toughness, coachability, conscientiousness, and trust. Knowledge of these factors can be beneficial to physical educators and coaches because with this

information, effective approaches can be devised and implemented to help students and athletes exert maximum effort. Of course, communication techniques, motivational approaches, and teaching procedures will differ according to the personality traits of the individual and the group (Tutko & Richards, 1971).

To comprehend why people participate in sport, it is important to understand what impels an athlete to action (Gallon, 1980). Martens (1982) identifies three needs which athletes seek to fulfill through sports participation: the need for stimulation and excitement, the need for affiliation and belonging to a group, and the need to feel worthy. Playing for fun is one way to satisfy the need for stimulation and excitement. By joining teams, athletes satisfy their affiliation motive. And, when competence is met, whether it be according to self-imposed or societally-imposed standards, the need to feel worthy is achieved.

Information obtained through personal characteristic evaluations can be utilized in a variety of ways in sport. Research findings help us better understand athletic performance, how males and females function under stress, and how superior athletic performance can be nurtured among different skill levels. Through personal characteristic evaluations, athletes can gain greater insight into their strengths and weaknesses, how well they interact with others, and under which conditions they are most likely to maximize

their performance. Physical educators can identify students' weaknesses through personal evaluations and then design ways to help them enhance performance. Thus, knowledge of personality types can help coaches and physical educators formulate effective strategies for helping their athletes and students achieve performance success (Mechikoff & Kozar, 1983).

Statement of the Problem

The purpose of this investigation was to determine if differences in personal characteristics exist between beginning, intermediate, and advanced sport performers. The personal characteristics under investigation included: competitive trait anxiety, trait self-confidence, concentration, mental preparation skills, achievement motivation, and leadership skills.

Hypothesis

Beginning, intermediate, and advanced performers will differ in the six sport specific personal characteristics. Advanced skill performers will score better than intermediate and beginning skill performers, and intermediate skill performers will score better than beginning skill performers. Specifically, advanced skill performers, when compared to intermediate and beginning skill performers, will display lower competitive trait anxiety, higher trait self-confidence,

better concentration, make better use of their mental preparation skills, have higher achievement motivation, and show superior leadership skills.

Assumptions

Prior to conducting the investigation, the investigator assumed the following:

- (1) Subjects will respond honestly to the self-evaluation questionnaire.
- (2) Subjects will only respond according to the sport context of their particular class (e.g., basketball, soccer, volleyball).
- (3) Subjects were accurately classified according to ability level (e.g., intermediate ability = intermediate activity class).

Delimitations

The following parameters were imposed on the investigation:

- (1) Selection of subjects was restricted to students enrolled in undergraduate beginning, intermediate, and advanced physical education activity classes at the State University of New York, College at Brockport.
- (2) The measurement of personal characteristics was restricted to the six aforementioned variables; no other factors were considered.

- (3) Activity classes were restricted to badminton, basketball, golf, racquetball, soccer, and tennis.

Limitations

Shortcomings of the investigation that could have affected the reliability and/or validity of the data included the following:

- (1) The subjects chosen for each of the three skill levels may not have been representative of all students assigned to classes for that particular skill level in that particular sport.
- (2) Only the instruments that were used to measure trait anxiety and trait self-confidence have established reliability and validity. The instruments used to measure the other four personal characteristics are currently being validated, however, preliminary findings show that each has excellent differentiation ability (Bowe, 1994; Smith & Clack, 1996; Snead, 1995).
- (3) Social desirability factors could have influenced the subjects' scores.
- (4) Most of the instruments used were designed for the sport context, not a physical activity learning situation.

(5) Beginning and intermediate activity classes met three hours per week, while advanced activity classes met seven hours a week. Ideally, all classes should have met the same number of hours, and the same number of times per week.

Definitions

Advanced skill level. The autonomous stage of skill development. The capabilities of the performer are expressed automatically, and without thinking, because he/she is in control of his/her attentional focus. Identification and discrimination of the perceptual world becomes finer, more specific, and more accurate, resulting in precise skill outcomes (Colby, 1996).

Anxiety. Consciously perceived feelings of tension accompanied by arousal of the autonomic nervous system (Bowe, 1994; Snead 1995).

Beginning skill level. The cognitive stage of skill development. Performers have difficulty identifying goals and strategies for success. Explanations of what is to be achieved and guidelines for achieving goals are critical for success and are verbally controlled and monitored (Colby, 1996).

Concentration. Ability to focus one's attention on a specific task (Bowe, 1994; Snead, 1995).

Confidence. Degree of certainty about one's ability to be successful (Martens, 1987).

Extrinsic motivation. Participation because of the external (tangible) rewards associated with involvement in an activity or task (Carron, 1984).

Intermediate skill level. The associative stage of skill development. The performer controls the environment rather than being controlled by it. The learner is able to make corrective responses according to the way the movement feels, rather than how it looks (Colby, 1996).

Intrinsic motivation. Engagement in an activity or task for its own sake - for the enjoyment, excitement, and challenges which are an integral part of involvement in the activity or task (Carron, 1984).

Leadership. The influencing of individuals and groups toward a common goal (Tutko & Richards, 1971).

Motivation. The inner intensity to behave with a sense of purpose (Carron, 1984).

Personality. An individual's unique and relatively stable patterns of behavior, thoughts, and emotions that shape his/her activities and reactions to the environment (Baron, 1992; Horn, 1992).

Chapter II

Review of Literature

Introduction

Personal characteristics refer to an individual's psychological dispositions; how they interact can affect his or her behavior in situations unique to that individual. It is reasonable to assume that these consistencies in behavior can influence athletic performance, and that they are amenable to measurement (Silva, 1984). Physical ability is, of course, a major factor in athletic performance. Just as important, if not more important, are several psychological characteristics, e.g., achievement motivation. Unfortunately, there is relatively little research concerning which personal characteristics are related to athletic performance. However, some work in this area has been conducted at the Institute for Athletic Motivation (ISAM) at San Jose State College (Tutko & Richards, 1971). Some of the more popular personality inventories that have been used to assess the personal characteristics of athletes include The Minnesota Multiphasic Personality Inventory (MMPI) and The Cattell 16 Personality Factor Test (Singer, 1975). However, neither of these inventories are sport specific.

Motivation is an assemblage of factors and processes that impel people to action (or inaction) in various situations. Coaches and physical educators cannot hope to appreciate the complexity of human motivation and personality without a basic understanding of the person, the situation, and the interaction between the two. The formal study of motivation involves a scrutiny of the reasons why people do the things they do, why they perform intensely at certain tasks, and why they persist in performing for sustained periods of time. In order to better inspire their students, physical educators need to be aware of the phenomenon of motivation (Gallon, 1980).

Understanding Sport Performance

Abraham Maslow, a leading psychologist in the field of motivation, proposed a theory based on the satisfaction of human needs. He suggested that human needs exist in a hierarchical fashion. This arrangement prevents higher-level needs from being aroused until lower-level needs are satisfied. At the base of this system of prioritization lies the physiological needs, or basic human needs for food, oxygen, sleep, and water. Above these are the safety needs, or the wanting to feel safe and secure. At the next level are the social needs. These include the need to have friendships, to be loved, to be accepted by others, and to belong to a group. Maslow refers to these physiological, safety, and social needs as the

deficiency needs; they are the essential needs which must be fulfilled before satisfaction of the upper levels of motivation can be achieved.

The upper level needs consist of esteem and self-actualization. Esteem needs include the need for self-respect, for approval from others, and for achieving success. At the apex of the hierarchy are the self-actualization needs. These encompass an individual's need for being all he/she can possibly be - the need for self-fulfillment (Baron, 1992).

The needs discussed in Maslow's hierarchy have a great influence over an individual's actions and decisions, and his/her personality. These needs can either positively or negatively affect one another. Conflicting motives have a tendency to cause confusion in decision making and consequently, inconsistent and unpredictable behavior (Bowe, 1994). Need satisfaction usually results in desirable outcomes.

Participation in athletics can satisfy many inner needs, including the need for prestige, self-enhancement, recognition, and exhibition. Recognition can come from peers, parents, or the public (e.g., newspaper articles, television coverage, school bulletin boards). Another need is to defend one's status and avoid humiliation. The desire to exercise dominance over others and the fear of failure are often powerful motivating factors. The need for affiliation, or a sense of belonging, can also be satisfied through sport participation. An

athlete's trophies and scrapbooks help satisfy this need. Finally, the need to explore, to be curious, and to engage in cognitive processes are met when athletes and students learn the importance and value of training regimens, practice routines, and competitive strategies (Cratty, 1973; Gallon, 1980).

Intrinsic motivation. Intrinsic motivation is the most powerful type of motivation. It refers to the need to feel competent and self-determining. Intrinsic motivation has many components, including perceptions of competence, personal responsibility, and causation. Our self-perceptions are influenced by the way others interact with us. Consequently, positive feedback and the expectations of parents, peers, and educators directly impact our feelings of self-worth. Expectations can instill confidence for those receiving praise and attention, and contribute to their success.

The amount of responsibility a person thinks he/she has in a given task also greatly affects the quality of his/her performance in that task. The more responsibility people are given, the more they tend to produce. This increases feelings of self-worth.

Similarly, perceptions of causation, or the explanations individuals give to account for an outcome also have an impact on feelings of competence (Carron, 1984). The more a person feels like he/she contributes to a success, the better that person will feel about himself/herself.

Extrinsic motivation. Extrinsic motivation is also employed to elicit behavior and to achieve. Incentives such as trophies, certificates, patches, and money are tangible rewards given to those who demonstrate desired conduct. Intangible rewards, such as praise, can also act as motivators. In physical education, teachers assess behavior by giving grades. Teachers also motivate their students by exhibiting clarity, routine, and reasonable expectations in their lessons. When students are aware of what they are to do, the ways they need to go about doing it, and short and long term objectives, they tend to perform better.

Understanding an individual's personal characteristics is important for providing the most conducive environment for athletic success. The psychological preparation of athletes, combined with proper scientific approaches to physical training, are related to superior athletic achievement (Mechikoff & Kozar, 1983).

Personality and Performance Research Studies

Many researchers have investigated the relationship between personality and performance. Gould, Weiss, and Weinberg (1981) found that successful athletes differed from less successful athletes in the cognitive strategies and skills they employed. Successful athletes were also more stable in their self-confidence and had better control of their attentional focusing.

Mahoney, Gabriel, and Perkins (1987) studied elite and non-elite collegiate athletes and found that proficiency in anxiety management, concentration, mental preparation, motivation, and self-confidence were related to skill level differentiation and superior athletic performance. Elite athletes experienced fewer problems with anxiety, were more self-confident, more efficient in dispersing their concentration, were highly motivated, and relied on internally referenced and kinesthetic preparations.

Bowe (1994) determined that differences existed in personal characteristics among high school, collegiate, and professional athletes. Significant differences were discovered between high school and professional athletes in competitive trait anxiety, self-confidence, concentration, mental preparation, and achievement motivation.

Smith and Clack (1996) used the Mental Toughness Questionnaire (MTQ) to determine if personal characteristic differences existed between National Hockey League players and players who did not attain an elite level of performance. The MTQ proved to be a useful predictor of skill level because significant differences between the two groups were found.

Trait Anxiety

Anxiety is a general trait as well as a temporary state of being (Cratty, 1973). Trait anxiety (A-trait) refers to the fact that there is, in each of us, a varying tendency to be fearful in most situations. State anxiety (A-state) is an immediate emotional response that can change from one moment to the next (Nideffer, 1976). For example, an individual's state anxiety may be low the night before an athletic contest, moderate the morning of the game, high right before the start of competition, and return to a normal level once the activity begins (Passer, 1984). An individual's response to a specific stressful stimulus will depend on previous experience with that task. Any stimulus can have anxiety-producing effects if it is interpreted as threatening or dangerous (Spielberger, 1966).

Anxiety can lead to more arousal, which in turn can lead to more anxiety. Therefore, it is beneficial to know as much as possible about the individual's personality and emotional temperament. The need to more fully study both state and trait anxiety has obvious implications for researchers interested in maximizing an individual's performance (Nideffer, 1976).

For many years, researchers have proposed the inverted-U theory to explain the relationship between anxiety and performance. As anxiety first begins to increase, performance improves, but only up to a point. Performance begins to level off as anxiety continues to

increase and eventually deteriorates (Nideffer, 1976). Morris, Davis and Hutchings (1981) found that individuals with high trait test anxiety tended to perform less well under conditions of evaluative stress. In a 1975 study of University of Rochester divers, Walker discovered that independent of the level of difficulty, the lower the level of anxiety, the better the performance (Nideffer, 1976).

Passer (1984) identified a number of factors that produce feelings of anxiety, stress, nervousness, and uneasiness in sport competition. Some of these are: (1) whether the activity is an individual or team sport (individual sports are more stressful), (2) the degree of importance placed on the particular contest (greater importance is usually associated with greater stress), (3) the outcome of the competition (winning decreases stress, while losing or tying increases it), (4) the individual's level of self-esteem (low self-esteem individuals possess higher levels of stress), (5) the expectations held for success (higher expectations are associated with greater amounts of stress), and (6) the level of sport anxiety.

The Sport Competition Anxiety Test (SCAT) was developed for the purpose of measuring competitive trait anxiety (Martens, 1977). Concurrent validity was determined by correlating scores on SCAT with scores on the Children's Manifest Anxiety Scale Short Form (CMAS) (Levy, 1958), the General Anxiety Scale for Children (GASC)

(Sarason, Davidson, Lighthall, Waite, & Ruebush, 1960), and the Trait Inventory for Children (TAIC) (Spielberger, 1973). The coefficients ranged from .28 to .46. These results clearly supported the concurrent validity of SCAT (Martens, 1977).

The reliability of SCAT was determined using the test-retest correlation statistical method. Test-retest reliability was ascertained for boys and girls in grades 5&6 and 8&9 in the Champaign-Urbana public school system. SCAT was administered and then readministered at four different time intervals -- 1 hour, 1 day, 1 week, and 1 month. Results showed that the test-retest reliability for SCAT ranged from .57 to .93, with a mean of .77 for all samples combined. These were acceptable values and significant at the $p < .01$ level of confidence. Parenthetically, this reliability procedure always contains some unknown reactivity because the subjects tend to remember taking the test the previous time. The correlation between SCAT and the combined samples according to age and gender was also calculated. A strong relationship (.81) was found between SCAT and the combined samples. That is, older subjects and males scored highest on SCAT. This reliability coefficient was slightly higher than the one calculated by Martens (1977).

Trait Self-Confidence

Self-confidence, or the faith athletes have in their ability to acquire competence in a particular skill and be successful, is an integral component of motivation. It refers to the athlete's own belief of what he/she is capable of, not what he/she hopes to achieve. Self-confidence is vital to an athlete's success. Trait self-confidence scores typically fall on a continuum from very little confidence (diffidence) to too much confidence (overconfident/cocky). Those athletes who fall somewhere in the middle are said to be self-confident, i.e., they possess an optimal level of self-confidence (Martens, 1987).

As self-confidence increases up to some optimal level, performance improves, but when self-confidence increases beyond this optimal level, performance begins to deteriorate. It deteriorates because overconfidence deludes athletes into believing they are so gifted that they need not prepare diligently, nor put forth as much effort as may be required (Martens, 1987, p. 152).

Coaches and physical educators must remember that self-confidence breeds success, and success breeds self-confidence. Athletes and student learners who have self-confidence set realistic goals, know their limits, and do not let mistakes have a negative effect on their performance. Self-confidence does not guarantee good

performance, because expectations alone cannot produce desired results. An athlete or student must also possess the physical skills and sport knowledge needed to attain his/her goals. Confidence can be developed as one gains greater assurance in one's ability. For example, if a basketball player makes 85% of his/her free throws in practice as well as competition over time, his/her confidence in making free throws will grow.

Self-confidence and self-efficacy. The terms self-confidence and self-efficacy are often used interchangeably. While self-confidence refers to general feelings about self-esteem and performance potential, self-efficacy is concerned with transitory feelings about effectiveness prior to specific achievement episodes. Self-efficacy speaks to one's feelings of effectiveness about precise roles, capacities, and potentials. It helps to form attitudes that lead athletes to participate in some sports and not others (Cratty, 1989).

Over the years, the importance of confidence in achieving superior performance has been clearly recognized. It is assumed that if athletes expect to perform well and are confident in their ability, their actual performance will be greatly enhanced. Conversely, if athletes anticipate performing poorly and have no confidence in their ability, their performance will be negatively affected. Research shows that self-efficacy expectations may change depending on the situation, the task, and the performer's previous

experience (Weinberg, Gould, & Jackson, 1979; Cratty, 1989).

There are two types of confidence: trait sport-confidence (SC-trait) and state sport-confidence (SC-state). Trait sport-confidence is the "belief or degree of certainty individuals usually possess about their ability to be successful". State sport-confidence is the "belief or degree of certainty individuals possess at one particular moment about their ability to be successful in sport" (Vealey, 1986, p. 223). It is important to remember that success means different things to different people.

Vealey (1986) found a significant negative relationship between competitive trait anxiety (A-trait) and trait sport-confidence (SC-trait). That is, if an individual possesses a high level of self-confidence about his/her ability to perform, that person's level of anxiety about competing will be low. Furthermore, if an individual is not very confident of his/her ability to perform, that person will experience high levels of anxiety regarding performance.

Reliability of the Trait Self-Confidence Inventory (TSCI), a popular measure of self-confidence, was established by Vealey using male and female high school and college athletes. Subjects were divided into three groups and administered the TSCI. Group one was given the inventory one day later, group two one week later, and group three one month later. The test-retest reliabilities ranged from .83 to .89, with a mean of .86 for all samples combined.

Concentration/Attention

Concentration refers to the ability to focus attention on a particular item; it is an integral part of performance. It is not a motivator in itself, but is associated with motivation because increased arousal directly affects an athlete's ability to focus his/her attention. One factor contributing to poor performance is an athlete's inability to pay attention to the right things. Being able to control attention enables athletes to focus only on performing the skill in question.

Selective attention refers to the cues athletes focus on in their environment, and these cues, in turn, are regulated by the orienteering response. The orienteering response alerts individuals to unusual or different cues around them. In sport, athletes make use of the orienteering response by attending to specific movements or unusual occurrences. A basketball player, for example, may attend to signs and towels swung behind the basket. In teaching athletes focus skills, coaches must remember that athletes will mostly pay attention to those things which are of interest to them. However, these stimuli may not be beneficial, so an athlete must learn to attend to only those thoughts, emotions, or events which will enhance his/her performance (Bump, 1989). A study of Big Ten wrestlers showed that successful wrestlers were more likely to focus their attention on wrestling related thoughts prior to a match than

their less successful counterparts (Gould, et. al., 1981).

Robert Nideffer (1976) has identified two important dimensions of attention to help athletes and coaches cope with the attentional demands of their particular sport. They are width, i.e., attention broadly or narrowly focused, and direction, i.e., attention geared toward the external environment or oneself. The width dimension refers to the number of stimuli the athlete should focus on. The direction dimension refers to focusing on one's own thoughts, feelings or what is happening in the external environment (Martens, 1987; Bump, 1989). On this point, Morris (1981) wrote:

When students become preoccupied with their own self-evaluation and with the negative possibilities involved in the situation, performance suffers because of the misdirection of attention away from the task at hand (p. 543).

Mental Preparation Skills

Numerous hours are spent in sport practices on improving an athlete's physical skills. However, in recent years, more and more athletes and coaches have become aware of the importance of mental training and mental skill improvement. It is commonly believed that when physical aptitude is very high, 80-90% of a contest is psychological (Martens, 1987; Bump, 1989). In other words, the

winner is more likely to be the one who is better mentally prepared, i.e., has better concentration, is more relaxed and motivated, and has more confidence in his/her abilities (Danish & Hale, 1983).

Therefore, it is puzzling why little or no time is spent on helping athletes mentally prepare for the challenges of their particular sport.

Despite the fact that the importance of psychological skills training is commonly recognized, coaches and educators offer several reasons for not devoting more practice or class time to it. Some do not feel competent to teach psychological skills to their athletes and students. Others believe that such skills are innate, and cannot be taught. Still others question the relationship between psychological training and performance outcome.

The basic skills included in a Psychological Skills Training (PST) Program are: self-confidence/goal setting skills, energy management, attention control, stress management, and imagery. Through psychological skills training athletes come to better understand their psychological deficiencies and where they need to improve (Martens, 1987).

Goal setting. Coaches and athletes may arguably be the most goal- and achievement-oriented people in society, but many times their goals are ineffective, unrealistic, and too general (Mechikoff & Kozar, 1983; Martens, 1987). Goals need to be performance- and not outcome-based, realistic, challenging, specific, short-term, and

individual. All things being equal, goal setting usually means: improved performance, improved practice, clear expectations, decreased anxiety, absence of boredom, and increased intrinsic motivation, satisfaction, and self-confidence (Bump, 1989).

Energy management. Energy management involves being able to gain control of conscious thoughts and to appropriately direct them to enhance performance. Just as coaches physically condition an athlete's body to handle the demands of competition, they also can psychologically condition the athlete's mind for increased psychic energy, i.e., the vigor, vitality, and intensity with which the mind functions (Martens, 1987). Such positive energy can be efficiently produced through proper mind exercises and constructive, positive, and realistic thoughts.

To understand how to manage their psychic energy, athletes must comprehend the relationship between stress and psychic energy, and stress and performance. Stress occurs when an imbalance is perceived between what is being demanded and the ability to meet the demand. When there is a complete absence of stress and the athlete is totally immersed in an activity, he/she is said to be in a state of flow. In such a state, athletes feel as though they can control anything within their own world. Instead of thinking, they react first (Smith, 1996).

Stress will occur, either as boredom or anxiety, when a task is too easy or too difficult. The inverted U model was developed to explain the relationship between psychic energy and performance. The traditional interpretation of the model says that optimal performance occurs at moderate levels of psychic energy. However, a newer interpretation suggests that an athlete cannot have too much positive energy (excitement, happiness, enjoyment, realistic goals). Performance deteriorates only in the presence of negative psychic energy (stress, worry, fear, anger) (Bump, 1989).

Stress management. Some of the techniques utilized to control stress levels are: environmental engineering, progressive relaxation training, and self talk. Environmental engineering refers to reducing the amount of uncertainty an individual experiences. However, not all uncertainties can be eliminated from sport; some provide challenges, others provide excitement.

Progressive muscle relaxation is a process that involves the gradual tensing and relaxing of the muscles of the body. It can be used to train individual to release physical tension and achieve a state of relaxation (Martens, 1987; Cratty, 1989).

Through the technique of self talk, individuals are asked to produce thoughts and emotions that are constructive, rational and productive. In essence, individuals talk to themselves in an effort to build confidence and convince themselves that they can succeed in

the task they are undertaking (Weinberg, 1984).

Imagery. Imagery is an experience whereby an individual can see, hear, and feel things in the absence of external stimuli. It is more than just visualizing an event, because imagery incorporates all of the senses (Martens, 1987). A few important conditions must be met in order to properly execute imagery. Vividness is the extent to which a created image matches the actual event or skill. People vary on how clearly they can call up an image. Controllability is an individual's ability to hold images long enough to see exactly what needs to be improved. The degree to which an individual can manage his/her cognitions, emotions, and mental strategies related to sport will likely determine success (Cratty, 1989).

Achievement Motivation

Achievement motivation is the desire to meet standards of excellence, to accomplish difficult tasks, and to outperform others (McClelland, 1961). Interestingly, the challenge to achieve for one person can pose a threat for another. The tendency to avoid failure often associated with anxiety is as fundamentally important in achievement-oriented action as the tendency to achieve success (Atkinson & Raynor, 1978).

The competitive drive in achievement situations is influenced by the individual's need for success and his/her fear of failure

(Carron, 1984). Persons high in achievement motivation tend to prefer situations that involve moderate levels of risk because they present a good chance for success, a low rate of failure, and challenge. In contrast, situations very high in risk are ones in which failure is likely, and high achievement persons strongly dislike failure. Situations very low in risk do not provide the necessary challenge that high achievers relish (Baron, 1992).

Individual personality factors and the test situation both influence achievement motivation. Kukla (1972) showed that high achievers attributed outcome to ability and effort, intermediate achievers considered ability and luck the chief determinants of outcome, while low achievers expected ability alone to determine success or failure. Also, individuals whose motivation is to succeed will view success as a consequence of their ability, and blame failure on insufficient effort. Those whose motives are to avoid failure attribute being unsuccessful to a lack of ability, and their rare successes to luck (Martens, 1987). Kukla (1972) observed that:

Persons high in achievement motivation have been conceptualized as those subjects who experience considerable pride in success and relatively little shame at failure, whereas low achievers are thought to derive relatively little pride from success and great shame from failure. It is assumed that precisely these

differences in affective dispositions account for the divergent performances of high and low achievement groups (p. 169).

Leadership Skills

By definition, leadership is individual action taken to influence others toward meeting their goals. Leadership emphasizes interpersonal relationships and has a direct impact on group motivation. Great leaders have the ability to adopt the perspective of the other person, to understand how that person perceives events and experiences emotions. You must earn the respect of others in your group to have the power needed to help them achieve excellence (Martens, 1987; Tutko & Richards, 1978).

There are certain qualities that set leaders apart from followers. Leaders provide direction and set goals. This direction typically focuses on the steps needed to reach the goals considered important by the group. Effective leaders contribute to a psychological and social environment that is conducive to achieving group goals. Leaders motivate the group to pursue their common goals. They also instill values, resolve conflicts and communicate openly. Communication is an integral component of effective leadership, for the group must be aware of its goals and the ways in which they can be achieved (Martens, 1987). True commitment from

the group toward a common goal is the result of the leader helping others believe that they can accomplish what they've set out to do.

Summary

All of the aforementioned personal characteristics are related, either directly or indirectly to sport performance. It is important for physical educators and coaches to know and understand how each contributes to superior performance. Once this knowledge and understanding is gained, techniques and strategies can be formulated in order to maximize the individual's performance.

Chapter III

Methods and Procedures

The purpose of the investigation was to determine whether there are psychological differences between beginning, intermediate, and advanced sport performers. The specific characteristics included: competitive trait anxiety, trait self-confidence, concentration, mental preparation skills, achievement motivation, and leadership.

Subjects

The subjects for the investigation were 274 undergraduate students, 168 males and 106 females, at State University of New York, College at Brockport. They were randomly selected from beginning, intermediate, and advanced physical education activity classes. The 113 beginning level sport performers were chosen from two badminton (N=21), one basketball (N=26), one golf (N=12), two racquetball (N=37), and one tennis class (N=17). The 87 intermediate level sport performers were chosen from two badminton (N=30), one soccer (N=12), one tennis (N=18), and one volleyball class (N=27). The 74 advanced level sport performers were chosen from one soccer (N=32), one softball (N=26), and one tennis class (N=16).

Instrumentation

The self-evaluation questionnaire used in the investigation was constructed by Smith (1994); it consisted of two previously published subscales and four subscales of his own design. The questionnaire is divided into three sections.

Section one was comprised of ten questions. Subjects indicated their answers on a continuum from "hardly ever" (1-3) to "sometimes" (4-7) to "always" (8-10). These questions measured trait anxiety and is a modified version of the Sport Competition Anxiety Test (SCAT) (Martens, Burton, and Vealey, 1990). The modification simply consisted of changing the answers to a ten point Likert scale to keep it consistent with the other dependent measures.

Section two included twelve questions to assess trait self-confidence. Responses ranged from "low" (1-3) to "medium" (4-7) to "high" (8-10). These items measured how confident the student is when performing in class, in comparison to the most confident performer he/she knows. This previously validated instrument is known as the Trait Sport-Confidence Inventory (TSCI) (Vealey, 1986).

Section three included twenty-three questions which assessed the sport performer's psychological dispositions. A 10-point Likert Scale was used to record the subject's answers; the scale ranged from "strongly disagree" (1-5) to "strongly agree" (6-10). Minor word

adjustments were made to meet the objectives of the study, since the instrument was designed for the competitive sport context, not a physical education activity class learning situation. For example, "athlete" was changed to "performer", "game/competition" was changed to "class", and "competing" was changed to "performing". The subject's answers to these questions were used to measure his/her: (1) concentration, (2) mental preparation skills, (3) achievement motivation, and (4) leadership skills.

Administration of the Instrument

Before the questionnaire was administered, subjects were assured that their answers would be anonymous. Their right to confidentiality was guaranteed by reading them a statement of informed consent. Subjects were told that they would be unable to be identified by their answers. They were reminded that they could withdraw from the study anytime they wished.

The questionnaire was administered to students in selected undergraduate physical education activity classes at the State University of New York, College at Brockport. The instrument took approximately 10-15 minutes to complete, however, subjects were given as much time as they required. General directions for each section were verbalized and subjects were encouraged to answer all questions to the best of their ability. They were reminded that there

were no "right" or "wrong" answers, that only their own opinions or feelings counted.

Analysis of Data

Based on the subjects' responses to all questionnaire items, a Mental Toughness Composite Score (hereafter referred to as MTCS) was calculated for each (Smith, 1994). The score was the average of the six psychological characteristics scores. Means and standard deviations for each characteristic, as well as the MTCS, were calculated for the beginning, intermediate, and advanced sport groups.

Seven one-way analyses of variance (ANOVAs) were calculated to identify significant differences for each of the six personal characteristics and the MTCS across the three groups. A follow-up multiple comparison test was done to determine specific between-group differences.

Chapter IV

Results

The study was concerned with measuring differences in six sport specific personal characteristics across three skill performance levels. The different characteristics measured were: competitive trait anxiety, trait self-confidence, concentration, mental preparation skills, achievement motivation, and leadership. A self-evaluation questionnaire was administered to 274 undergraduate students in beginning, intermediate, and advanced physical education activity classes (113 beginning, 87 intermediate, and 74 advanced performers). Each subject's questionnaire was individually scored and a Mental Toughness Composite Score calculated (the average score for the six personal characteristics).

An analysis of variance (ANOVA) was used to determine significant differences between the three groups. A follow-up multiple comparison test was used in this particular investigation to identify individual group differences. Differences between ability groups could have been statistically masked in calculating the ANOVA since more than two groups were compared. The level of confidence for all statistical tests was set at the .05 level.

Means and Standard Deviations**TABLE 1**

Means and Standard Deviations For Each of the Six Personal
Characteristics and the MTCS

<u>Variable</u>	<u>Sample</u>	<u>N</u>	<u>Mean</u>	<u>S. D.</u>
Competitive Trait Anxiety	Beginning	113	63.02	17.33
	Intermediate	87	66.43	18.01
	Advanced	74	62.04	15.92
Trait Self-Confidence	Beginning	113	66.12	18.29
	Intermediate	87	69.59	18.98
	Advanced	74	69.15	17.17
Concentration	Beginning	113	67.03	13.99
	Intermediate	87	71.02	14.36
	Advanced	74	66.51	16.01
Mental Preparation Skills	Beginning	113	57.55	15.27
	Intermediate	87	62.14	19.30
	Advanced	74	62.68	14.49
Achievement Motivation	Beginning	113	52.18	12.01
	Intermediate	87	51.55	12.79
	Advanced	74	56.07	11.48
Leadership Skills	Beginning	113	54.58	12.68
	Intermediate	87	55.90	13.64
	Advanced	74	56.23	13.15
Mental Toughness Composite Score	Beginning	113	60.11	9.74
	Intermediate	87	61.64	10.12
	Advanced	74	62.26	9.52

Intermediate sport performers had the highest mean scores for competitive trait anxiety (M=66.43), trait self-confidence (M=69.59) and concentration (M=71.02), while advanced sport performers had the highest mean scores for mental preparation skills (M=62.68), achievement motivation (M=56.07), leadership skills (M=56.23), and the mental toughness composite score (M=62.26). Beginning sport performers had the lowest mean scores for four of the seven variables - trait self-confidence (M=66.12), mental preparation skills (M=57.55), leadership skills (M=54.58), and the MTCS (M=60.11). See Table 1.

Analysis of Variance**TABLE 2**

ANOVA For Beginning, Intermediate, and Advanced Sport Performers
For Each of the Six Personal Characteristics and the MTCS

<u>Variable</u>	<u>Sum of Squares</u>	<u>df</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig. of F</u>
CTA	897.502	2	448.751	1.52	0.22
TSC	713.825	2	356.912	1.08	0.34
CONC.	1058.891	2	529.445	2.46	0.09
MPS	1564.672	2	782.336	0.47	0.63
AM	955.127	2	477.563	3.23	0.04*
LS	148.792	2	74.396	0.43	0.65
MTCS	234.790	2	117.395	1.22	0.30

***significant at the .05 level**

KEY:

CTA	=	Competitive Trait Anxiety
TSC	=	Trait Self-Confidence
CONC.	=	Concentration
MPS	=	Mental Preparation Skills
AM	=	Achievement Motivation
LS	=	Leadership Skills
MTCS	=	Mental Toughness Composite Score

A statistically significant difference was found only for achievement motivation when the beginning, intermediate, and advanced performers were compared. See Table 2.

Summary of ANOVA Tests

No significant differences were found across the three skill levels for five of the six personal characteristics and the mental toughness composite score. A significant F-ratio was calculated for achievement motivation.

Multiple Comparison Test Results

This statistical tool was used to identify significant mean differences between groups.

Multiple Comparison Test for Competitive Trait Anxiety

There were no significant mean differences for competitive trait anxiety when the beginning, intermediate, and advanced sport performers were compared. See Table 3.

Table 3. Multiple Comparison Test for Competitive Trait Anxiety

<u>Group Comparisons</u>	<u>Sum of Squares</u>	<u>df</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig. of F</u>
1&2	570.771	1	570.771	1.84	0.18
1&3	42.697	1	42.697	0.15	0.70
2&3	768.801	1	768.801	2.64	0.11

KEY:

Group 1 = beginning performers

Group 2 = intermediate performers

Group 3 = advanced performers

Multiple Comparison Test For Trait Self-Confidence

There were no significant mean differences in trait self-confidence when the beginning, intermediate, and advanced sport performers were compared. See Table 4.

Table 4. Multiple Comparison Test for Trait Self-Confidence

<u>Group Comparisons</u>	<u>Sum of Squares</u>	<u>df</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig. of F</u>
1&2	589.251	1	589.251	1.70	0.19
1&3	409.118	1	409.118	1.28	0.26
2&3	7.656	1	7.656	0.02	0.90

KEY:

Group 1 = beginning performers

Group 2 = intermediate performers

Group 3 = advanced performers

Multiple Comparison Test For Concentration

There was a significant mean difference when the beginning (67.03) and intermediate (71.02) sport performers were compared. The mean difference between intermediate (71.02) and advanced (66.51) sport performers approached significance ($p < .06$), but not in the hypothesized direction. See Table 5.

Table 5. Multiple Comparison Test For Concentration

<u>Group Comparisons</u>	<u>Sum of Squares</u>	<u>df</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig. of F</u>
1&2	785.081	1	785.081	3.92	0.05*
1&3	11.770	1	11.770	0.05	0.87
2&3	813.162	1	813.162	3.55	0.06

***significant at the .05 level**

KEY:

Group 1 = beginning performers

Group 2 = intermediate performers

Group 3 = advanced performers

Multiple Comparison Test for Mental Preparation Skills

A significant mean difference was found when the beginning (57.55) and advanced (62.68) sport performers were compared on mental preparation skills. No other significant mean differences were found. See Table 6.

Table 6. Multiple Comparison Test for Mental Preparation Skills

<u>Group Comparisons</u>	<u>Sum of Squares</u>	<u>df</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig. of F</u>
1&2	1035.268	1	1035.268	0.47	0.50
1&3	1175.427	1	1175.427	5.25	0.02*
2&3	11.563	1	11.563	11.56	0.95

***significant at the .05 level**

KEY:

Group 1 = beginning performers

Group 2 = intermediate performers

Group 3 = advanced performers

Multiple Comparison Test for Achievement Motivation

Significant mean differences were found when the beginning (52.18) and advanced (56.07) sport performers, and intermediate (51.55) and advanced (56.07) sport performers were compared on the achievement motivation variable. See Table 7.

Table 7. Multiple Comparison Test for Achievement Motivation

<u>Group Comparisons</u>	<u>Sum of Squares</u>	<u>df</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig. of F</u>
1&2	19.218	1	19.218	0.13	0.72
1&3	676.856	1	676.856	4.86	0.03*
2&3	815.460	1	815.460	5.47	0.02*

***significant at the .05 level**

KEY:

Group 1 = beginning performers

Group 2 = intermediate performers

Group 3 = advanced performers

Multiple Comparison Test for Leadership Skills

No significant mean differences were found for the leadership skills variable when the beginning, intermediate, and advanced performers were compared. See Table 8.

Table 8. Multiple Comparison Test for Leadership Skills

<u>Group Comparisons</u>	<u>Sum of Squares</u>	<u>df</u>	<u>mean Square</u>	<u>F</u>	<u>Sig. of F</u>
1&2	85.820	1	85.820	0.50	0.48
1&3	122.407	1	122.407	0.74	0.39
2&3	4.439	1	4.439	0.03	0.88

KEY:

Group 1 = beginning performers

Group 2 = intermediate performers

Group 3 = advanced performers

Multiple Comparison Test For Mental Toughness Composite Score

No significant mean differences were found for the mental toughness composite score when the three skill levels were compared. See Table 9.

Table 9. Multiple Comparison Test for Mental Toughness Composite Score

<u>Group Comparisons</u>	<u>Sum of Squares</u>	<u>df</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig. of F</u>
1&2	116.195	1	116.195	1.18	0.28
1&3	206.810	1	206.810	2.22	0.14
2&3	15.030	1	15.030	0.16	0.69

KEY:

Group 1 = beginning performers

Group 2 = intermediate performers

Group 3 = advanced performers

Summary of the Multiple Comparison Tests

A significant mean difference was found between beginning and intermediate performers in concentration, and between beginning and advanced performers in mental preparation skills. Significant mean differences were also identified for achievement motivation between beginning and advanced performers, and intermediate and advanced performers. Lastly, a significant mean difference was approached between intermediate and advanced performers in the area of concentration.

Chapter V

Discussion, Conclusions, and Recommendations

Discussion of Results

The ANOVA results indicated that there was only one personal characteristic, achievement motivation, which significantly differed between beginning, intermediate, and advanced performers. A second characteristic, concentration, approached statistical significance. No significant differences were found for the mental toughness composite score, competitive trait anxiety, trait self-confidence, mental preparation skills, and leadership skills.

The Multiple Comparison Test results yielded no significant differences by skill level for competitive trait anxiety, trait self-confidence, leadership skills, or the mental toughness composite score. Intermediate performers had significantly higher concentration scores than beginning performers. Advanced performers had significantly higher mental preparation skills and achievement motivation scores than beginning performers. Intermediate performers just missed having significantly higher concentration scores than advanced performers. Advanced performers had significantly higher achievement motivation scores than intermediate performers.

Competitive trait-anxiety. Power (1982) with male track and field athletes, Gould, Horn, and Spreeman (1983) with elite youth wrestlers, Passer (1983) and Smith (1983) with youth sport athletes, and Maynard and Howe (1987) with rugby players, all failed to find a significant relationship between competitive trait anxiety and performance ability. The nonsignificant findings for competitive trait anxiety across beginning, intermediate, and advanced sports skill groups found in this investigation were not unexpected given the fact that activity classes are far less competitive than actual athletic contests.

On the other hand, Mahoney, et. al. (1987) discovered that elite athletes experienced lower levels of competitive trait anxiety than non-elite athletes, and Bowe (1994) found that high school players had significantly higher levels of competitive trait anxiety than collegiate and professional basketball players. However, these findings are consistent with previous research on the subject because elite athletes are likely to experience greater anxiety given the pressures associated with higher levels of competition.

Trait self-confidence. In this investigation, there were no significant differences in trait self-confidence among beginning, intermediate, and advanced performers. These results were inconsistent with previous research. Gould, et. al. (1981) and

Mahoney, et. al. (1987) found that higher levels of self-confidence were associated with better skilled athletes. Bowe (1994) and Smith and Clack (1996) determined that elite level athletes possessed more self-confidence than their less skilled counterparts. However, physical activity classes are far less competitive than actual athletic contests. Perhaps the physical activity environment did not provide the necessary conditions for self-confidence to emerge as an integral factor in performance. It is also possible that the questionnaire used was an inappropriate instrument to measure competitive trait self-confidence in an essentially learning-based environment.

Concentration. A significant difference was found between beginning and intermediate performers in concentration, that is, intermediate performers scored higher on their ability to concentrate. It makes sense that as individuals become more skillful, they learn which skill components they need to attend to in order to be successful. For example, an advanced tennis player does not have to focus on the proper grip or stance; both have become automatic for the skilled player. Higher scores on this subscale indicate a better ability to focus on relevant performance cues while ignoring distracting factors in the surrounding environment.

In support of this explanation, Gould, et. al. (1981) found that successful wrestlers were better able to focus their attention on

performance. Bowe (1994) found that high school basketball players significantly differed from collegiate and professional players. That is, professional basketball players do not focus their attention as much on performance as do high school players. When a player reaches the professional level, he/she does not need to focus on basic skill components; they have become automatic through much practice.

Mental preparation skills. The advanced performers scored significantly higher than beginners on mental preparation skills. One explanation could be that these individuals are experienced enough to know how to mentally prepare themselves prior to performance. For example, athletes will resort to superstitions or rituals in order to mentally prepare themselves for competition. Some may listen to music before performing, while others sit in silence.

Achievement motivation. The advanced performers had higher achievement motivation scores than the beginners or intermediates. This makes sense because individuals generally become more motivated as skill levels improve. Even after an individual reaches the highest level in his/her sport, the natural tendency is to seek even more challenges in order to stay at the top of his/her game.

Leadership skills. Comparison of leadership skills across the three ability groups revealed no significant differences. These results were not surprising because leadership is not necessarily tied to performance. As individuals become more skillful, they do not necessarily become better leaders, or desire to become leaders. However, experience, regardless of ability, may contribute to improved leadership skills.

Mental toughness composite score. No significant differences were found for the mental toughness composite score. Differences in the composite score across beginning, intermediate, and advanced groups of performers were not anticipated because the questionnaire was designed for the sport context, even though the wording was changed for the physical education environment.

Some researchers suggest that elite performers can be distinguished from lower-level performers according to their psychological state and trait profiles (Morgan & Costill, 1972, Morgan & Pollock, 1977). Contrarily, other researchers have found that skill level is unrelated to personality. Silva (1984) observed that as a group of individuals improve their skills, they become more alike in their personalities and psychological profiles. Beginners have dissimilar personalities and personal characteristics. However, as their skills develop, they become more alike on selected

characteristics. Thus, as individuals attain elite levels of skill, they become a homogeneous group (Cox, 1994).

Conclusions

The psychological preparation of individuals, combined with scientific physical training regimens helps account for superior athletic achievement (Mechikoff & Kozar, 1983). Although few studies have documented differences in psychological characteristics across varying ability groups, such knowledge should be of considerable value to those who teach and coach in the skill domain.

The following conclusions are justified in light of the researcher's findings.

- (1) Beginning and intermediate performers significantly differed only in achievement motivation.
- (2) Intermediate and advanced performers significantly differed only in achievement motivation.
- (3) Beginning and advanced performers significantly differed in achievement motivation and mental preparation skills.
- (4) The Mental Toughness Questionnaire was a weak predictor of varying skill levels in a physical education setting.

(5) Since four of the six variables did not yield significant differences among or between the three skill levels, it was concluded that there are minimal interaction effects between personal characteristics (e.g., competitive trait anxiety, trait self-confidence, concentration, mental preparation skills, achievement motivation, and leadership skills) and skill levels in physical education activity classes.

Recommendations

After reviewing the results and conclusions of the investigation, the following recommendations are offered to future researchers.

- (1) Compare personal characteristics among individuals of the same skill level to discover if there are differences within groups of the same ability.
- (2) Investigate gender differences with respect to each of the personal characteristics to see whether males and females differ at each of the skill levels.
- (3) Examine the personality characteristics of individuals in a single activity/sport, at the beginning, intermediate, and advanced levels.

- (4) Compare individual and team sport athletes on the six personal characteristics.
- (5) Administer the questionnaire during the first and last weeks of an activity class to see whether changes in personal characteristics occur as the participant gains more knowledge and skill.
- (6) Use reliable and valid skill tests to categorize subjects according to ability level rather than the self-selection procedures employed in the present investigation. For example, the researcher has no way of knowing whether the students enrolled in intermediate golf were "true" intermediates - better skilled than "beginning" students, but not as skilled as "advanced" students.

APPENDIX A

QUESTIONNAIRE

SECTION TWO

Answer the questions below based on how confident you generally feel when you perform in badminton class. Compare your self-confidence to the most self-confident performers you know.

When you perform, how confident do you generally feel? (Circle the correct answer).

	<u>LOW</u>			<u>MEDIUM</u>				<u>HIGH</u>		
	1	2	3	4	5	6	7	8	9	10
Compare your confidence in your ability to execute the skills necessary to be successful to the most confident performer you know.										
Compare your confidence in your ability to make critical decisions during completion to the most confident performer you know.										
Compare your confidence in your ability to perform under pressure to the most confident performer you know.										
Compare your confidence in your ability to execute successful strategy to the most confident performer you know.										
Compare your confidence in your ability to concentrate well enough to be successful to the most confident performer you know.										
Compare your confidence in your ability to adapt to different game situations and still be successful to the most confident performer you know.										
Compare your confidence in your ability to achieve your competitive goals to the most confident performer you know.										
Compare your confidence in your ability to consistently be successful to the most confident performer you know.										
Compare your confidence in your ability to think and respond successfully during competition to the most confident performer you know.										
Compare your confidence in your ability to meet the challenge of competition to the most confident performer you know.										
Compare your confidence in your ability to be successful even when the odds are against you to the most confident performer you know.										
Compare your confidence in your ability to bounce back from performing poorly and be successful to the most confident performer you know.										

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